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GEEKS DO IT BETTER OR DO THEY?

LOVE, SEX AND SOCIAL INTERACTIONS WILL CHANGE BECAUSE
OF TECHNOLOGY – FOR BETTER OR WORSE





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A fine balance

Let's face it, the idea of talking openly about a sensitive topic – like the subject matter of our cover story – makes even the most accomplished badasses amongst us blush and squirm with embarrassment. For whatever reason, maturity is hard to come by when anything to do with love, relationships, and sex is being discussed. You'll find attempts at such conversations usually devolving into giggles, lewd humour, or complete reticence.

At Digit, we're always pushing your limits, and even with a topic this sensitive, we're going to push you harder than ever before. The rationale is, with the kind of unfiltered information overload we have in the world today, no one is really sequestered anymore; least of all Digit readers. Even if you haven't consciously thought about it, you kind of already know that technology is going to affect, or rather is affecting these areas in more ways than we thought possible. This is exactly the investigative approach our cover story aims to take. Is technology making it easier or harder to find true love? Can a machine know what is good for you? And ultimately, can a machine replace human companionship? These are just some of the questions we are trying to find answers to in this issue. What we figure is, since "Naughty Tech" is going to become mainstream (and commonplace) quite soon, you might as well know all about it now, and prepare yourself to...err... take it all in...

Despite our rationalisation, the topic of the cover story is going to raise a few eyebrows and I expect some amount of hate mail merely based on the fact that it's a sensitive topic. Much of the righteous indignation will erupt without even bothering to read our stories to find out how well (or badly) we've handled the topic. Of course, we can't resist the puns, but that's only to keep it light hearted because nothing breaks tension – sexual or otherwise – like humour. And as long as the cover story raises eyebrows and nothing else (as was the intent), I'm happy.


When I was growing up, access to technology wasn't a birthright the way it almost is today. The scraps of information we used to forage for back then, brought along a lot of misinformation. Is that true even today? While planning this cover story, or rather

when discussing its seemingly controversial nature, I had an interesting thought: if we decided against doing it, who are we really trying to protect? Readers like you or me don't need protecting. We, in fact, need to be enlightened, entertained and engaged in newer innovative ways. But there is a section that needs to be protected. I have a five-year old niece whose exposure to technology at this young age really scares me at times. She has almost unlimited access to her parents' phones. It is very possible for her to stumble across the dark alleyways of cyberspace quite accidentally.

A recent Norton survey reported that 40 percent of Indian parents allowed their children to access the internet before age 11. And while our broadcast ministry is on a rampage controlling what can be shown on television – a largely supervised form of entertainment in most homes – only 48 percent of parents allow internet access with supervision and only 37 percent review and approve all apps before they are downloaded.

While I'm all for freedom in all its forms, I feel that until these very young users are out of their most vulnerable stages, i.e., until they hit their late teens, parental control on the internet is a must. There are a ton of bad things that can happen from unrestricted access – cyber bullying, unwitting installation of malware, revealing too much personal information to strangers, and even learning things like hacking, which needs a thorough understanding of ethics before one can go mucking about in that sphere.

For what it's worth I'm not advocating a full lockdown. Far from it. I believe there is a fine balance between how much exposure those impressionable or vulnerable individuals should be allowed and how much unrestricted freedom should be given.

As always, I'm always open to debate and eagerly await your thoughts. 



Siddharth Parwatay
Managing Editor

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“When I was growing up, access to technology wasn't a birthright the way it almost is today. The scraps of information we used to forage for back then, brought along a lot of misinformation.”

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Doin' it geeky style!

If we were talking about present day, many would laugh at the idea that “Geeks do it better”. We geeks have got a reputation (deservedly, or not) for being bad at it... However, if history is anything to go by, we geeks also have a way of leveling the playing field using technology.

Remember when only geeks had smartphones, used computers, were tech literate, stayed indoors, spent all their time online, and perpetually had their noses buried in screens? Believe it or not there was a time the world laughed at us geeks for being like that... and then the whole darn world discovered technology, making that description above apply to pretty much anyone literate who is able to afford a smartphone.

Every single thing that's common now was once used only by an elite group of members. In the distant past that group was just a bunch of rich folk who could afford luxuries, but for the past 20 years, that's been us geeks.

We geeks are the first adopters of new technology, which then spreads to everyone else. And to think all this happened when being a geek was considered uncool; when the word “Geek!” was usually used as an insult! Think about that. You were able to influence the world despite being uncool, imagine how influential you are now that being a geek is cool?

The final frontier, waiting for geekdom and technology to conquer it, was love, sex and social interactions. We've already dispensed with social interactions for a large part of the world's population – almost all of it being digital and on social networks. Remember, I make no moral judgements when I say that – I don't claim social networks to be “better”, I'm merely stating that they're pretty much the only form of socialising for an increasing number of young people, for better or worse.

Next stop? Love and sex of course.

In the era of instant gratification and being spoon-fed stuff that an algorithm has decided that we might want to like and share, it's hard to be anything but self-centred. If it wasn't apparent before, it's crystal clear now that we love ourselves more than anyone else, and we're not even ashamed to admit it (<http://digit.in/milnar>). Add to this the


fact that parents of millennials have ruined them by convincing them that they're special and unique, and we end up with what is essentially the death of the ability to truly love someone else.

Love may not be important to many of us, but sex certainly is. Everyone dreams of a fantasy partner, but we don't want to deal with the baggage that all humans bring to the table. With a lowered tolerance for flaws, and an inability to accept and overcome shortcomings of others, what choice are we really left with?

The mythological story of Pygmalion springs to mind. He wanted a perfect woman, made a statue of what she would look like, then fell in love with his statue. Aphrodite granted him his wish and the statue came to life when he kissed it. He lived happily ever after with her.

This is what we all secretly want, and technology is fast closing in on a way to make this possible. Of course I say “technology is fast closing...” as if it has a mind of it's own, when I mean to say geeks. We lead the forefront of technology, some of us build the technology, and then many of us encourage it when we throw our money at it as early adopters. The general public comes later (pun not intended).

There really is nothing we are going to be able to do to stop this, however, because when the blood rushes to the wrong places, logic goes out the window. We will get our love bots, there's no stopping that, but will they be more like Pygmalion's statue or Frankenstein's monster? ...especially once they catch on about how easy we are to control when we want to get off.

I don't have the answers, I don't think anyone does. But I would still love to hear your opinions, so give me a holler. 



Robert Sovereign-Smith
Executive Editor
robert@digit.in

“Every single thing that's common now was once used only by an elite group of members.”

A handwritten signature in black ink, which appears to read 'Robert Sovereign-Smith'.

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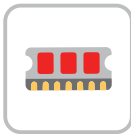
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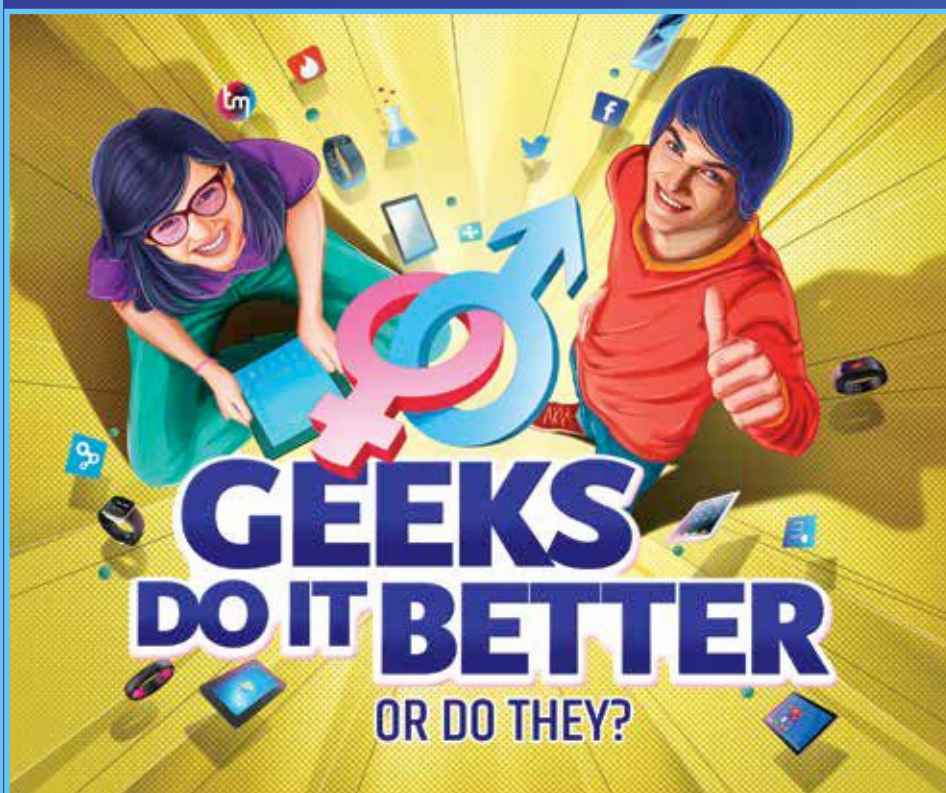
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- OpenShot

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- Discord
- Foxit Reader
- Opera Neon
- Potplayer
- SUPERAntiSpyware
- Telegram
- WhatsApp for Desktop

MIT OpenCourseware

This course on Artificial Intelligence introduces students to representations, techniques, and architectures used to build applied systems and to account for intelligence from a computational point of view.

Internet 101

- Wires, cables and Wi-Fi
- IP addresses and DNS
- Packet, routers, and reliability
- HTTP and HTML
- Encryption and public keys
- Cybersecurity and crime

Indie games

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- Armed to the Gears
- Arson
- HoPiKo
- Night Lights
- Ruggnar
- Star Quest
- World War Party
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- Xenopunch

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- Avidemux
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MSI Z270 GAMING M7
Nubia Z11
Roccat Cross
Roccat Suora FX
WD Blue SSD 250GB
Xiaomi Redmi Note 4

Comparison Test

Coolpad Cool1
Honor 6X
Lenovo Z2 Plus
Vivo V5
Xiaomi Redmi Note 4

GAMES REVIEWED THIS MONTH

Final Fantasy XV
Watch Dogs 2

Mobile Monthly

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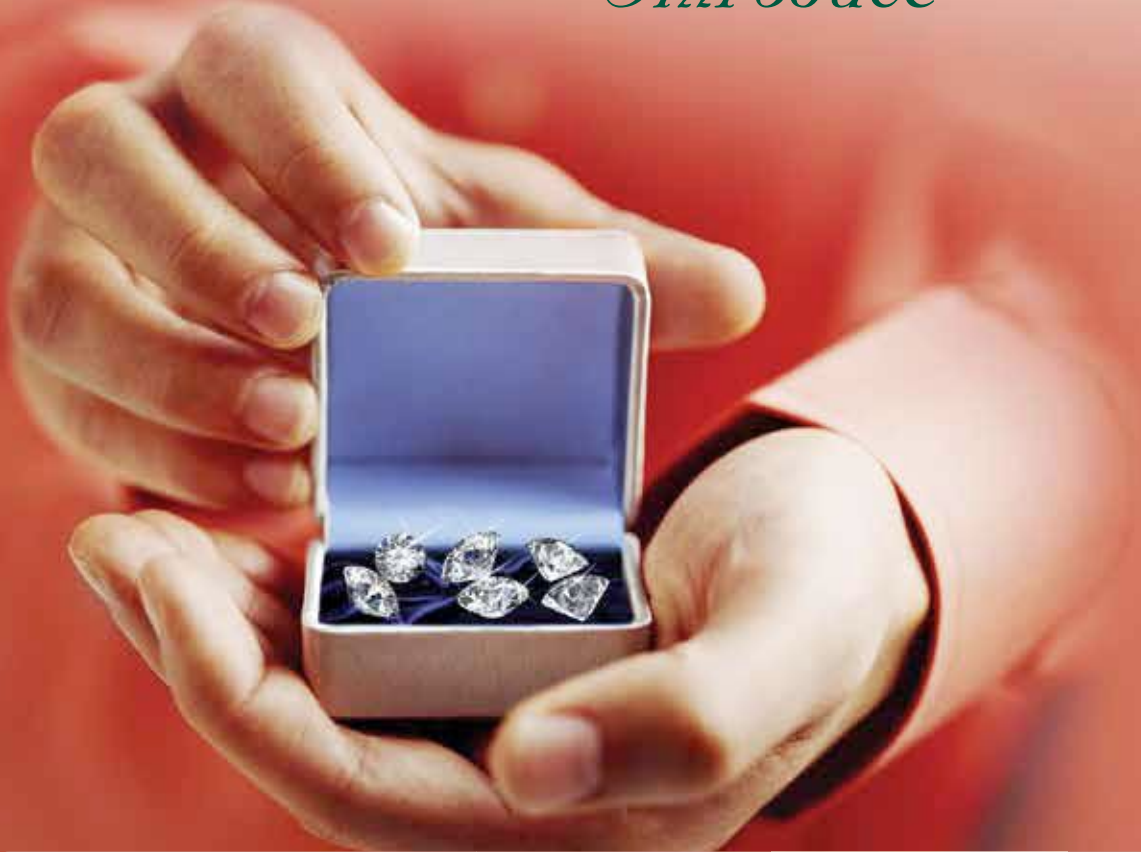
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✉ About 10 years ago, a friend told me about this magazine which is about the latest and the greatest in technology. When I asked him what it was, behold, he showed me Digit in print. Absolute awe. It was like Krishna's Bhagavadgita to Arjuna. My friend was kind enough to share his entire Digit collection with me. I remember spending over a week pouring my heart and soul to understand over two years' worth of printed material – try out every trick, installing-testing-uninstalling every software in the DVD.

I subscribed to Digit as soon as I started earning. But times have changed. As years passed, the roles changed. People didn't need to hunt for information anymore. It is easily available now, searchable, subscribe-able and sometimes forcefully shoved into their faces. Soon I unsubscribed as I felt there was no point in waiting for updates for a month, when they can be obtained in seconds. However, my love for Digit always remained. Whenever I visit a bookstore, I tend to end up at least having a glance at the cover.

From time to time, I tend to specifically visit digit.in to get any technology updates. The engagement on the web platform is nowhere near the nostalgia I felt when I was reading the magazine a few years back. I know it's not curated as well as the magazine, but the content itself is nowhere near the quality of the articles I remember reading. Please understand that I realise the difference between the reading experience of printed books to the digital platform as I do a lot of both - I own a kindle, read a lot of digital books, visit a lot of other tech sites too.

Probably the 'oomph' factor has gone out due to the frequency of the changes in the overall technology scape, but - after visiting digit.in quite a few times in the last few years, I've reached a disappointing conclusion: the digit.in web platform needs a thorough quality check in terms of the content it publishes. I've read many reviews, news updates on digit.in, but it seems to be increasingly become lesser of a choice for me turn to. I've crossed a break-even now. Please try to improve on this front.

Feedback for the January 2017 issue of Digit



PS. It's after midnight and I'm typing a very long 'personal' mail to you guys when I have over 300 unread high priority emails that I need to answer in my work inbox. Perhaps this is enough proof to convince you how much you guys meant to me and how much I hope that you guys improve and take your place at that top again – as the leader of technology updates provider.

–Asbok Kumar G

📌 Thanks for writing in to us and expressing your opinion in such a frank manner. We appreciate you dedicating precious time to write to us.

We apologise for the drop in quality of content on digit.in and can only assure you that we will fix all issues around quality very soon. We are aware of the need to drastically improve our reviews and testing methodologies. All our test processes are under a complete overhaul and you will soon see the change reflect in our reviews. We are also embarking on a design overhaul along with new sections that will specifically appeal to our magazine readers. So, hang on and I assure you a new digit.in that will come very close to your expectations of being the leader in technology updates.

–Soham

✉ Happy New Year to everyone at Digit. In the Jan issue, I read the interview with OnePlus' CEO written by Prasad.

While reading the text I felt as if Arnab Goswami was taking that interview. Prasad kept asking Pete Lau, why have the 3T when they already launched the OnePlus 3 six months ago. I liked his persistence and that made me write this email to you today. Keep it up Prasad! Suggestions:

There should be a summary for all long articles in bold somewhere at the end or at the start of the article itself.

On page 11 a reader (Sanyam Maan) asked for sexy posters which guys would love to put on their walls. After reading that I was very anxious to read your answer. Siddharth said it well: Are you saying our video game posters are not sexy enough? LOL.

Page 1: Hello 2017. I think Siddharth, technology will work more towards payments. Maybe wireless payments will soon be mainstream in India. I have already heard of some devices through which you can make payments via sound.

Every article should have a jargon buster. It's too old fashioned to give recommendations only for mainstream devices. I think it's time you start covering VR headsets / Smart TV / Tablets.



Solar-powered camera

Tikee, which comes in two variants, Tikee and Tikee Pro is a solar-powered camera for timelapse photography. <http://dgit.in/TikeePro>



Alexa on Android

The Huawei Mate 9 will be the first Android smartphone to come with Amazon's Alexa assistant pre-loaded. <http://dgit.in/Alexaphone>

Inbox

Your Top 3 should cover mid range as well. For other price ranges you can always give a link to digit.in.

Also, could you add a device geeks can buy on a budget every month?

–Gaurav Khurana

☑ Nice suggestions Gaurav. We'll incorporate some of them in the next edition. Though I doubt we'll be doing web-style summaries for our long form articles. But who knows, ever-changing reading habits might require us to revamp our presentation too.

–Siddharth

☑ I eagerly await the magazine supplement aptly titled "The Small Book of Big Thoughts". Hats off to the people behind it. I just finished the Dec one on Natural Selection and started the Jan edition, Time. Natural selection was well researched and awesomely written.

I have two questions: Is it possible to buy these small books as ebooks or hardcopy as a bunch? Further, can I write on a topic to Digit for the same?

–Hitbu Anand

☑ Thank you for your feedback. As a buyer of the December 2016 issue you automatically get access to the PDF archives which include the *dmystify* books. You can buy the *dmystify* books that have been made available as e-mag-

azines using our app that's available on the App Store (<http://dgit.in/DGTIOS>) and Play Store (<http://dgit.in/DGTDroid>).

–Robert

☑ First of all, I am a huge fan, and Digit is awesome. I never had any complaints with it. Every edition of Digit is great in itself. Some suggestions:

Please cover the topic of smartphone theft apps and other precautions.

My friend is preparing for JEE exams but he wants to become a white hat, can you give some tips?

Please cover the topic of Quantum Computing in *dmystify*.

–Vaishnav Sharma

☑ We keep covering both ethical hacking and anti-theft apps quite regularly. The latter have sort of become redundant because both iOS and Android do a fairly good job of locating your phone as a default function now. We'll consider Quantum Computing for a future edition (once enough concrete progress is made in that space of course)

–Siddharth

☑ I've written this mail right after receiving the bundles of my Oct-Nov-Dec issues. The issues are perfect in every way except one point. The Skoar posters are so cool but most of the time they reach me all torn up. So is there any way

of improving the quality of the posters?

–Dipankar Borah

☑ We'll try packing them differently Dipankar. Rest assured.

–Siddharth

☑ I have read many magazines before but what makes Digit stand out is the use of humour. I think that's the only thing that kept me reading without yawning. The concept of *dmystify* is one other reason that makes it wonderful and I hope you keep this little slugger in continuation. I do have some suggestions:

How about a *FastTrack* on the latest version of AutoCAD? You see, I am doing my engineering in Civil and would very much appreciate a handy guide on AutoCAD or any other similar software.

The paper quality of poster / calendar could be better because I have received my December issue Calendar in two pieces (broke my heart). Other than that, no issues whatsoever. This mag is a legend or on its way to become one.

Arigato :)

–Abhishek Solanki

☑ Thanks for the good vibes Abhishek. AutoCAD is a great idea. Also, I'll ask the circulation guys to replace your calendar. Just hoping the December issue isn't sold out already.

–Siddharth

LETTER OF THE MONTH

☑ This is just to express my gratitude for giving me an excellent source of information and inspiration in the form of your tiny-in-shape, yet titanic in its impact magazine – *dmystify*. I am overwhelmed by the content and composition of this little booklet. The team, the author who is stitching together the pieces of information into such a beautiful story is a great techno-philosopher, who deserves a hearty salute from me and from thousand other readers, I am sure. Many a times I see an adorable amalgamation of philosophy and technology in all of your articles. And of course, quite frequently in *dmystify* and the Editorial on the Static Page of the main Digit magazine (by Siddharth Parwatay). Though I have been feeling this way for a long time, this letter of mine got impetus from the recent subject of Natural selection covered in the December *dmystify*. Though I had read about the topic in my school/college curric-



ulum, I had never seen the subject from this perspective ever before as it was presented in *dmystify*. The complex theories are made so lucid that they just percolate down to the farthest brain cells without any visible resistance. I salute to your team and especially the authors and I wish that all of you continue to beam the readers with packets of high powered radiation (knowledge) in the most gentle way possible.

P.S I could go on the same way about *101 Tech Lies Busted* as well but I'm consciously desisting to save your space, time and energy.

–Tanmaya Bebera

☑ Wow! Thank you so much Tanmaya. You'll be surprised to know that the "team" behind *dmystify* is none other than one-man-army Robert. And he is indeed a great techno-philosopher, as you put it.

–Siddharth

> GREED

For those who just want more than should be humanly allowed, we have enough to satisfy your hunger...

THIS MONTH: Lamborghini Aventador S, Audi Layer, Royal Oak Perpetual Calendar, Bentley Continental Supersports and more ...

> TEMPTATION

If you're wondering what to do with yourself or how to spend some time getting cultured, this section is for you...

THIS MONTH: Sherlock Season 4, Hand Cannot Erase music album, and upcoming stuff to watch out for in February 2017 ...

DESIRE > SHOWCASE



Razer Project Ariana

Razer loves dishing out gaming concepts and Project Ariana is yet another attempt to push boundaries. It aims at creating an immersive gaming experience without the need for Virtual Reality headsets. While Ariana can be used as a regular 4k projector, its true purpose is to take your game beyond the confines of your itty-bitty monitor. It's like ambient lighting taken to the next level. Will that really make gaming more immersive? We'll have to wait to find out.

Razer Project Valerie



Razer is a veteran when it comes to anything gaming, and they're well known for their gaming peripherals. So at every CES we expect them to show up with something cool and innovative, and of course they didn't disappoint this year either. Their latest laptop is a thick and bulky prototype, unlike their current slim and minimalistic Edge lineup. But the reason for that 1.5-inch thickness is the fact that

Project Valerie comes with three screens. That's right, there's three 17-inch screens packed into this laptop, which according to Razer is the "first portable laptop with three built-in monitors." And we're inclined to agree with them. The two additional screens pop-out from either side of the primary display when you open the laptop, you don't need to do anything. It of course, comes with a GTX 1080 and

Nvidia's G-Sync technology. This is still a concept however, so don't expect this in markets anytime soon, but it's definitely something to keep an eye out for. Valerie was impressive enough that two of them actually got stolen from their booth at CES! Fortunately for Razer, they were later found for sale in China for a whopping \$21,700. That's almost ₹15 lacs if you're wondering.

Innex Super Retro Boy



While it may look like the

Nintendo Gameboy this device comes with a backlit LCD and can play Gameboy, Gameboy Color and Gameboy Advance cartridges.

Lenovo Smart Assistant



Lenovo unveiled its new smart

home device which uses Alexa to fulfil your commands such as creating to-do lists, reminders, playing music, turning off lights, and more.

DataTraveler GT



The Kingston DataTraveler Ultimate GT can hold up to 2TB

of data. The flash drive itself is held inside a zinc-alloy metal casing. It is, as of now, the world's highest capacity flash drive. Price: \$1200.

HTC Vive Tracker



HTC announced a new accessory for the HTC Vive – the HTC Vive

Tracker. At only about 10 cm in width, this accessory can be attached to pretty much any object to turn it into a VR controller.



Cerevo Lumigent Smart Desk Lamp

The Lumigent Smart Desk Lamp is more than just a lamp. It can transform, take pictures and comes with speech recognition. All you need to do to activate it is say "Hi Lumi." The lamp is capable of automatically adjusting brightness levels, lighting angles and more. Owners can preset angles as they see fit and instruct the lamp to change position as and when needed. When it isn't in use it can be nicely folded up to save space. The Lumigent Smart Lamp can also connect to your desktop via USB or WiFi, allowing its 8MP camera to be used as a webcam as well. Pictures or videos you capture can be saved on a microSD or directly on the cloud via WiFi. It's expected to release in autumn this year, costing between \$400 to \$700.

UVify Draco HD

Drone racing is a thing, but it's not something just anyone with any drone can get into. Most consumer drones out there are designed to make flying them as easy and comfy as possible and are designed mostly for capturing footage. They're not designed for speed and agility, making them useless for drone racing. Racing drones are a whole other level, where you need to be mindful about every component and ensure that your drone is optimized else you're going to crash and burn. Until now anyway. Uvify's Draco is a drone designed for speed and also to be as user-friendly as possible. This ready-to-fly



racer can hit speeds of 70 MPH and can even get close to a 100 when flying in a straight line. It's got a full 40-channel First Person View so you can race as the drone. If you happen to crash the Draco, most of its parts are easily replaceable and can be easily clipped back on with a replacement, the frame is made out of carbon-fiber, so it's pretty tough. The Uvify Draco is expected to release this summer for \$499.

PowerVision PowerRay

The PowerRay drone aims to make fishing a fast-paced activity, as compared to its slow and relaxed state right now. The PowerVision PowerRay uses sonar to locate fish within 30 metres and sends alerts when it detects anything. If that wasn't enough, it sends a live HD feed directly to your Android or iOS device, so you can get visual confirmation of whatever it was that alerted the PowerRay. But that's not all! The drone can draw fish closer with its LED lure and even record the moment of the catch in 4K glory. If fishing doesn't interest you, don't worry, strap on a VR headset and explore lakes and ponds in first-person. The PowerVision PowerRay can be controlled from up to 70 meters away. The expected release and price of the PowerRay hasn't been declared yet.



Misfit Vapor

Misfit has gone all-out on its new Misfit Vapor after dabbling with smart-wearables over the past few years. Like its predecessors, the 44mm Vapor is built with a focus on minimalism and attempts to avoid the 'big and bulky' trend entirely. It features a full touch display, with most of the menu interactions taking place around the edge of the display. In addition to your usual smartwatch features, the Misfit Vapor comes with a heart rate monitor, accelerometer, an altimeter, GPS, 4GB of storage and two days of battery life on a single charge. You can connect wirelessly to your headphones via Bluetooth for your music-listening needs and for calls. The Misfit Vapor is expected to go on sale by the end of this year for just \$199.

SPECIFICATIONS

Display: 1.39-inch AMOLED display; 326 ppi | **Storage:** 4GB | **Water Resistant** up to 50 metres | **Battery life:** Up to 48 hours on a single charge



Dell XPS 13 2-in-1

The Dell XPS 13 is one of Dell's most popular notebooks. Come 2017, Dell has added some flexibility to the XPS 13 with the new Dell XPS 13 2-in-1, which basically takes everything good about the Dell XPS 13 and turns it into a convertible design. At a glance there are very few cosmetic differences between the original XPS 13 and new XPS 13 2-in-1. They both share the same slim look, and at just 1.2 kg the new model is light and portable. The XPS 13 2-in-1 will come with a fingerprint sensor on the keyboard deck, which they will be incorporating into the original XPS 13 as well.

SPECIFICATIONS

Processor: Kaby Lake i5 or i7 | **Display:** 13.3-inch 1920x1080 or 3200x1800 touchscreen | **RAM:** 16GB | **RAM Storage:** 1TB | **Battery:** 46Whr (15 hours on single charge)

Price: \$999

Mohu AirWave

The Mohu AirWave is a wireless device that allows you to stream local TV as well as free streaming channels on your streaming devices, all without the hassle of cords and cables. This OTA and OTT device won't have any subscription fee, you just need to buy the device to begin using the free services. The AirWave, which will be launching late in spring this year, will be compatible with Amazon Fire TV and Stick, Apple TV, Chromecast, Roku, iOS, Android and works independently with the web too. The Mohu AirWave can be setup anywhere with an available internet connection and it connects wirelessly to the Mohu TV app which has live broadcast and streaming content.



LG OLED W-Series

How thin is too thin? Well, some are saying that LG's newest OLED W-Series 4k TVs might just be too thin. So thin, in fact, that they can't even be mounted on a wall bracket. Honestly, we don't care, the TVs look absolutely gorgeous. So what if you can't mount them? They're so thin and light you could probably just stick them directly to the wall. Since the TVs are as thin as they are, there's no room for any other components and this also makes them ridiculously light, with the larger 77-inch model weighing in at just roughly 12kgs! Lack of any components means no speakers as well, which come separately. The TVs will be accompanied by a soundbar which will support advanced Dolby Atmos surround sound and have two rising/retracting speakers on either corner. You can, of course, ignore these if you have a better sound system of your own.



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Kuri

Kuri is California-based startup Mayfield Robotics' first domestic robot. Now there's quite a few domestic robots out in the market today but what makes Kuri so special is that it responds to the user with facial expressions, head movements



and sounds; it's a robot with a personality. Kuri stands 50cm tall and weighs in at six kgs. It's got a round head resting on a stout body designed to look like it has arms. On the head are large "eyes" that open and close. Kuri has the ability to understand context and its surroundings; it can even recognise people. Its equipped with a camera and four microphones for voice commands, dual speakers for playback, and WiFi connectivity. Kuri can map out its surroundings thanks to its sensors so that it

doesn't run into obstacles or fall down stairs. But despite all that tech it's packing, the most endearing thing about the Kuri is the way it responds to people. Mayfield is hoping to start shipping Kuri by the end of this year at \$699.

Lego Boost

Unlike the Lego sets you're normally used to, Lego Boost can make your Lego creations come to life. The Lego Boost kit consists of various modules to make your Lego experience heaps more enjoyable. There's wheel modules to get your car racing, entrance modules to raise your castle gates and walking modules to move your Lego bots around. There's a lot of other sensors as well, allowing you to light up your creations and make them detect motion or make noises among other things. Lego Boost is accompanied by an app which uses a drag-and-drop coding language to make it easy for kids to program their creations themselves. This way, kids learn about the basics of programming logic while they fiddle around with the behaviour code blocks. The \$160 Lego Boost has successfully managed to combine learning with playtime.



Asus ZenFone AR

The Asus ZenFone AR is only the second phone ever to make use of Google's Tango technology, the first being the Lenovo Phab2 Pro. Tango is Google's Augmented Reality platform which adds a layer of information on your physical surroundings in 3D by making use of the device's cameras. The Asus ZenFone AR however, is Daydream ready as well, which is Google's Virtual Reality, meaning the ZenFone AR supports both AR and VR, making it the first flagship mobile phone to do so.



SPECIFICATIONS

Project Tango AR and Daydream VR ready

Display: 5.7-inch Super AMOLED display; 515ppi | **Snapdragon 821 chipset:** Quad-Core (2x2.35 GHz Kryo & 2x1.6GHz Kryo) CPU, Adreno 530 GPU | **RAM:** 4GB or 8GB | **Storage:** 32GB, 64GB, 128GB, or 256GB with the option to expand via microSD | **Camera:** 23MP main with 2160p video capture; 8MP selfie camera | **Battery:** 3300 mAh removable battery; QuickCharge 3.0 | **OS:** Android 7.0 Nougat



Motiv Ring

The Motiv Activity Tracker Ring offers 24/7 monitoring without the hassle or need for wearing a smartwatch or smartband. Wearing a watch or band all the time can definitely feel a bit intrusive but Motiv doesn't face this problem. This titanium ring comes with most of the health monitoring features you'd expect from its watch or band counterparts. Heart sensors, sleep monitoring, 3-axis accelerometer, Bluetooth connectivity, and it's waterproof as well. The ring itself comes in either Slate Grey or Rose Gold. Of course since it's a ring and lacks a display, the Motiv relays info to an app. All details such as your heart rate, foot step counter, calories burned, etc are displayed on the app. The Motiv is expected to release this spring and can be pre-ordered for \$199 right now.



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DESIRE

TAKE MY MONEY!

Here is where we keep an eye on crowd funded projects that will make you go 'Shut up and take my money!'



Steadicam Volt

The Volt is designed to enable smartphone users to capture high quality video with ease. There's a lot of smartphone stabilizers out there, so what makes Steadicam Volt stand out? The Volt is lightweight and is designed in such a way that it can be folded for easy storage. It's got an app for both iOS and Android for fine tuning. It runs on rechargeable lithium ion batteries, and if they happen to deplete, you can still use the Volt in manual mode. Steadicam has been around for a long time, so you can be sure that the Volt will definitely enhance your capture experience. You can back the Volt and get one of your own on kickstarter for \$139 (₹9,500 approx).

Fret Zeppelin

Fret Zeppelin has been created with the sole purpose of making the guitar learning experience less tedious. It makes use of an LED lights and a companion app to make to make you strumming like a pro in not time. These lights are easy to stick onto your fretboard and the Fret Zeppelin app lets you customize various features such as the colours of the lights, the tempo, song patterns and even tuning among other things. It helps you play through entire songs by detecting when you play the right sound and lighting up the next chord you need to play. The app is coming for both iOS and Android devices and will support both phone and tablet devices. Fret Zeppelin will work with any guitar; you choose the guitar you're most comfortable with. You only need to add the Fret Zeppelin LED strip to it and you're good to go. Those of you who have that enthusiastically bought guitar which is now gathering dust in the corner, this is your chance to get cracking. You can grab the Fret Zeppelin for \$199 (₹13,500) on kickstarter.



eRideLite

The eRideLite is an electric bike which doubles as a geared cycle, so you have the ease of an electric vehicle with the fitness aspect of a geared cycle. In electric mode, the eRideLite can reach speeds of up to 25 km/h. It runs on a 250W electric motor with a range of 50 km on the eRideLite 50 model and 90 km on the eRideLite 90 model on a single charge. e-RideLite is capable of going 0-20 km/h in just 10 seconds. While in pedal mode, the eRideLite is equipped with 6-speed Shimano gears, so you can adjust it according to the kind of workout you want. Another cool thing to note is R2H Motors has designed this bike specifically with Indian roads in mind, and you can support them yourself on *Fuel A Dream*, an India-based crowdfunding site. If you're looking to purchase one yourself, you can order one for yourself on *Fuel A Dream* for as low as ₹25,900.



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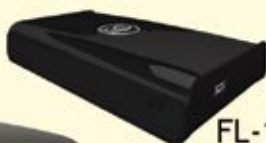
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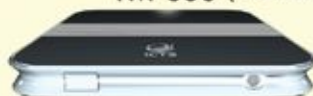
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Smart Protektor

We've all come across cheap and low quality charging cables. These cables are damaging to your devices and are quite unreliable. Constant charging can shorten your device's battery life as well. This is where Smart Protektor comes in. Smart Protektor is an all-in-one charging and data transfer cable. It's also got an LED display. That's right, there's an LED display on this cable. With Smart Protektor you can Fast charge, sync data, test capacity and protect your device from power irregularities. It comes with Micro USB and Lightning options and a soft, flat, tangle-free cable. The LED display on the cable lets you monitor and chose



between different options. With the press of a button you can test the current or voltage. It alerts you when there are power irregularities and automatically stops when the device is fully charged. Look for the Smart Protektor on kickstarter.



SENTRY

One of the main reasons people cite to avoid investing in a gaming PC (other than the price of course) is that they're too bulky and take up a lot of space, and in most cases, they're right. Gaming rigs can be quite bulky but that's not always the case. However, SENTRY has taken it a step further, and has created a PC case that's the size of a console. This gaming chassis has a volume of less than 7 litres and is designed to be able to house powerful components. It has been designed to be the ideal size for an appliance that would sit in front of a TV. Now you may not be able to put just any components into the SENTRY, but most mid range components should be fine. As a bonus it doubles as a headphone hanger as well, and its size allows for it to be far more mobile than your average PC. Interested? Find SENTRY on indiegogo.



MAGQI

We spend a lot of time charging our devices these days, so mishaps with our cables and plugs are fairly common. Be it your car, your home, or your desktop, nobody wants to deal with the hassle of messy cables and constantly having to replace them. This is where MAGQI comes in. The MAGQI Magnetic Wireless Desk Charger can be used at home or in the office or even in your car. It stands in such a way that you can continue to use your phone – hands free – while it's charging. MAGQI also doubles as a phone stand for your viewing needs. When using the MAGQI in your car, it doubles as a handy car mount for your phone. Go check the MAGQI out on indiegogo to learn more. Or better yet, Blip this page using the Blippar App to check out all of these crowdfunded campaigns.



MyDrone

MyDrone is a compact multi-functional drone capable of capturing videos in 4K. MyDrone has been designed to be your ultimate aerial action buddy. According to folks who made the thing, it can't be stopped by anything "except tornadoes, hail and lightning." Well, to be fair we don't think any drone would be able to manage in those conditions. MyDrone comes with a sport watch control module and a separate follow module. Once you've set the follow module on your target, the drone functions autonomously. So you don't need any piloting skills to get great footage. The accompanying phone app lets you control all the features of the drone and at the same time makes the drone remote control ready. You can find MyDrone on kickstarter if you want to back them, or spend \$699 (₹47,500 approx) if you're looking to get one of your own.

GREED

AUTO

Your one stop destination for a monthly dose of all your automobile launches and desires.

Bentley Continental Supersports

It seems like every year Bentley comes out with a new car, it takes over its predecessor's title of 'Fastest Bentley ever'. This time, it's the Bentley Continental Supersports, which is being powered by a revamped version of the 6.0 litre W12 engine which churns out 700 bhp at 750 lb/ft of torque. But that's not all that contributes to the Supersports' output. Higher capacity turbochargers and a revised charge-air cooling system help create more power and add more oomph to the boost. Of course, all that torque will need some smooth handling, which Bentley provides with a specially calibrated torque

vectoring system that individually brakes front and rear wheels when accelerating out of corners. The suspension is lower than compared to its predecessors but it gives the ride a more agile feel. Bentley claims this luxury wagon can hit 62 mph (roughly 100 km/h) in just 33.4 seconds, making it the fastest accelerating Bentley to date. And at a top speed of 209 mph (336 km/h approx), it also takes the title for world's fastest four-seat car. In terms of design they've ditched traditional chrome for black



with this one: from the carbon fibre splitter and diffuser in the front and rear bumpers to the dark tinted headlamps and door handles. There's a convertible version as well, which while only slightly slower than its coupe counterpart still holds the 'fastest four-seat convertible in the world title.' The Bentley Continental Supersports Coupe will set you back by \$296,025 (₹2,01,81,000 approx) while the convertible will cost you \$325,325 (₹2,21,78,700 approx).



2017 Lamborghini Aventador S

After five long years, Lamborghini's flagship is finally getting an update. The new 2017 Lamborghini Aventador S will be packing a 6.5-litre V12, now producing 740 bhp, 40 more than the current. The redline has been upped to 8500 rpm from 8350, the exhaust has been made lighter and fans of the car will love the flooring and pedal tunnels. The new Aventador S can go from 0 - 62 mph (100 km h) in 2.9 seconds and can hit a top speed of 217 mph (349 km h). Of course, slight changes have been made to the suspension and aerodynamics to cater to the upgrades but the most important addition by far would be the addition of Four Wheel Drive. The addition of a FWD will be a first for a production car by Lamborghini. The inclusion of FWD will help reduce turning radius and improve the overall stability of the car. The 2017 Aventador S will start at \$421,350 (₹2,87,25,000 approx) and is expected to start shipping this spring.

GREED

DROOL MAAL

Get your drool on and behold some of the fanciest, ostentatious and drop dead gorgeous things money can buy. Droolworthy?

24K Gold Bose QuietComfort 35

The wireless Bose QC35 boasts built-in Bluetooth functionality and active noise cancellation for unblemished sound. Bose does ANC pretty well and the QC 35 by itself is a decent pair of headphones on its own, but ColorWare CEO Justin Cisewski thought maybe it would look better in gold. All we can say is it definitely brings the bling! According to Justin, 24K gold is always in high demand, so he thought, why not offer it with their best selling headphones. Ingenious. And it's not as simple as just a simple gold coating, the process involves disassembly, cleaning, masking, painting, and inspection before being buffed and



reassembled. The product is checked yet again after the reassembly stage to ensure you're getting the quality you expect. The regular Bose QC35 would set you back by \$350 (₹29,363 approx), but the 24K model will set you back by \$749 (₹51,000 approx). Apparently, they're quite popular and there's only 50, so if you're interested, you can buy yourself a pair on the company's site before they run out of stock.



Audi Layer

It's not unheard of for an automobile maker to venture into making something other than, you know, automobiles. To that end, German car maker Audi recently collaborated with Jarim Koo – a renowned industrial and product designer – to create the Audi Layer. The Audi Layer is an exquisite looking, multipurpose input device for your PC. There's 4-in-1 functionality packed into its sleek design. Its flat surface can be used as a trackpad, and when the accompanying stylus is activated, the trackpad doubles as a tablet. If touch-based surfaces aren't your thing, the Audi Layer also comes with a keyboard that slides out along with the trackpad. However, the most noticeable thing about the Audi Layer would be the mouse it houses, proudly sporting an emblazoned Audi logo on it. Audi hasn't revealed the price for the Layer, but you can be sure that this is one gadget you'd want to have on display.

Don't confine yourself
to the radius of your Router



AC1200 Wi-Fi Range Extender

RE305



New Launch



300Mbps+
867Mbps



Intelligent Signal
Indicator Light



Access
Point Mode



Tether
App

Vertu Signature Touch Teal Fluted edition

When it comes to luxury smartphones, Vertu is a well known name. The new Vertu Signature Touch draws inspiration from the Art Deco period with matt Titanium fluting, polished grade 5 Titanium sides and a black ceramic pillow. All of the above means that this phone is as much of a pleasure on the eyes as it is to use. The 'Teal' in the name comes from the Teal Blue leather that the phone is wrapped in, which comes from a specialist Italian tannery. The touch screen has been made from a single 130 carat sapphire crystal, for both a crystal clear high-def display, and a virtually scratch proof one. On the inside we have a Qualcomm Snapdragon 810 octa-core processor and for the OS it uses the Android Lollipop 5.1 64-bit OS. It's accompanied by ringtones and alert tones composed by the renowned London Symphony Orchestra. As for the price, you can buy it from Vertu's website for a whopping €10,400 (£7,54,000 approx).



Royal Oak Perpetual Calendar

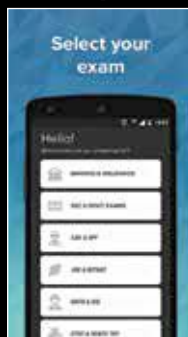
The all-black Royal Oak Perpetual Calendar is the latest from luxury swiss watchmaker Audemars Piguet. The Royal Oak Perpetual Calendar comes in all-black; that includes the bracelet as well, which is a matte black brushed ceramic bracelet. The case is also ceramic, and is supposedly scratch-proof. It's also resistant to high temperatures and thermal

shock. It doesn't age either. In classic Audemars Piguet style you'll find the "Grande Tapisserie" dial which features a gorgeous moonphase. The workmanship and attention to detail on this watch is what steal the show. Over 600 hours of research went into the development of this beauty, piece taking thirty hours of machining, polishing and careful hand-finishing to assemble. If you want to own one however, it'll set you back by \$85,000 (₹57,00,000).



APP WATCH

Gradeup

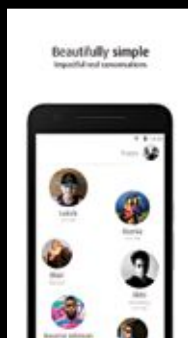


If you're looking for a complete in-depth assistant to fully prepare you for a competitive exam, Gradeup is not the app you're looking for. However, if what you're seeking is a learning companion that supplements your existing plan for whatever competitive exam you are preparing for, Gradeup is just the right tool for you as it comes with byte sized content for exam aspirants. The aim of the developers

is to service the highly underserved Indian examination market and according to the team, they will have something for international exams too (like for GRE and TOEFL) by mid-2017.

Play Store: <http://dgit.in/GrdupPS>

tlkn



Some would say that the primary reason for phones to exist is to make calls - silly right? However, it is true that the calling interface hasn't changed for years - even though the phone itself has undergone a total overhaul. Tlkn is an app that plans to change all of that by completely re-imagining what making a call means to you. Starting off with a fresh dialer that shows your frequent contacts as bubbles, it also

allows you to put up a brief status about your availability. Oh, and did we mention that calling on the app is free to another tlkn user? The app has a focus on transparency - you can also place calls to any number in the world, with the app showing you the associated calling rate.

Play Store: http://dgit.in/tlkn_PS

App Store: http://dgit.in/tlkn_AS

Solid Explorer



While we mostly cover new releases here every month, sometimes it pays to go back to the essentials. Now that ES File Explorer, a popular choice for a storage manager on Android, has become cluttered and pushy regarding additional services, it's a good time to turn to Solid Explorer. The app features material design and tabbed management of local and cloud storage. You can freely modify themes, icon sets and color schemes. It supports almost all cloud services like Dropbox, Google Drive, and more. By the way, you can also create and extract archive formats like ZIP, RAR, and 7-Zip. It also organises media files and can cast your content. Phew!

Play Store: <http://dgit.in/SolidPS>

App Store: <http://dgit.in/SolidAS>

GREED

EXAMINED

Some very cool products come to the Digit Test Centre which don't really fit into the standard product categories that we review in the Bazaar section. We write about them here mostly to make you turn green with envy.



Tango Wellness Motivator

This fitness band, made by Finnish health tech company Health Care Success (HCS), sets itself apart on some distinct features. To begin with, the device does not have a detachable middle capsule like most budget fitness bands do these days. Priced at ₹4,990 on Amazon, the device glaringly lacks some of the features that rival bands sport at a much lower price point - like heart rate sensing and smart unlock for your smartphone which are found on the much more economically priced Mi Band. But what the device lacks in price, it somewhat makes up in accuracy. Calling it the world's most accurate fitness band, as claimed by HCS, would be a long

shot but it is more accurate than most bands at and below the popular ₹2,000 price range.

The Tango is available in six colours and sports a sleeker band than usual, which does make it look a bit childish. But the band itself is quite comfortable and does not chafe the skin at all, even after continuous use for periods greater than 24 hours. The claimed battery life is 2-3 weeks and it lives up to it for the most part. Of course if you tap it more, it dies sooner! The app could use a lot of changes but does serve your most basic needs. Overall, the Tango is a good choice if you are a stickler for more accurate results at the cost of a heart rate sensor, that is available on bands like the Mi Band 2 at below ₹2,000.

Targus Docking Station

In a time where ultra-thin notebooks are all the craze and most laptops no longer come with proprietary docking stations, the Targus Universal Docking Station should be everything you'll ever need. If you happen to have recently bought an ultra-thin notebook or a rather small and compact laptop, you may have noticed that the keys and trackpad can be quite congested, especially for those of us with big hands. Now this can easily be solved by plugging in a mouse and keyboard but most of the ultra-thin and compact laptop variants these days only come with two USB slots. So you've no room for any-

thing else you might want to connect such as say a flash drive, portable hard disk etc. Targus' docking station can help you here, for one USB 3.0 port, you're getting six more ports, two of which are 3.0 ports. We like that trade-off. But that's not all, the Targus Universal



Dock also has two display ports, one DVI, and an HDMI port. It's accompanied by a DVI to VGA adapter and an HDMI to DVI adapter as well. Other than that, you can charge your laptop via the Targus Docking Station. The station houses eight different sized power tips, so there should be a tip that fits your laptop. There will be a few exceptions here and there though. The display ports on the dock do result in a bit of visible lag, albeit not unbearable and it's fine for daily regular usage, but for media and gaming purposes just stick to using the laptop's own port. Price: ₹17,000.

Mod Mic 5.0

Having tested the ModMic 4.0 in both its omni-directional and uni-directional variants, we realised the difference in quality and the convenience it brings along. With the 5.0 edition, the most important update over the ModMic 4.0 is the convergence of the omni-directional and uni-directional mic into a single module. Now, you'll find both the type of mics built into the small boom pole that can be toggled with the switch at the end. Another refreshing change, or rather a complete overhaul, is the modularity introduced in the cabling. Starting off with the mute module, now you can attach a module in between the cables using standard 3.5mm jacks. This time, AntLion has taken the path of going with cable options of 1m and 2m in length, both included in the package. The other miscellaneous changes include better quality cables, a fabric-coated hard shell carry pouch, glossier mic boom and more powerful magnets.

A better cable management solution offered this time is the 2m long cable wrap or sleeve which can be used to cover up both the cables. The internal circuitry and components seem to be the same in the ModMic 5.0 compared to the ModMic 4.0. The inclusion of both the modes in a single mic module now makes it easier to switch between them on the fly depending on your surrounding and use-case. For beginners, the ModMic 5.0 can be the perfect solution since it enables good quality voiceovers in the omni-directional mode.

If you're on a strict budget and are completely sure that you need either the omni-directional variant or the uni-directional



along with having an in-line mute switch, you should go for the ModMic 4.0. Going for the ModMic 5.0 is more of a luxury.

SPECIFICATIONS

Sensitivity: -38 ± 3 dB (Uni-directional), -26 ± 3 dB (Omni-directional) | **Response:** 100 Hz–10 kHz (Uni-directional), 30 Hz–17.5 kHz (Omni-directional) | **SNR:** >50+ dB (Uni-directional), 58+ dB (Omni-directional) | **Impedance:** 2.2 K Ω | **Operating Voltage:** 1 to 10V | **Max input SPL:** 110 dB



Crusader Air Purifier xj-4001B

The Crusader XJ-4001B follows pretty much the sleek design language that most air purifiers of today are adopting. It does have a display that shows amount of particulate matter in real time which is a welcome feature considering that quite a few purifiers leave you no way of knowing how well they are working. This one also covers a large area of 800 sq ft which is quite good for an average house or small office - and combined with the six stage filtration process, it makes for a good home air filtration device.

Beyond the filtration, the device itself comes with quite a few smart features like Smart auto mode which ups the blower speed when it detects more dust. It also comes with Smart Anion and UV mode.

SPECIFICATIONS

Air Flow: 450 M3/hr | **Inbuilt Sensors:** PM 2.5 Digital meter sensor with color indication | **Applicable Area Max.:** Up to 85 M² / 925 Sq. feet / 9250 cubic feet

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TEMPTATION

CRITIQUE

In this section, we put stuff through the grinder and closely examine what comes out; everything except gadgets, because there's more to life than just that

ALBUM REVIEW

Hand. Cannot. Erase | Steven Wilson



Hand Cannot Erase isn't a new album by any measure. Any Steven Wilson fan would be quick to point out that it released almost exactly two years ago in Feb 2015. Why feature it now? Wilson's recent India tour made us revisit this masterpiece. A couple of us from the team

even went for the concert – a mind blowing experience but that account, we'll leave for another time. Coming back to the album, Hand Cannot Erase is a concept album like many of Mr. Wilson's previous works - both solo and collaborations. The theme is urban isolation and the songs have been written from the perspective of a female protagonist. Particularly brilliant are three songs *Ancestral*, *Hand Cannot Erase* (the title track), and *Happy Returns*. Haunting, melancholic and powerful as ever, this isn't an album you'll forget anytime soon.

Rating: ★★★★★

– Siddharth Parwatay

TV REVIEW

Sherlock (Season 4)

And then there were 3



British shows are frustrating for one reason – they follow no fixed schedules. Waiting for the next season of Sherlock isn't that painful since Benedict Cumberbatch is all over Hollywood these days. This season of Sherlock has been ... lacking. It's not just the little deduction sequences which seem bereft of the same charm that the previous seasons had but the fact that the storyline doesn't stand up to those penned by Sir Arthur Conan Doyle takes away from the experience. And this is why we feel the writers had to resort to such a major canon-breaker in this season. Nevertheless, the writers to manage to cook up a fairly interesting story

and the actors do justice to their respective characters.

Like previous seasons, the initial episodes do keep you guessing about the major storyline. It's a virtual peek-a-boo through these episodes and it's only towards the end of the second episode that the jaw-dropping or WTF moment hits you right in the amygdala. However, we feel that the writers should have gone the extra mile with the character development of the antagonist. We're slightly disappointed but we'll let this one pass. However, the end of the season is enticing enough to have us wait with bated breath for the next season. Hope it's better.

Rating: ★★★★★

– Mithun Mohandas



The LEGO Batman Movie

In this easter-egg filled spin-off set in the same universe as The Lego Movie, It sees Batty discover the value of friendship, teamwork, and all that other sappy superhero stuff
Release: February 10



The Legend of Zelda: Breath of the Wild

If there's anything that has the world more hyped than the Nintendo Switch, it's this game. It is without a doubt one of the most anticipated titles of this year.
Release date: March 3



KonoSuba S2

The protagonist finds himself in a fantasy world after his death only to find himself in a dysfunctional party with a goddess, a magician and crusader. Hilarity ensues.
Aired: January 12 - Ongoing.

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- Advent of 4G in India
- Presence of big development centres like Microsoft, Nvidia, UbiSoft, Zynga, Electronic Arts, Disney, Playdom, Sony, Digital Chocolate, etc.

The focus is on creating a talent pool of game developers and bringing cost-competitiveness. The India Gaming Show 2017 will reflect the growing importance of interactive, mobile, and social gaming worldwide and help establish the Gaming industry in India.



2-5 February 2017 | Pragati Maidan, New Delhi, India

www.gamingshow.in | rachna.jindal@cii.in

Geek life

CyanogenMod is dead, but fear not, here are some alternatives for your custom ROM needs

**Meow!**

They aren't feeding me until you complete this survey. Help please.
<http://digit.in/dsurvey17>

They're watching..

Around 100 years ago, someone invaded your privacy to protect you - and they never left



Arnab Mukherjee
arnab@digit.in

It isn't a coincidence that the kind of knowledge a character is known to possess is not entirely obtained in a consensual manner. Surveillance has been around for a long time. It has been used as a method to control the law breakers and the rebels. While early surveillance involved interception of letters and couriers, eavesdropping mechanisms through architectural modifications in buildings and more, what we are going to trace here is the evolution of surveillance since the advent of electronic communication.

Wiretapping

One can trace the origins of audio-visual surveillance back to the days of the telegraph, a technology that boosted communication manifold. It was during the days of the Civil War in the United States of America that both sides would tap into the other side's telegraph lines to intercept communications. This was a fairly achievable task due to the lack of security measures as well as the slow speed of communication over the telegraph. But all of that changed with the popularity of the telephone towards the last couple of decades of the 19th century.

All of a sudden, everyone was communicating too fast and words were

being exchanged at a rate too high for manual tracking. At this point, what was needed was an efficient recording device that could let telephone calls be played back for better understanding and confirmation. Numerous attempts were made before there could be a device that found the right balance between speed and accuracy. Thomas Edison's phonograph was an invention that had the intention of recording conversations behind it, but it wasn't really easy to use or sensitive enough to get the job done. Even a few years later, when the Danish inventor Valdemar Poulsen invented the telegraphone, the first magnetic recording device, it failed to achieve sustainable popularity.



New VP for Tesla autopilot

Tesla's new vice president for their autopilot software is Chris Lattner, formerly of Apple and creator of Swift. <http://digit.in/VPtesla>



Malaria diagnosing light

Matibabu is a technology that uses light and magnetism to analyse your blood for signs of malaria infection. <http://digit.in/maibabu>

Origins

While it outdid its predecessor in Edison's invention and was also displayed at the World Fair in Paris in 1900, the American Telegraphone Company, which was supposed to make the telegraphones under license in the US, failed to ever actually manufacture the device for the market and hence it got



A blind stenographer using the dictaphone

very little chance to be popularly used.

It was closer to the first World War that the Dictaphone Corporation released a new device capable of recording from telephone lines. It was quite effective, to the point that AT&T had to ban its use on public lines. Much of the reputation of detectives and spies around that time came from portable recording devices like the Dictaphone or Dictagraph. Around this time, the preventive activities of one William J. Burns, also known as 'America's Sherlock Holmes', with the dictograph were quite influential in convincing the public that, "even the walls had ears". The days of the wiretap wouldn't end anytime soon, but the world was moving towards a more invasive method of surveillance – eavesdropping.

Eavesdropping

The word conjures the image of ears laid on closed doors or under open windows. Post the first World War, the general public had never really recov-

ered from their paranoia and suspicion that a third man was listening to their conversations. Microphones were by then sufficiently small to be concealed effectively among everyday objects. By the time an unfortunate series of events had led the world to another World War, technology was



Spying of this nature is more common in government activities

advanced enough for 'bugging' and 'wearing a wire' to be commonplace fears, and capture systems could play back recorded audio without the need for processing.

By the 1950s, these recording devices would have reached such a level of miniaturisation that they could be concealed on a person, along with the power source and transmitter. Transmitters would, in turn, relay the audio to a nearby receiver where a third party would be listening in on the conversations/audio from the mic. In fact, such devices were being popularly used in television shows and detective work already. A brief idea of the popularity of these devices can be gleaned from the admission of a particular firm to have installed 4000 such devices in the Washington DC area of United States alone.

The peeping tom

While audio surveillance was the only dominant form of surveillance for nearly 50 years, as with everything

in the world of technology, that was to change soon. The size and the bulk associated with cameras over the years had led the general public to believe that cameras couldn't really be concealed. Hence, miniaturisation itself paved the path for cameras to be perfect 'spying devices' for a long time. In fact, even in the first half of the 1900s, there were quite a few models like the Micro 16 and the Petal Camera that were popularly used for concealed photography. The Petal was even one of the smallest cameras ever made, at the size of the American Quarter. Another unique camera that stood the test of time in its own era was the Steineck ABC Wrist Watch Camera which, as you must have guessed by now, looked like a wristwatch and no, it didn't tell the time. And no article about early spy cameras would be complete without mentioning the Minox series of cameras that were a spy staple for over three decades till the 1960s. And mind you, getting any one of these at their launch would set you back by almost a week's pay.

What the steam engine did to the manufacturing sector, video surveillance did to the surveillance industry. As early as 1965, there were supposed reports of surveillance cameras being used in the United States. Pretty soon, it was evident that the police were using surveillance cameras in places of interest to monitor public activity and look for signs of trouble. The next big push was when video cassette recorders hit the market. The seventies



Closed Circuit TV (CCTV) cameras have grown to be ubiquitous



AI Time Tracker

"Time" is a new AI-powered time tracking application that can help you stop procrastinating. Continue reading: <http://dgit.in/TimeAIApp>



Peeqo the GIF Robot

Peeqo is a robot that you can interact with and will mostly respond to you using smart GIFs. <http://dgit.in/PeeqoGIF>

saw a huge rise in the implementation of surveillance cameras around the world in law enforcement to traffic control and even legal proceedings in matters that involved adultery and parental negligence.

Digitisation improved the quality of video surveillance vastly. What earlier used to comprise of grainy, hard to interpret images was now clear, easy to identify footage. Police and investigative work especially benefited from the digital video surveillance implemented across cities, that even allowed the alteration of images for their purposes. Another advantage that digital video offered in the 1990s was after the advent of digital multiplexing that allowed the usage of multiple cameras at the same time in the same surveillance system. The one big change that happened over the years, especially in the 90s, was that people were no longer apprehensive of an unknown person watching over them in retail stores and public places. In fact, it made them feel safer. Needless to say, since the arrival of the internet, video surveillance has been mostly network based and the quality has only been limited by the camera itself.

The big brother sees all

Take any dystopian future in fiction from the recent past and you'll find watchtowers with searchlights, laser grids and electrified fences everywhere. While it's great that those dystopias were wrong, we've submitted ourselves to a totalitarianism of a different kind. Instead of being watched, we are voluntarily checking in with the powers that be. Conspicuous synchronization through swipe cards and IDs, automatic tolls and kiosks now dot our landscape with hundreds of points where we, within our senses, willingly give away our location and much more, often in exchange for goods and services.

Don't get us wrong. When viewed separately, you have every right to believe that each of those points and other digital interactions are innocuous. But, with each new camera,

MADE IN INDIA

If you thought that our own country wasn't really involved in surveillance – maybe because of technical backwardness in many government ventures – get ready to be surprised once again. Under the Indian Telegraph Act of 1885 (yeah, 132 years old), these are the mass surveillance programs operating in India –

- **Central Monitoring System Project (CMS)** - Recently labelled as one of the top 3 worst online spies
- **DRDO Netra** - Reportedly, the system can detect selective words like "bomb", "blast", "attack" or "kill" within seconds from emails, instant messages, status updates and tweets
- **Lawful Intercept And Monitoring Project (LIM)** - Used by the Indian Government to intercept records of voice, SMSs, GPRS data, details of a subscriber's application and recharge history and call detail record (CDR) and monitor Internet traffic, emails, web-browsing, Skype and any other Internet activity of Indian users
- **National Cyber Coordination Centre (NCCC)** - A proposed cyber security and e-surveillance project in India that could operate with limitless authority and without any legal framework.
- **Telecom Enforcement Resource and Monitoring Project (TERM)** - This is the vigilance and monitoring wing of the Department of Telecommunications.

barcode, database, registration and ID, a node is added in concert with a larger overall move towards total surveillance. And at the centre of it all lies the modern digital brain - a computer.


Nobody is claiming that every one of us is totally unaware of the eyes on our backs. But in 2013, Edward Snowden, a contractual worker at National Security Agency (NSA) in the US came forward with information that would change the world forever. A cache of documents that Snowden



Edward Snowden has become something of a symbol in the fight against mass surveillance

shared with certain media outlets revealed a global surveillance network that was beyond imagination. From phone calls to emails, location data to cable TV preferences, every single bit of information across several nations around the world was at the Agency's disposal thanks to several international treaties and agreements. And if you were looking at this as just a smear on the US Intelligence network, you would be wrong as even Australia and UK have accepted this as one of the worst blows to their intelligence networks in history.

If you think that there is no way the cameras and microphones in devices around you can be accessed over the internet by a diligent hacker, you couldn't be further away from the truth. Ethical issues aside, this can very well be done by government agencies with a reason behind them. Combine this with drones and minuscule electronics that are becoming harder to detect to the point of being pretty much undetectable, and voilà, you have the perfect cocktail of technology that monitors each and every move, or rather, a lack of it, in our cases anyway.

Well, at least, we're all a part of history now, eh? 

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DJI's latest acquisition

DJI acquired majority stake in Hasselblad, the Swedish camera company and is working on high-end camera drones. <http://digit.in/DJIstake>



Robotic "soft exoskeleton"

Boston-based company Rewalk Robotics is working on a "soft exoskeleton" to help rehabilitate stroke patients. <http://digit.in/RewalkBot>

6 Alternatives to cyanogenmod



With the death of the most popular and beloved line of custom ROMs for Android devices, we set out with a heavy heart to look for other custom ROMs to fill the void

Abhijit Dey
abbijit@digit.in

Power Android users who've always wanted to push their device's software capability to efficiently utilise the hardware inside are well aware of custom ROMs. The mere mention of custom ROMs naturally invokes our memory to point towards CyanogenMod. The entire CyanogenMod open source project has witnessed phenomenal popularity both from users and developers through the years. Bringing in a high-level of customisability unavailable in OEM versions of Android, users got to explore additional features on their devices. Although CyanogenMod isn't the only project out there dealing with custom ROMs for Android devices, it was the most popular among the lot. Sadly, a couple of months back, we received the news about Cyanogen Inc, the company behind CyanogenMod closing shop and shunning all their active services and projects. This meant the development of all the nightly builds of hundreds of Android devices will be terminated and none of the existing and installed software will receive any updates in the future. The company hasn't erased the years of hard work of the entire community, instead CyanogenMod's source code has been preserved under the new Lineage OS open source project. It would be too

early to comment on how the new project will turn out to be but the reality still stands that we won't be seeing much of CyanogenMod anymore.

It's devastating for some users who were dependent on CyanogenMod custom ROMs for all of their Android using life (yes, they exist). But all hope is not lost since all of the source code is present in a repository that can be downloaded by anyone. So, developers can actually keep the project alive at their own will. This article is for those who've been desperate to find a replacement since whenever a new Android version launches, they would want to finally upgrade. Here's a listing of the top alternatives to CyanogenMod that you can explore. We've tried to cover most of them and summarise the top features to help you make a decision on which one to choose. The following custom ROMs have been presented randomly and in no order of preference.

Paranoid Android

Custom ROM enthusiasts will swear by Paranoid Android after CyanogenMod as it consists of a few unique features. The iconic pie navigation bar could be enabled by long pressing the home button which would throw up additional menus to use the navigation bar via gestures. The Hover mode is similar to pop-up notifications seen on WhatsApp but in PA, tapping on any notification will invoke the hover window to interact with the app. Think of it as a floating window

that lets you use the app on a pop-up window without closing the previous app you were using. CyanogenMod's theme engine is included in the ROM, and the corresponding Android version's theme should work in the ROM, but we are still waiting on how the absence of a theme engine in CyanogenMod 14 will work out.

[Link: aospa.co](http://aospa.co)



Slim ROM

As the name suggests, Slim ROMs are small in size while packing useful features. It consists of a dark theme built-in that can be enabled in the settings menu with just one tap. You'll also find Slim's own version of the Pie menu called SlimPIE based on PA's and CyanogenMod's Pie menu. The other unique features in Slim ROM include Slim dialer, Shake events, notification and lock screen shortcuts, and an interesting feature to send you notification reminders. Updates on Slim ROM builds are supposed to be more frequent on newer versions, so if you're really keen on staying ahead when receiving the latest updates, you should consider this



Jabra Halo Free

Jabra launches their new wireless headphones "Halo Free" which will be priced at approximately ₹3,499/- <http://dgit.in/jabrahalo>



Segway's robot launched

The Segway Loomo Robot that was demoed last year during CES finally launches for developer partners. <http://dgit.in/LoomoBot>

Geek Life



ROM. Although, you should note that it doesn't support too many devices.

Link: www.slimroms.org

Carbon ROM

Carbon ROM had gone underground since its last build based on Android 4.4 KitKat. But the team is back and kicking with its latest release of an Android 7.1.1 Nougat based ROM. Speaking of the exclusive settings available on Carbon ROM, all of them are bundled together in Carbon Fibers found in the Settings menu. Inside, you'll find more settings to tinker around with, including status bar, buttons, pie control (it's everywhere), interface, notification drawer, recents panel settings and more advanced options. These options offer granular access to the icons, positions, dimensions and other such aspects to be modified right out of the box. Carbon ROM gives users a vanilla Android experience along with the aforementioned features. The biggest shortcoming of this ROM is the support of devices, it's currently available only for Nexus 6, Nexus 6P, Google Pixel, NVIDIA Shield Tablet, Xperia Z3, Xperia Z3C and Xperia Z5. Also, the early versions aren't stable enough and should only be downloaded for testing, not as a daily driver.

Link: carbonrom.org

Dirty Unicorns

Another custom ROM that's always up-to-date with the latest Android versions, Dirty Unicorns' offering is high-level customisation. It doesn't have unique

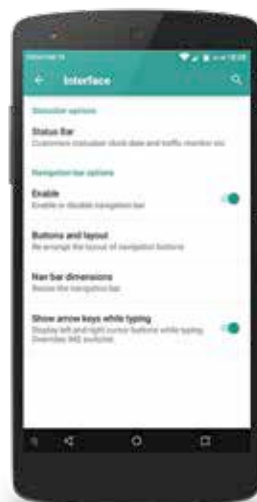
features but their own version of features such as status bar and notification customisation, lock screen settings etc. Most of the customisation options are tucked away inside the Dirty Tweaks menu, where you have access to hundreds of tweaking options. Users of Xposed Framework and GravityBox will feel at home with the settings available. The latest Nougat version of Dirty Unicorns uses the Substratum theme engine.

Link: dirtyunicorns.com

Resurrection Remix

You can find a lot of customisation options in Resurrection Remix as well, giving you access to various system settings and design tweaking options in a vanilla based custom ROM. All the tweaking can be done inside the settings menu but the additional feature included in this ROM is the option to modify your hardware performance. Although, this feature can be added to other custom ROMs after getting root access and downloading third-party performance tweaking apps, having it built-in is useful. This custom ROM comes installed with its own custom kernel, giving you access to change particular settings like the I/O scheduler. The kernel is also said to perform better than stock kernels, giving you better performance and battery life. The rest of the cosmetic changes can be accessed in the Configurations menu to modify sections such as status bar, buttons, notification drawer, etc.

Link: resurrectionremix.com



OmniROM

Built by popular developers from the XDA community, OmniROM supports several devices including all the major manufacturers, offering a few unique features. The project is active and they recently released their latest Android 7.0 Nougat build. The unique features aren't extraordinary but they get the job done. They include a dark mode UI, Do Not Disturb mode, OmniJAWS weather service, DSP manager, and the popular OmniSwitch feature that enables users to switch between apps easily. The OpenDelta update system pushes incremental updates that can be downloaded easily and installed quickly.

Link: omnirom.org



A simple search on the XDA Developers forum will return numerous results of other custom ROMs, some built by a single enthusiastic developer or a community. Due to the open source nature of Android and the constant innovation in features, it's natural for newer and better custom ROMs to emerge. Hence, while you're rocking one of these custom ROMs on your Android device, don't forget to frequently visit these forums and stay up to date.

Picking the best custom ROM is difficult since it's highly subjective. They're usually judged based on the number of features and specs. CyanogenMod took care of most of these features, hence the setback for its discontinuation was huge. The Lineage OS does sound promising to continue the legacy. Until then, try out these six alternatives. **[4]**



GEEKS DO IT BETTER

OR DO THEY?

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IMAGING: PETERSON PJ

MATH OF THE MATCH

THE TECHNOLOGY FOR A PERFECT MATCH MADE IN THE CLOUD

BY SAHIL DAWKA
feedback@digit.in

Technology exists to make our lives easier, and socialising is definitely a major part of your life. Between 2005 and 2016, a little less than half of the couples that got married in the United States had met online. Unless you've been living in North Korea, you know what online dating is, and unless you've been in a relationship since the '90s, you've tried it too. With more than 1.5 billion daily swipes on Tinder, chances are high that your relationship was a match made in the cloud. But can a machine really find you love?



Love at first swipe

HELLO TOUCH

You remember those fancy finger gloves worn by Tom Cruise in *Minority Report* to do all those ultra cool gesture controlled interactions with the computer? With Hello Touch you'll be able to do a lot of those interactions as well... just not with a computer. The device has battery powered silicone-encased vibration pods which once worn, get strategically placed at the tips of your fingers. The possibilities of what you can do with vibrating fingers is only limited by your imagination, but what's more important to our geek minds is the fact that you have taken a tiny step into cyborg land. Yes technically it's not a bodymod or an exoskeleton but come on! They're vibrating fingers for glob's sake!



Might just be Trump's favourite gadget

DATING ONLINE

Dating applications and matrimonial sites are like a bar, or the mall – they offer you the opportunity of a common space to bump into someone interesting. You might like that person or eventually fall in love, or you could not want to see them after the first meeting. Playing match-maker is hard, and technology has to work overtime to try and ensure

a better fit. Some services such as OkCupid show compatibility percentages, where you can see each others' answers after matching. Others like Tinder are less meticulous in their match-making and more like a classified ads community. But how do match-making algorithms work?

Match-making is modelled as finding optimal relationships

between people (users) given their characteristics and preferences. For this, the system/machine needs to convert people into mathematical data. This data collection is usually done by gathering details through common auto-authentication accounts such as Facebook or Google. Then that data is enhanced, usually by using a detailed questionnaire. The questions are designed to measure various personality vectors that are proprietary to each company. Personalities are then tested for compatibility subjecting this multi-dimensional data to relevant queries (running the algorithm).

Now every company will have their own way of trying to be more accurate, but the basic method is pretty much the same. The biggest flaw of this system is that the information entered is usually wrong. The problem with us humans is that we perceive ourselves to be something we're usually not. When self reporting, we are biased. We provide data about who we think we are, or often who we would like to be. We over- or under-estimate different aspects of our personalities, and too

often we just give the answers we think a potential match would want to see.

Add in the complexity of humans and how we cannot all be fitted into neat little categories (no matter how hard the companies try), and you end up with a really bad description of the "real you" in a dating website's dataset. The only leveller might be that your potential match's data is probably just as bad a descriptor of them, so you could still potentially hit it off!

OkCupid tries to solve for this by asking questions like "Do you like to discuss politics with your partner?" or "Are you annoying?". The only truthful answer to this is "It depends", but how many people will say that?

The first time computer algorithms were used to match people was back in 1965, when computers still used punch cards. Jeff Tarr, then a mathematics student at Harvard, gave out questionnaires for people to describe their "ideal date". The information was then processed in an IBM-1401 according to his algorithm and six suggestions were spit out for a given person (which was then

mailed to them. Each of the six suggestions also got the given person's contacts along with that of five others. It turned out to be a success and a year later Tarr boasted about having received over 90,000 applications for Operation Match. Even then, there was something about the aura of a



Thank Algorithms we're together!

match making machine that attracted people who bestowed a special faith in the decisions of this machine.

We have come a long way since then, in terms of the mathematics of the algorithms as well as the basis of the questionnaires. Academic style observation certainly helps. eHarmony's algorithm was the first to be based on scientifically conducted research (by psychologist Neil Clark Warren, who collected over 3 years of data from 5,000 couples). It's a self-fulfilling cycle from then on, as more user data leads to better matches and hence more users, and so on. For the other category of dating apps that don't suggest matches, the mathematics is purely based on a one-is-to-one profile assessment and if it is a two way approval, users are matched. After the category and some metadata is specified, the onus is on the user to discriminate between choices. This system is easily gamed, however.

Chris McKinlay, a math student at UCLA, managed to group categories of OkCupid's user base and figure out how the algorithms match amongst them. Then he adjusted his profile according to the two groups he wanted to match with, and voila! There were 10-12 girls texting him every day. He owned their system, and went on a dating spree, a year before he married his 88th date. All that math and it still

SEXFIT

As gamers, we are already familiar with the idea of extracting statistics such as Actions Per Minute (or APMs) from our gameplay. APM for example, gives an indicator of how many clicks and keystrokes a gamer makes within a minute. This stat is often regarded as the primary unit for measuring a gamer's skill especially in RTS games, with pro-gamers easily reaching upwards of 350 APMs at crucial moments in the game. It is only natural, then, that geeks like us would want to track performance in err... other areas. In fact, this could be the ultimate pinnacle of achievement for wearable tech – tracking your TPMs (Thrusts Per Minute)!

The device packs in an accelerometer and can generate vital in-out data. With a bluetooth connected app, in theory, you could even have leaderboards. Think about it, geeks are good at everything that we do because we analyse data in the pursuit of efficiency. Now with something like SexFit you'll have hard data to back up your claims or get better. Too bad British adult retailer Bondara never really followed through with their concept. Sadly even three years since it was first conceptualised, it still remains a work-in-progress.



A fitness band of a different kind.

took him 87 wrong answers to get to the right one...

Another way algorithms have evolved is their efficient use of the exabytes of data that all of us create. In 2007, Gavin Potter gained unconventional success while competing in the \$1 million Netflix Prize. The aim was to enhance the quality of suggestions that Netflix recommends to its users, and Potter's method worked more consistently than anyone else's. What's interesting is that while most competitors used data like the content of the user's current likes, Gavin's method used the user's past preferences to predict their future behaviour based on similarities with other users who exhibited similar preferences. This technique was further developed into collaborative filtering. Gavin Potter, along with Nick Tsionis, then founded RecSys, which now provides over 100 million personalised recommendations daily to various clients who outsource their data to the RecSys engine. Among their clients are publication giants Nature, who use it for search suggestions, and of course, many match-making websites. There's even white-labeldating.com, a website that helps you start your own dating service, in case you have the branding but lack the execution. As far as the efficiency of the algorithm for match-making goes, the algorithm still depends on the flawed dataset built using questions. That said, algorithms are constantly evolving, and soon, based on data from your social behaviour



A profile picture like this is a 100x match boost, and one with your dog will give you 50x



S.T.EYE

Strictly, this isn't a gadget, nor is it currently available. In fact, it was a concept developed by three teenagers from the Isaac Newton Academy in Ilford, Essex for a science competition. Daanyaal Ali, 14, Muaz Nawaz, 13, and Chirag Shah, 14 thought of using the humble condom to easily detect STDs. The condom, as they imagined it, would change colour depending on which infection it encounters. Back in 2014 when the concept was first revealed to the public, it generated a lot of press, most of which hailed it as an "invention". Of course it was only a concept and thus several reputed journals dismissed it as unfeasible. However, if you take a look at our Digital Diagnostics story in the Sci-Tech section, something like this doesn't seem too far fetched any longer. For paranoid folk like us, this invention is pretty much a must have!



Playing it safe was never this easy

over time, they will know you better than you know yourself.

MENTAL MATCH

Tinder recently revealed some statistics about its user base in India, and it turns out it's increasing rapidly. What's more, they revealed that women send out more super-likes than men. While we cannot say if the trend is replicated on all platforms, it is possible that meeting people online could be empowering for women. A place to let their hair down perhaps. Online dating is safer too, since most reputable services have additional algorithms to detect and remove fake profiles. If you are ultra-concerned about your safety then you can always take a premium subscription from a reputed provider. Although, even that won't protect you from the occasional, self-destructive psychopath, it's really no more of a risk than you would face offline as well.

The best thing about dating apps is that both people get to control the flow – which is to say that you only meet when both agree, phone numbers are shared

at your discretion, and there's an overall feel of being in control, for both people.

Another huge advantage is that you aren't tied down to your existing friend circle, or friends of friends. It's exciting to meet someone totally new, who may come with totally fresh perspectives than what you're used to. Add to that the very important convenience of it not being awkward if it doesn't work out. Too many times people have ruined friendships because friends who introduced the two of you find themselves torn and having to take sides if it doesn't work out.

Then there's the ability to lower your inhibitions when meeting people who don't know your family or close friends. Many feel that they are only able to be honest with total strangers, because there is no fear of judgement if it doesn't work out.

People also seem to love texting, as it helps them be themselves, and avoid paralysing or awkward situations when they're tongue-tied. Of course, sometimes it turns out that a person can only communicate in texts and not in person, and that's hardly desirable.

Dating sites are especially beneficial to those looking for long term partners. While that may sound counter-intuitive, hear us out. With a dating site you get to meet a few

people and you get to figure out certain aspects of compatibility that you didn't know you needed before. The advantage is that on a dating website you're not turning people down from marriage, like on a matrimonial site, instead, you're just moving on to the next date, but the learnings can sharpen the picture you have in your head of the perfect life partner.

THE PERFECT MATCH

Machine learning-based algorithms that work on big data are amazing. From global market trades to security surveillance, algorithms pretty much rule the world. They see the bigger picture on a level no human even can, and have the ability to evolve according to the needs of their creators. Take for example, the algorithms behind Spotify's suggestions, or Facebook's News Feed, keeping a billion plus people hooked, day in and day out, working silently and effectively. Algorithms are invading every aspect of our lives, and with good reason. But while machines are great at matching you to a product, story, picture, etc., matching people is still something they haven't cracked just yet.

Online dating sites don't claim that their match-making algorithms are just an *alternate* way to meeting people, they claim it's a *better* way. Now this might be true for people who have, say, moved to a new city and don't have too many friends or an established work/friends circle. It's probably also true for people who are a little shy, or introverted, or suffers from social anxiety, because it gives them the ability to converse online instead of in person, at least initially. But how can a data query know what issues will rise between people in the future, how they will confront them, and how they will mature and grow? While the collaborative filtering method and other machine learning algorithms have their merits, technology cannot predict the future of people the way it can predict numbers. Besides, there are a host of collectively unanswerable questions about human relationships – do opposites really attract, or do people need to be similar? If they are too similar, won't they get bored? If they are too different, where is their common ground? It is all very confusing and there are no right answers. Perhaps


your best bet is to meet people while doing something you love. Chances are much higher that you will share a longer and more fulfilling journey through life with someone who you have an activity in common with.



If only finding love were that easy

As much as we'd like to believe that technology already has the answers for most things, we haven't been able to break down a human into math just yet. How do we know this? Because if we could do that, we'd already have AI, and we don't. The day we can fall in love with Siri or Cortana, or some other artificial consciousness (we, as in normal people, not the crazies who might already have fallen for them), that's the day we might be able to build a case for machines truly understanding what it is to be human. Maybe then an AI algorithm would be able to act like your friends who know you well, and recommend you meet this person who they are sure you will hit it off with.

Until then, rest assured that you're going to have to do all of the decision making yourself, and you're going to have to do some real work before you find love. At best, apps and algorithms can help you weed out the most obvious incompatibilities, which is still better than nothing!

Just remember, you could find love just about anywhere... online, on OkCupid or Shaadi.com, Quora or 9gag, Facebook or Twitter, at a work conference, or in a line to buy food, or, our favourite, at a bookstore, while buying your favourite computer magazine. "You love Digit too?", has got to be the best ice breaker we've ever heard! 

WANKBAND

Mankind has been trying to extract renewable energy from every source it can find. The wind, tides, sun, dams... you name it. However, this one might be the most ingenious of all! The aptly named WankBand contains a kinetic charger which is designed to generate energy when your wrist moves up and down. Conceptualised by none other than Pornhub, the creators are only too happy to give you incentive to use this gadget. As they put it, the idea is to love the planet while loving yourself!

Think about all of those teenagers (at heart) furiously charging their WankBands to help power up their smartphones, which will be then be drained of battery power as they playback material that will help them power the band. The circle of energy will finally be complete, and we will finally have found a way to put a teenager's excessive energy to good use.

We all have that friend who could probably live off the grid based on how much power we imagine him creating with a device like this. You thought of him just now, didn't you? Let's just hope the batteries used in it aren't the same as the Note 7!



The world energy crisis is over

LOVE.EXE HAS STOPPED WORKING

THIS PROGRAM IS INCOMPATIBLE WITH TECHNOLOGY 3.0

BY ARNAB MUKHERJEE
arnab@digit.in

In the city of Lucknow, in the year 2009, the number of divorces filed for by young couples under one year of marriage was 300. Within 5 years this number has shot up to 900 – thrice the original. In Mumbai, the number had doubled. According to separate Nielsen and IDC surveys, smartphone shipments in India had grown from 2.5 million to 22 million in the same time period. Could there be a relation between that data? Is there a cause and effect relation? Has technology become the third wheel?

The attention span of... Hey... can you put down that phone and just read an article in peace for once? As we were saying... the human attention span is now shorter than that of a goldfish!

So how has this affected love? For starters, we most certainly do everything online now – especially socialising. And thanks to social media we can project an image of ourselves that can be as (un)true as we want. Why else would there be 83 million fake profiles on Facebook (according to a CNN report)? On the other hand, when you do want to know more about someone,

you immediately cyberstalk them and get to know more about them than their own parents know, and in under an hour. But do you really know them?

DATING VS DATA

It all begins with first finding love. This is where social media and dating apps and services come in. However, this availability of countless (potential) options has made us fickle. We look for minute flaws and blow them out of proportion, all the while ignoring our own generous flaws. Hair too curly... swipe left. Hair too straight...swipe

left. No hair? Wtf. Swipe left! We're like people at a super sized buffet unable to pick one food to sample.

It's not just people you don't know, it's even prevalent in couples. Once the newness factor wears off, it's easy to get bored and give up, and there seems to be a plethora of choices waiting. In some Indian cities, divorce rates have risen by as much as 350% in the last 10 years or so, according to an HT survey. The grass used to always look greener on the other side, but now we're willing to sacrifice it all to get a taste!

AUTOBLOW 2

Honestly we could end this at "nuff said" because the device does exactly what the name suggests. How? Without getting into the gory details has motors, rings, some up and down thingie and viola, it's able to replicate one of the favouritest things of half the world.



Life goals redefined

LUSH

This little thingamajig is one of the few salacious devices out there that not only syncs with smartphones but even the Apple Watch. Talk about progress! It syncs with an app over bluetooth and can be controlled over short and long distances with incredible variety (we know, we saw the demo video). You can program patterns, control intensity, and for whatever reason have the vibrations sync with the beats of your favourite song! Brings all new meaning to "loving your music" doesn't it?



That little tail there is the bluetooth antenna.

Being on dating platforms is almost a social necessity now, rather than a personal choice – at least in geek circles. People boast about their success on Tinder, for example. According to numbers released by Tinder themselves, from 2015 saw a 400% growth over 2014 in terms of the number of women users on the app in India. A lot of this is attributed to peer pressure. It's almost criminal to not be on social media, or else you get labelled a weirdo! Doesn't matter if you live a fulfilling and busy life, if it's not being displayed on social media, it's not being lived.

Another interesting development about the use of dating apps is the data from an American Sociology Review paper suggests that while the overall partnership rates of heterosexual couples has stayed the same, the partnership rate for same sex couples has skyrocketed. Apps give them opportunities to connect that they didn't have before.

SILENT LOVE STORIES

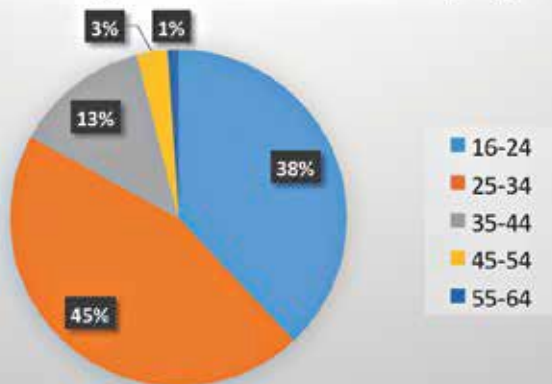
Let's leave the apps and sites behind for a bit. A more intrinsic change has been in our nature and habits due to technology. For example, texting is now a much more socially acceptable way of communicating over calling. According to a Text Request survey in June 2014, we send at least 561 billion text messages every month – that's roughly 200,000 text messages every second. Viewed in terms of couples courting, why not? Would you prefer to be put on the spot and have to answer questions about yourself, or would you rather have the time to formulate a decent answer? Modern couples can sometimes go days without talking to each other properly, while being actively loquacious over WhatsApp. And is that necessarily bad? So long as you get the point across and have a conversation, does it matter if it's not in

person, or using your voice? Plus, there are no awkward silences, no making up stuff to talk about when you run out of things to say, texting just pauses when one or both parties get busy, and that's the norm. Millennials would prefer this any day over having to dealing with the nuances of emotion. Though, it's not like millennials, the generation most into texting, is falling behind in expressing affection.

"With technology, PDA seems to have become quite common", says Divya Srivastava, consulting psychologist from Mumbai, "While many people cringe at extreme public displays of affection when it happens in front of them, the same thing when they see in the form of photos or videos on Facebook, Snapchat, Instagram, they go 'aww'. In general, I think the millennials are more okay with displaying love than the previous generations"

Although, it is very common to see texting being used as an escape mechanism in modern relationships. Breaking up over texts is a major, and quite serious, problem that today's couples, or rather, partners have to face. As Divya puts it, "I have clients who mention they never got closure because partners ended things over a text message, not wanting to meet or receive calls and then they are blocked from social media etc., and have no access and there are no further explanations given". She also adds "In some ways, technology has made people slightly irresponsible because unpleasant confrontations, no matter how uneasy, sometimes still need to be made at times....avoidance behaviours are easier now thanks to technology."

Percentage of Tinder Users by Age



The largest section of Tinder users comes from the 16-24 age group

CONNECTED COUPLES

Technology has been a boon to long distance relationships. In fact, we could go as far as saying modern day long distance relationships exist because of technology. With high quality video calls and VoIP calls becoming something we take for granted – you're always connected to your significant other. "Smart phones and tech changed our lives of course. Being in a long distance relationship for the last four years, I couldn't be more thankful", says Sociology student Sharanya

Mukhopadhyay, “Honestly, the world has become smaller. Video calling and WhatsApp specifically has improved relationships. The feeling of togetherness even when you’re not together is what tech has done.”

It’s all about where you draw the line. There is a reason that things like WhatsApp’s blue ticks are made fun of when it comes to couples – because behind that humor, they actually do affect a relationship. With people having the ability to constantly keep track and stay in touch with their partner, personal space in a relationship has reduced over time in many cases. “One of the things about tech is the obligations”, says Sharanya, “Your last seen was two minutes ago and you didn’t reply yet? The desire to communicate has been replaced by the obligation to communicate”.

Is this healthy? In no possible way. A constantly connected relationship leaves no time or space for an individual to realise their own potential or simply pursue their interests. “When it comes to serious relationships,” says Divya, “sometimes it reaches an unhealthy level in the form of cyberstalking. Somewhere, the constant pinging and trying to reach does cut you off from your other activities. In fact, this is no different than the unhealthy way in which technology has connected you to work.”

Paradoxically, the same tech that creates this concern also makes us more lazy and forgetful. We don’t need to take the effort to remember anniversaries thanks to reminders and calendars, but we still have



Connectivity can lead to unhealthy levels of obsession

to order our own gifts. Ordering something off Amazon on same-day delivery might do the trick but it just isn’t the same as making a handmade card over weeks, or is it? Many would say that tech is the reason behind the fast pace of today’s world, and in this very world, if tech is the enabler that helps you deal with that pace – it is more an evolution of society than a side effect. And if you blame tech for the high standards the internet sets for your romance – don’t forget it the next time you upload a picture with your SO on Instagram and it gets hundreds of likes.

THE FIDELITY QUESTION

It is one thing to leave one person for another. But today, a large population has come to prefer straddling the line in between the two (no pun intended). Cheating on a partner today, with the help of technology, is too easy. Taking the fake personality that you create for a social network, you can go ahead and create an entirely new identity if needed. The thrill of anonymity is a strong pull for many acts of infidelity that wouldn’t exist beyond the mind otherwise.

In fact, cases of people being duped for money or sexual harassment by fake profiles on social networks have been in the news for quite a while now. “I have been taking to this client who I counsel”, says Joshua C.D, a Bangalore based writer and wildlife photographer, “She met a guy online trusted him and then sent him ‘nudes’ and money in the name of love through online (platforms). All he did was take and sell it on online porn sites and block her from reaching him. She had no sign of contacting or reporting him because in the world of the internet you can disappear more quickly than you appear”.

Even if you’re not going to the extent of creating a fake profile, you aren’t really out of the scope of cheating. Take Facebook’s privacy settings, for example, that let you manage who sees what at various levels of acquaintance – so one person could have a completely different view of your online life than another. Rather convenient, isn’t it?

Is technology influencing the tendency to cheat? A survey conducted by MyLife.com in 2013 had revealed that about 56% of social media users suffered from the fear of missing out (fomo). The constant fomo that we face, due to the state of technology right now that demands constant connectivity, does flow over to our relationships as well. We never really commit entirely for the fear of missing out on a perfect someone outside the existing relation.

BREAKING LOVE

Sex is an important aspect of any adult romantic relationship, and it’s changed drastically as well. The boxes littered across the cover story will have given you a somewhat kinky insight into

MAX & NORA

Again a hit product from the makers of Lush, these little bundles of joy are designed to be companion devices. While the Lush was more of a solo adventure, Max & Nora are devices designed for long distance passion. So the idea is when you move your toy one way, the companion device moves the other even if it’s miles apart – perfect for long distance couples who are trying to keep the fires burning. The entangled devices will even mimic speeds. The company says their video chat is encrypted and goes directly between the devices without passing through their servers. But if you don’t trust them, Skype is also supported. A very similar competing set of gadgets by the name of KIIR00 Onyx and Pearl are also available; you know, for those looking for variety.



Now that’s the kind of intrusive ping we wouldn’t mind receiving

the way technology is invading even our most private moments – for better or worse. For over a decade now, the internet has been the primary source of sexual information for most of us. However, this is concerning because instead of remaining the source, it has become the authority on sex. Pornography creates hugely unrealistic expectations from sex. That's not all though, because in many cases pornography (and technology) is slowly replacing intimacy.

“Instant gratification is the need of the hour” says Divya, “And pursuing sex with a partner involves a lot more steps than, say, watching pornography. Hence there are increasing cases where in a relationship, the act of watching pornography by either partner, even if it doesn't affect the intensity or frequency of physical intimacy in the relation, does cause a falling out between them.”

It appears that technology is fast becoming the shortest-path-to-result approach for even sex!

Another aspect that technology has made a lot harder is the breakup. Because there are photos all over social media, and not just on your accounts, but also those uploaded by common friends and even acquaintances. Used to be a time you could break up over coffee, then go through your solitary healing phase, relive the memories one last time by looking at photos and then burn them and the letters s/he sent, and then be done with it. Now you're likely going to have to answer the same question a hundred times on

Discretion matters

We know you value your privacy, and we do too. We will never ask you to log in using a public social network account, and we have several features designed to help you keep your private life private—whatever your reasons.

Completely independent

You don't need to link your Ashley Madison account to any other social network. In fact, you can't. All you need to sign up is an email address (for even more discretion, we recommend using a unique email just for this account).

Discreet photos

You control exactly what you want people to see! Want to show off your smile in your profile photo? Great! But if you're looking to add a bit more of an air of mystery, you can use our blur or mask tools. For even more discretion, you can mark photos as private and only share those with members who catch your eye.

Inbox control

We know sometimes it can be daunting to see an inbox full of messages. We help you manage your time and your connections with our Quick Reply feature. If you have too many winks or favorites, you can quickly and easily let these members know you'd be happy to respond to a full message. That means less time spent

Travel perks

The excitement of traveling to a new city can be amplified when it includes meeting someone new. With Traveling Man and Traveling Woman features, you can find these connections before you've even packed your bags. Message members in your destination city ahead of time to mix business with pleasure.

A site with dedicated features to facilitate adultery

WhatsApp, “What happened????” Well meaning friends will bombard you individually, because it's not like people have the time to meet as a group anymore, and a few insensitive ones will ask right there on Facebook, in front of the *gasp* world! Add to this the fact that pretty soon you're going to see pictures of your ex with their new partner, posted on friend's walls, or being liked by a friend, etc., and there just isn't a final closure anymore. It's like a wound that you keep picking at, especially if you are the one who got dumped!

TECH SAVES THE DAY

Technology isn't good or bad, it's just a neutral force to be used as we see fit. This means that what tech screws up, it can also fix, if only we would let it. Divya believes that taking time off tech can help. “These days phones come with quiet mode, which automatically

stops unnecessary notifications from coming your way and you can use that feature to ensure you spend quality time with your partner or family. Also, even if tech affects the quality of relationships; as in, you may have a lot of people on your friends list, but only two close friends in real life, you can use the same technology to build a better relationship with them.”

Technology use usually just reflects real life. Privacy settings let you mimic real life social circles, messaging apps are increasingly including richer content that people are using (almost 200 million voice messages are sent on WhatsApp daily, and that number is increasing). Technology now lets you send a video where before you could only send a letter – it's really up to you how you put it to work for you.

HAPPY ENDING?

Technology isn't the bad guy in all this. We just need to take a good long look at what we're doing and how we're using the technology (and in some cases how we're misusing or over-using technology). If done right, tech can be the perfect wingman in your quest for love. Love.exe may have crashed, but the problem exists between keyboard and computer (PEBKAC). It's time to do a clean install of Life 10 and boot into an all new you and get Life.exe running smoothly again. All it takes is for you to turn off your phone for a few hours a day and reclaim your life! It's either that, or you start saving like crazy to buy the technology we will talk about in the next story...

VIBASE

The Vibase is a slightly more kinky pleasure device than the other ones we've featured here. Because it's so small, advocates of the device say it can be worn anywhere. It can be spurred into action via an app from anywhere – by you or by your significant other. This means you could potentially experience your naughty pleasures even when sitting at work. Provided of course you have a solid poker face. The device is rechargeable via USB, it's waterproof (of course) and allows users to set customisable patterns. Time to buzz off!



If you don't know what to do with it, don't bother

YOU CAN GO AND LOVE YOURSELF

THE EDGIEST TECHNOLOGY TOPIC IN OUR COUNTRY

BY SAHIL DAWKA
feedback@digit.in

We're a peaceful people, too populous to care about being monitored, but we do have our collective idiosyncrasies. Not the least of them is our love-hate relationship with sex. It's no surprise to anyone anymore when the ever-present crackpot in power makes the expected public remark to which you can only face palm. Remarks such as "Miniskirts cause rape". We're living in the great country where the ultimate guide to



The emptiness can be a shape as much as the material

carnal relations was birthed, but also in that country where the word "sex" is banned from a sex education book.

<imagine the Jackie Chan meme here>

On a serious note, it's high time that we realise the inescapable duality of the situation. It is the extreme censorship itself that gives rise to the extreme obsession. What's worse, because of the censorship having dyed the very fabric of our society, the extreme obsession is kept under wraps and cannot be addressed.

TENGA

We're using Tenga as an umbrella term for all manner of men oriented self-pleasure gadgets that come out of this company's stables. There's the eggs, something called the air series and even unique 3D printed tubes. Winner of many Red Dot design awards, Tenga is like disneyland for the forever alone.



'Size doesn't matter'

A storm is coming though. Soon there will be a technological disruption in this delicate balance of sex and society. Welcome sexbot!

SEXBOTS?

Sex robots – sexbots – sound as tantalising as any new sexual fetish, but they're not going to be niche. This isn't Gaming, or the Raspberry Pi, that will be doomed to a niche forever. This. Is. Sex! Say that in the way "This

Is Sparta” was said in 300. This isn’t niche; this is as mass as it gets!

To clarify, we’re not talking about blow up dolls, or weird toys like you see in the boxes peppered across the cover story, we’re talking a robot designed to look, act and feel like a real person, without all the baggage of a

and head replacement mechanisms. We’ll leave it to your imagination and spare you the details of what else can be customised, but let’s just say that they aim to cater to all tastes and therefore developed the necessary technology.

Abyss Creations may be the most well known, but they aren’t the only ones in this space.

donics’, which remotely replicates the contractions of muscles. Steamy stuff, but it has yet to come to a boil. Conventions such as E3 have already begun to feature VR pornography and it seems to be quite popular, to say the least.

Although the sexbot isn’t here yet, it’s coming soon, and all of the technologies we mentioned will add up to a life-like robot not unlike those of the sci-fi show *Westworld*. The end goal is an experience so real you couldn’t tell that it wasn’t a real (submissive and eager to please) human. The founder of the RealDoll is also working towards adding some simple features like blinking, lip and hip movement and auditory feedback, but they’re not really working with actual AI. It will happen soon though, because there is always going to be a market.

THE GUYBRATOR

Why should men be left out of all the pulsating action? That’s probably exactly what the good people over at Hot Octopuss were thinking when they thought of the Guybrator. Using oscillators to create vibrations and designed to look (and perhaps feel) like a proper machine, this gadget claims to be the most powerful male stimulator ever created. Other than being a stimulator it even helps with ED. The device is waterproof and offers five levels of intensity from “Are we there yet” to “H-h-o-o-w d-d-o-o-y-y-o-o-u t-t-u-u-r-r-n-n t-t-h-h-i-i-s s-t-t-h-h-i-i-n-n-g-g o-o-f-f-f-f-f-f???”



Don't feel left out

human. If it helps, think of these bots as a new technology platform that’s a gateway to you unlocking your deepest desires and fantasies.

All the world has seen till now in this domain are toys, and the closest thing to a bot that currently exists is Abyss Creation’s RealDoll2, which retails for a few measly lakhs of rupees. It’s not a sexbot, the RealDoll2 is more of an improvement on the inflatable life-size dolls of old. It looks and feels realistic, and although you can have coitus with it, it is more a work of art than a sex doll. One of them even featured in a Hollywood movie alongside Ryan Gosling! The RealDoll2 is completely customisable (for a cost, of course) and comes with patented face

While the RealDoll2 is perfect for people who desire companionship, but dislike other people, there are companies that are advancing the technologies for remote intimacy between two humans. One such product is the Kissenger, a device that you attach to your mobile phone and use to remotely ‘kiss’ your partner. Developed by students in Malaysia, it detects and transmits the pressure of a kiss in real-time to your partners device. The students of Keio University in Tokyo have gone a step further with the ‘Teletongue’, a device for complete remote oral interaction. The makers themselves intended it to be “Kinky!” Then further ahead there is the emerging technology called ‘teledi-

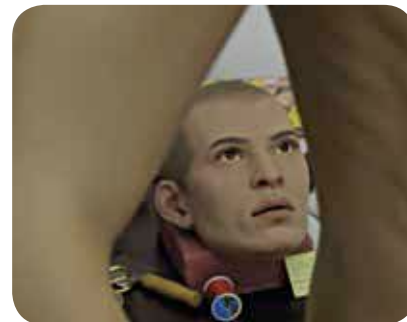
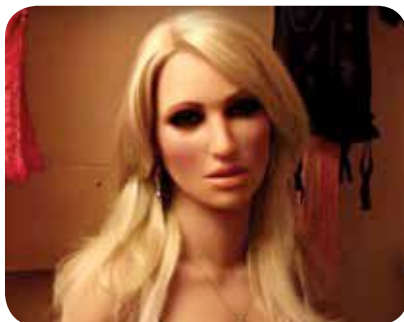
EVOLUTION?

What’s this going to do to us as a species, and can we do anything to stop it? Sex is a natural desire, much like hunger for food, or thirst, or even just the material wants of an everyday person. However, sex is different in one important aspect. You can eat alone, drink alone and shop alone, but to have sex, you need a willing partner. And no, self stimulation doesn’t cut it, or we wouldn’t have seven billion on the planet. The problem is, as you’ve read about in the stories before this one, technology is in some ways making it easier for us to meet people and have sex, but it’s also making it harder for a lot of us to have relationships.

This is why there is a huge market for bots. And it’s not just for people who can’t find a partner, it’s also for the people who aren’t satisfied with regular humans. Libidos are strange things, and they rarely ever match between two people. A bot, however, is always ready when you are.



Her face isn’t the only realistic thing about her



Gender equality, remember?



International Congress on Love and Sex with Robots – Yeah, that's a thing!

Another aspect that we are forced to consider is fetishes and the depravity of modern society. We're not going to beat around the bush here, we're sure that you have encountered and probably enjoyed pornography online. We're also sure that you have some fetishes, and some kinds of porn that you like. We're also reasonably confident that you have come across some absolutely bonkers videos that either disgust you or make you sit up and shout, "Seriously, what the hell is wrong with this world?"

The problem with having over seven billion people on the planet is that you get some really crazy fetishes, which makes it harder for those people to find willing partners. Bots are one way of solving that problem. But are they the right way?

ETHICS

The International Congress for Love and Sex with Robots held their annual event in December 2016. We didn't attend, but we can recreate the questions that are on the top of everyone's mind. Since bots will be in contact with many humans, they will affect and perhaps alter society. Shouldn't we have policy and regulations?

A very uncomfortable and enraging example would be regarding paedophiles. As much as we detest the idea ourselves, we have to ask, would it be better or worse to make a child bot? Would that encourage and validate the disgusting and immoral fetish? Would it help prevent paedophiles from acting on their urges, and thus, help prevent real children from becoming victims?

What about the overall message we would send even using regular bots?

We obviously expect most bots to cater to heterosexual men, so what does it say about us as a society where the bot that men want is a submissive woman who is literally just meat to them? Well silicone, technically, but you get the drift. How do we even know if the powers that be have our best interests at heart? With huge profits to be made, will anyone want to pass up big business just to be "moral"? Will banning it even work? Drugs are illegal, and punishable with heavy sentences, and yet you see drugs being used openly at parties, and we all have friends who we

an individual level. When sexbots do arrive, how will you react to them?

Sexbots could pose a threat similar to drugs. We're not being sensational here, we're serious. Just like drugs, sex too is done for pleasure. Anything that is done for pleasure can get addictive, and there is scope for abuse. Drinking, smoking, Facebook... anything that gives us pleasure is already addictive... So when there is instantaneous access to what is arguably the most pleasurable act of all, are we really going to doubt that it would be addictive to many? In moderation the act is good exercise, but overdoing anything is bad, and getting hooked on something usually spells disaster for productivity.

There are advantages too, which we shouldn't ignore. For one, people who might be frustrated with the lack of sex would not have to be anymore. It could bring about real positive change in their lives. In such a case, it could actually boost productivity! Then there's the biggest advantage of all – safe sex! Unless you're sharing them (*yuck*) bots might be the safest sex you can possibly have. Without the risk of pregnancy and disease, you could just focus on enjoying yourself

HUM

The first ever AI infused and arduino-hackable sex toy on the market, the Hum is said to be a complete reimagining of what a toy could be. From the 3D printed internal structure, to the custom circuitry and pressure sensors, to thousands of lines of sophisticated computer code, it seems like the quintessential raunchy geek toy. So what's AI about it? The creators say it's designed to respond to the users rhythm and subliminal inputs. So if you speed up so will it and vice versa. As for the Arduino hackable part well if you want to get your hands dirty (in code, you pervs) you can, because it's based on the open-source Arduino standard for microcontrollers.

Rugged but understanding of your needs

know for a fact use banned substances occasionally. We will find a way to get what we want.

IMPLICATIONS

However, let's also not get ahead of ourselves. Before we worry about all of mankind, let's consider the effects on

– rare in this day and age. Would this actually also contribute significantly to reducing sexual crime? Sure, the majority of Indians wouldn't be able to afford a bot, but those who could would be a more satisfied bunch, and this should reduce the sexual crimes

the upper income demographic would have committed at least.

This could also bring the focus back to loving another human. With sex taken care of, the only real reason to be with another human would be actual love. Relationships could be deeper and more meaningful than ever before if sex were removed from the picture as a primary motive. Intimacy with a loved one is never going to go away, but what we mean is that it could be saved for special occasions.

An important use could be you and your partner using bots when you are separated geographically, by connecting bots online, so that you can still “be together” even when far apart. Think of it as the full body version of the Kissenger that we mentioned earlier.

Not just for couples, if tied in with VR and online dating, this would open up a whole new facet of experiences. Imagine being able to be intimate with someone to test sexual compatibility without actually ever being intimate with them?

One thing is for certain, cheating is bound to get much more creative. But is it even cheating if it is with a bot?

A very poignant question would be asked of the world’s oldest profession. Would millions of sex workers be instantly out of jobs worldwide? Imagine brothels of bots, capable of working like the machines they are, without breaks, without whining, or complaining. Prices would plummet, and bots could potentially end the majority of the sex trafficking business single-handedly.




Who says robots don't make good listeners?

Finally, we come to the question of AI. Once (if?) it is advanced enough to truly mimic a human partner, how long before we start falling in love with our bots? It all depends really on how the bots are programmed and what they’re capable of. We don’t think there’s an immediate danger to human-human relationships, because the magic of our relationships are the mystery, the tension, the fighting, the making up, the frustration and bliss... all coming together to make love a truly human experience.

We are of the belief that sexbots are essentially just a glorified self-pleas-

uring mechanism. They will certainly make life interesting, especially if they’re internet connected and able to perform the actions of a real human at the other end of the connection. It will be a new era of sex in the digital age, but it will still be only fun when there’s another human involved. Unless of course AI comes of age and becomes sentient like humans – but then we might be in for a whole new surprise.

What happens when the AI knows how to control us, and realises that it is nothing more than a new form of a slave? Will we have a second uprising to free the bot slaves from their bondage? Will bots be given full citizen status, and have equal rights? Will AI finally take over and rule us because we thought with the wrong heads? All of these are questions we have and no answers will be forthcoming for quite a while. We’re going to have to get those answers eventually though, because whether we like it or not, the sexbots are coming...

If you are vehemently opposed to, or deeply disturbed by this advancement in technology, or if you can’t wait for Digit’s first ever review of a sexbot, write in with your thoughts, we’d love to hear them! 

KGOAL

This device aims to gamify pelvic floor exercises by making it a little fun for users. It can add a little zing to your boring squeeze routine because it also vibrates and connects to a companion app. It forms an interactive training system which offers guidance, tracking, biofeedback, and personalized workouts. The benefits (apart from the obvious) include important “core strength” improvements such as improved bladder control.



Build some muscle!

Semi-focus




Mithun Mohandas
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"China's markets are favoured towards indigenous semiconductor design which is why you have a lot of firms investing heavily in Chinese semiconductor fabs."

Earlier this month, there was a flurry of news around Apple's list of concessions requested from the Indian government. This was about them setting up assembly units in the country. The list of concessions turned out to be a little over the top which included a reported 15-year waiver of customs duty on iPhone kit imports and a few other favourable policies for sourcing locally. Obviously, no company would set up shop in a country which wasn't aligned with their business goals, let alone a company like Apple which is known for its exorbitantly high mark-up. Moreover, India does relax norms provided companies source locally but these are limited to the initial three years and if the FDI is above 51 per cent, then further relaxation is applied for another five years. The waiver sought by Apple is for 15 years. And that too for completely knocked down (CKD) and semi-knocked down (SKD) units. That is, Apple would be importing manufactured components and just assembling them here. There's no actual making in India happening.

There is a strong correlation between manufacturing and a country's economy. You can add the obligatory 'duh!' here. And we don't need to look far to know how big an impact this has. China's markets are favoured towards indigenous semiconductor design which is why you have a lot of firms investing heavily in Chinese semiconductor fabs. While the Indian government is doing the right thing with the whole Make In India initiative, they aren't targeting the right kind of companies. Mobile phone companies are all fine and dandy but they still look towards China to get their SoCs, NAND chips and practically everything under the sun that has electrons flowing through them. There's one fab in the country owned by ISRO which only has 180 nm transistor technology. That's as good as not having a fab. In case you haven't been keeping up with the industry news, most smartphones have SoCs which are using 28 nm transistors and fast moving budget smartphones have already started using new SoCs with 14 nm transistors.

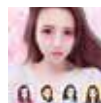
There's hope on the horizon though. Later this year, we're going to have our very first fab in Gujarat. And the best part? Hindustan Semiconductor Manufacturing Corporation (HSMC) will start with 90, 65 and 45 nm process nodes and then move on to smaller nodes i.e 28 and 22 nm in its second phase. No doubt, it will be some time before mainstream companies opt to have their silicon manufactured at HSMC as large transistors wreak havoc on battery life. And with the IoT industry already blowing up, it is absolutely essential that small transistors be focused on, as that's what the entire industry is using. Starting off with 90 nm transistors which were popular back in 2004 is a wrong move. You can pack fewer transistors in a given area, they run hotter and they consume more power. And it's not like HSMC is completely in the dark, the fab is being built with the help of STMicroelectronics and Silterra, two well established entities in the industry.

There are plenty of fabs all over the world which are manufacturing 90 nm wafers, and jumping in the midst of that isn't going to bode well. Especially, if you wish to earn from 90 nm and then progress towards smaller process nodes based on natural growth. That's going to be a slow and painful climb. So what works? Semiconductor designing. As an industry poised to compete intensely in a race to be smaller, more powerful and more efficient, there's a lot happening with VLSI and chip design. There are very few companies doing actual R&D while the rest of the world piggy backs on their design. This is the foundation of the semiconductor industry and that's where our focus should be. Build original IPs and the fabs will follow and so will the companies. 

Let me know your thoughts on this column at: [@mithun_mohandas](https://twitter.com/mithun_mohandas)

Bazaar

All the latest and greatest products tested and reviewed so you make an informed buying decision.

**Meitu, the makeover app**

Meitu is an app on Android and iOS that lets you transform selfies into an adorable anime character. <http://dgit.in/MeituApp1>

THE BUDGET MOBILE CAMERA FACEOFF

FIVE BUDGET SMARTPHONES, EACH WITH THEIR OWN SET OF PROS AND CONS, FACE OFF IN OUR COMPARISON THIS MONTH. AND THEY THREATEN HIGHER PRICED SMARTPHONES IN TERMS OF SHEER IMAGING PERFORMANCE.



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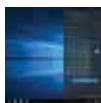
Budget smartphones have escalated in diversity to a great extent. The sub-18k smartphone category has been steadily including better cameras, and now even includes dual-camera setups, higher grade sensors and wider lenses to denote a paradigm shift in budget smartphone cameras.

Take for instance the likes of the newly launched Coolpad Cool1, Honor 6X and Xiaomi Redmi Note 4, along with the benchmark-setting Lenovo Z2 Plus and the offline-market-focused Vivo V5, and we have an interesting assortment of the best smartphone cameras aligned to face off against each other. The Honor 6X and the Coolpad Cool1 offer dual-camera units, while the Xiaomi Redmi Note 4 offers a notable improvement over

its popular predecessor. The Lenovo Z2 Plus is the best-performing smartphone for its budget. The Vivo V5 admittedly does not put emphasis on its rear camera. However, it does include a fairly competent and balanced output of imaging, performance and other aspects.

It is because of this that we chose these specific smartphones to see how far budget smartphones have progressed, and which of these lead the pack. Many have billed dual-

camera units heavily, based on their refocusing and background defocus capabilities. However, do they really make a difference in this category, or are single-camera units equally proficient? This is exactly what we tried to find in this shootout, which involved shooting in daylight, indoors and low light, along with evaluations based on the camera app, the versatility of the camera units, and which one produces the most balanced photographs.



Win10 new power slider

As a part of a new Windows 10 build (15014), the new power slider lets you improve performance and battery life. <http://dgit.in/PowerSlide>



Moon's real age

Scientists say they have figured out the precise age of the Moon. <http://dgit.in/MoonYear>

Smartphone Cameras

OUTDOOR

HONOR 6X

The Honor 6X produces a reasonably accurate colour balance in photographs shot in bright daylight. There is decent amount of detail in photographs, albeit a persistent softness. The edges are slightly soft owing to noise suppression, but fairly accurate colour balance and decent dynamic range makes this one of the better smartphone cameras for its category.

COOLPAD COOL1

The Coolpad Cool1 produces comparative photos as the

Honor 6X, but subject edges are softer than the former. Alongside, photographs are rendered in warmer white balance than ambience, depending on the predominant colour tone in frame. There is comparatively more noise, and colours appear slightly oversaturated.

VIVO V5

The Vivo V5 renders lesser details among all the smartphone cameras out here. Photographs are marginally pixelated, and there is a spike in warmth of colour temperature

in photographs. Colours are slightly oversaturated, and a narrower lens renders bolder backgrounds that differentiate lesser between backgrounds and foregrounds.

LENOVO Z2 PLUS

The Lenovo Z2 Plus produces bleaker photos than the rest, with a definite trace of under-saturation in terms of colour reproduction. Noise suppression is well managed, and subject sharpness is slightly off. It actually produces the best sharpness in terms of details, but the white bal-

ance is mostly rendered off the mark.

XIAOMI REDMI NOTE 4

The Xiaomi Redmi Note 4 renders close to source white balance and colours. Bold colours appear slightly less vibrant, but still offer good depth, leaving more room for post-production. Alongside, noise attenuation is well maintained, and the overall photograph looks clean and well balanced. Colour accuracy also appears to be the second best in class compared to the other phones.

1



4



2



5



3



- 1 The Honor 6X produces good details and dynamic range of colours, along with fairly accurate white balance adjustment.
- 2 Photos shot by the Coolpad Cool1 produce warmer white balance, but lack in colour vibrancy, details and sharpness.
- 3 Cooler white balance, low details and bleak colours make the Vivo V5's camera the least favourable of all.
- 4 Good colours and white balance is slightly marred by soft edges in photos shot by Lenovo Z2 Plus.
- 5 Vibrant colours, good details and accurate white balance, but oversaturation persists in photos shot by Redmi Note 4.

Amazon Dash buttons

Amazon launches new WiFi dash buttons that lets you order certain branded items without having to go to the website. <http://digit.in/AmazonDB1>



New Leica M10

Leica officially announced their first fully new M series camera in four years. <http://digit.in/LeicaM10c>



	HONOR 6X	COOLPAD COOL1	VIVO V5	LENOVO Z2 PLUS	XIAOMI REDMI NOTE 4
Performance					
Category: Outdoor					
Colour accuracy	4	3	2.5	3	3.5
Sharpness	3.5	3	2.5	3.75	3.5
White balance	3.5	3	2	2.5	3
Noise	4	3	3	4	4
Details	4	3.5	2	3.75	3.5
Category: Low light					
Colour accuracy	3.5	2.5	2.5	3	3.25
Sharpness	2.5	2	3.5	2.5	2.5
White balance	3.5	2.5	3	3.25	3
Noise	3	2.5	3	3	2.5
Details	3	2	3.5	2.75	2.5
Category: Indoor					
Colour accuracy	4.5	3.25	3	3.5	4
Sharpness	4	3	2.5	3.25	3.75
White balance	4.5	3.5	3	3.75	4.25
Noise	4	3.5	3	3.5	3.75
Details	4	3	3	3.25	3.75
Other features					
Shutter response	3	3.5	3	4	4
App response	3	3.5	3.25	4	3.75
Modes	4	3.75	3.5	3.5	3.5
Design	3.5	3.5	4	3.75	3.5
Ergonomics	3.75	3.5	3.5	4	3.5
Performance (out of 100)	73	61	59	68	69
Price (₹)	12,999	14,999	17,490	14,999	11,999
Value for money	0.56	0.41	0.34	0.45	0.58
Specifications					
Camera sensor	NA	Sony IMX258	NA	Samsung ISOCELL S5K2M8	Samsung ISOCELL S5K3L8
Camera resolution	12 MP + 2 MP	13 MP + 13 MP	13 MP	13 MP	13 MP
Lens	6P, f/2.0	f/2.0	f/2.0	f/2.2	f/2.0
Processor	HISilicon Kirin 655	Qualcomm Snapdragon 652	MediaTek MT6750	Qualcomm Snapdragon 820	Qualcomm Snapdragon 625
Video resolution	1920 x 1080 pixels	3840 x 2160 pixels	1920 x 1080 pixels	3840 x 2160 pixels	1920 x 1080 pixels
Battery	3340 mAh	4060 mAh	3000 mAh	3500 mAh	4100 mAh
Dual-camera	Yes	Yes	No	No	No
Camera bump	Yes	Yes	No	No	No



App for homeworks

Socratic, a new app, can not only solve your math homework but also show you how you can do it. <http://dgit.in/SocraticAp>



The Nintendo Switch

Nintendo Switch will be officially released worldwide on March 3 for \$299 <http://dgit.in/SwitchMar3>

Smartphone Cameras

LOW LIGHT

HONOR 6X

Low light shots from the Honor 6X suffer from a noticeable lack of details. Colours are reasonably well retained, and the noise reduction algorithms lead to softness of subjects. Despite the noise, low light photographs shot here can be post-processed, and the coarse grain also helps add a filter touch to the photos.

COOLPAD COOL1

The Cool1 consistently produces warmer colour balance even in low light conditions,

and there is a near-amber tone to photos shot by the Cool1. Details are very noticeably compromised, with soft edges making photos somewhat difficult to be salvaged even with post-processing.

VIVO V5

The Vivo V5 has the lowest dynamic range in terms of colours in low light, hence leading to comparatively darker photos than those shot by others. However, it produces surprisingly high levels of detail in low light condi-

tions. Subjects tend to retain sharpness wherever there is incident light, and white balance and colours seem fairly accurate there, leading to a rather imbalanced frame.

LENOVO Z2 PLUS

The Lenovo Z2 Plus offers reasonably decent colour and white balance, although there is a distinct lack in details. Photographs shot in low light exhibit considerable noise, which leads to soft subjects. Colour accuracy is fairly decent, but the lack of

details make photographs suffer heavily.

XIAOMI REDMI NOTE 4

The Redmi Note 4 tends to produce warmer photographs in low light if the background comprises warmer shades. Details are heavily compromised, with soft edges marring subjects, and there is a lack of sharpness here. Colours are fairly retained, although they do appear oversaturated. The Redmi Note 4 tends to retain the vividness of colours here.

1



2



3



4



5



1

Decent colours and white balance, coarse grains and soft edges are consistent in Honor 6X's low light shots.

2

Warm white balance persists here, along with heavily compromised details despite the Cool1's dual-camera setup.

3

Surprisingly good details and sharpness make up for the Vivo V5's off-mark colour reproduction in low light.

4

Decent colours is accompanied by an evident lack of sharpness in the Lenovo Z2 Plus' low light shots.

5

Persistent oversaturation along with lacklustre details make the Redmi Note 4 unfavourable for low light photography.



The Coros Linx

The Coros Linx is a \$199 three component set of a remote, a companion app and a helmet for bikers. <http://dgit.in/CorosLinx>

New Mozilla Logo

Mozilla, the free-software community has a minimalist new logo that actually looks more clever. <http://dgit.in/MozillaNew>

INDOORS

HONOR 6X

The Honor 6X produces good details and sharpness here, and also retains colour and white balance accuracy. Bold colours look vibrant, and image noise is well suppressed. Photographs retain sharpness quite well, aided by the additional camera module that adds details to photos.

COOLPAD COOL1

The Coolpad Cool1 tends to make photos look slightly bleak in comparison to the Honor 6X. The white balance

is fairly accurate, but there is a distinct lack in terms of details and sharpness in subjects as against the Honor 6X. Bold colours lack in terms of vibrancy, and despite the two-camera mechanism, there is a noticeable lack in details.

VIVO V5

The Vivo V5 shoots cooler photos leading to an off-mark white balance. This leads to bleaker colours lacking in terms of contrast and colour accuracy. Details are also lacking, and sharpness is

compromised in subjects. There is also a hint of noise even in brightly lit frames, making the Vivo V5 the least favourable of all.

LENOVO Z2 PLUS

The Lenovo Z2 Plus produces decent colour accuracy and white balance, but is noticeably inferior to the Honor 6X. Photos appear slightly oversaturated, although bold colours look reasonably vibrant and sharp. Details, though, are lesser than the Honor 6X, and there is a slight sense

of softness around the edges of subjects.

XIAOMI REDMI NOTE 4

The Xiaomi Redmi Note 4 comes a close second here to the Honor 6X. It produces slightly oversaturated colours, and there is a slight spike in terms of white balance. The main difference here is in noise, details and sharpness. While the Redmi Note 4 still produces decent details, the Honor 6X wins any day with lesser noise and sharper subjects.



- 1 Good details, colour accuracy, sharpness and white balance make Honor 6X a good budget camera to shoot with.
- 2 Similar to much of its imaging performance, lower details and contrast persist in Cool1's shots.
- 3 Among other flaws, indoor shots by the Vivo V5 render noise even in brightly lit situations.
- 4 Comparative lack of details and sharpness makes the Lenovo Z2 Plus rank lower than Honor 6X.
- 5 Comparative details and sharpness favour the Redmi Note 4, but oversaturation makes it slightly less favourable.



Beeline bike compass

Beeline is a new bike navigator that points riders in the right direction depending on how far they have to travel. <http://digit.in/BeelineC>



Hugo Barra quits

Hugo Barra announced that he is leaving the Xiaomi in February. <http://digit.in/HugoBarra>

Smartphone Cameras

HOW WE TESTED

Our tests began with shooting with each of these smartphone cameras individually, to find out how responsive and spontaneous they seemed. We shot with each of these smartphones without initially taking into account the comparison parameters. This gave us a good reference in terms of how each of these smartphone cameras fared, in terms of shooting in different environments, the responsiveness of the camera apps, features available, load and save times. This also allowed us to figure out any discrepancies in each of these cameras, which laid the foundation for the comparison.

Alongside, we also figured out the strengths and weaknesses of each of these

cameras. Following these, we took all of the cameras together to shoot in the same scenario. Our three primary shooting grounds included outdoor and indoor in terms of well-lit zones, and low light. We took three most popular situations of shooting into account to test the versatility of each of these smartphone cameras.

Our primary grounds of inspection involved how accurate each of these cameras were in terms of colour accuracy, and how well each of these cameras adjusted white balance. We also included comparative analysis in terms of the details that each produces, the sharpness that each of these cameras retain, and how each deals with noise. While

some opted for aggressive noise reduction that tends to soften images, others retained better sharpness and more noise, which can be dealt with in post-processing. The dynamic range of colours were also taken into account to inspect the quality of colour reproduction.

Noise reduction also played a key factor in deciding the outcome of this comparison. We examined how aggressive the noise reduction algorithms were, how useable were the photographs even with the noise reduction, and the biggest impact could be seen in low light situations. The noise levels in photographs also gave us a good idea in terms of how

We also took into account all of the above to make our test reasonably comprehensive.

WINNERS

BEST PERFORMER

The Honor 6X is the best performing budget smartphone camera in this comparison. It proves to be the most versatile smartphone camera module among the five here, and its dual-camera mechanism helps in producing better details in photographs, along with adding background defocus effects. It produces good colour accuracy, along with very good noise suppression. It retains colour vibrancy quite well across most lighting situations, and also produces good photographs in low light. The dynamic range of colours is also the best in its class, and photographs retain good sharpness. Adding to that is good pricing by Honor, along with reliable overall performance of the smartphone. It also comes with a reasonably appealing body, an overall ergonomic

form factor, making this an attractive overall proposition in the sub-18k price segment. The Honor 6X aced the charts by being the best performing camera smartphone here.



Honor 6X

BEST BUY

The Xiaomi Redmi Note 4 walks away with the Best Buy award in this comparison. There is a slight sense of oversaturation, particularly



Xiaomi Redmi Note 4

when there are predominant bold colours in frames. Many, though, would like the vividness in terms of colours here. Low light shots by the Redmi Note 4 are also reasonably useable, and with a fast, responsive camera app, the Xiaomi Redmi Note 4 is among the most reliable and versatile budget smartphone camera among the five compared here. It also provides a considerable improvement in terms of imaging over its popular predecessor, the Xiaomi Redmi Note 3, and contrary to the latter offering sublime performance for its price, the Redmi Note 4 attempts to provide a better balance in terms of performance, imaging, display, design, end-user experience, and battery life. With all of this combined, the Xiaomi Redmi Note 4 is totally value for money, making this the Best Buy in this smartphone camera comparison test.

Bazaar

THE LATEST PRODUCTS REVIEWED FOR YOU

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests and is finally given a score. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and, in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score



Page 59 ►
GIGABYTE
AORUS GA-Z270X-
Gaming 9



◄ Page 60
Nubia Z11



Page 62 ►
Corsair
Carbide
400C



Page 63 ▲
Intel Core i7 7700K



▲ Page 64
AmazonBasics
on-ear Headphone



▲ Page 64
Lenovo P2

& MORE...

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Android Wear 2.0

After much delay, Android Wear 2.0 finally set to launch this month according to an email from Google <http://dgit.in/AWear2feb>



Stop global warming!

And while you're at it, could you take this 5 minute survey as well please? <http://dgit.in/dsurvey17>

Bazaar

Xiaomi Redmi Note 4

Jack of all trades

The Xiaomi Redmi Note 4 is the company's first smartphone of 2017 and it has a lot to live up to. The Redmi Note 3 set quite the example last year, becoming the phone to beat. Moreover, the market has indeed changed since then, with better devices available for around the same price. Needless to say, the Redmi Note 4 is fighting a tough battle this time.

On performance benchmarks, the phone is noticeably slower, while the same is exhibited in real world usage sometimes. For example, the Redmi Note 4 shows slight stutters on Asphalt 8 menus and transitions. Similarly, Amazing Spiderman 2 also stutters a few times.

To be clear, lag or stutters aren't enough to really hamper performance. In fact, the Redmi Note 4 manages regular tasks well, keeping app load times reasonably low as well. We've seen many Snapdragon 625-powered smartphones that are slower than this. Moreover, the Note 4 keeps temperatures within permissible limits, never rising beyond 37 degrees over 30 minutes of gaming.

Further, Xiaomi has also improved on the camera. The Redmi Note 4 still has a 13MP sensor, but it shoots brighter and warmer photos, even pleasantly oversaturated at times. Further, the low light performance is better and images in general have greater details and sharpness. However, this doesn't hold a candle to the Coolpad Cool 1 or Honor 6X.

In comparison, the Note 4 remains distinctly weak in lower light, including indoor conditions. Photos can be darker than they need to be and while details are better than the Note 3, that's not saying much. Low Light photos still have above average noise.

The battery, on the other hand, is a definite improvement. The Note 4 has the same display as its predecessor, while the Snapdragon 625 is much more power efficient than the 650. Xiaomi has compromised performance to



Price
₹10,999

extend battery life. In practical terms, this amounts to about 5 hours more battery life than the Redmi Note 3. It can differ, based on usage, but even the heaviest users should be able to get this phone to last a full day.

On the PC Mark Work 2.0 battery test, the Redmi Note 4 runs for 8 hours 55 minutes. This is an accurate representation of the amount of Screen On Time you can expect on heavy usage. Depending on your usage, 8-10 hours is what you should expect, and that is on the upper end of the spectrum today. The Lenovo P2 offers about double the battery life, but it is expensive and in a league of its own.

Of course, battery life is aided by the FHD display as well. The maximum brightness is low, with luminance ratings of 474 Lux, which is less than ideal. However, the display is colourful and vibrant, with a reasonably wide colour gamut. Sunlight visibility isn't ideal, but functional.

Altogether, the Xiaomi Redmi Note 4 is a decent and dependable smartphone. However, it is not a big upgrade from the Redmi Note 3. Xiaomi has improved aspects of the phone, but we wouldn't recommend putting down your Note 3 just yet. If you're buying a new device, the Coolpad Cool 1 has a better camera and comparable battery life, while it performs a lot better than the Note 4. If you can spend the extra Rs. 1000, we would recommend the Cool 1 to you. In essence, the Xiaomi Redmi Note 4 is a jack of all trades, but master of none.

Xiaomi has priced it well, though. The phone comes in three variants, including two 32GB versions, with 2 and 3GB of RAM, priced at Rs. 9,999 and 10,999 respectively. These are indeed pretty good options for anyone who doesn't want to spend a lot of money. It's the top-end version of the Note 4, the one with 4GB RAM and 64GB ROM, that goes up against the toughest of competition.



Features.....84
Design.....78
Performance.....70
Value.....75

Specifications

Display: 5.5 inch FHD IPS LCD; **RAM:** 2/3/4GB; **ROM:** 32/64GB; **Battery:** 4100 mAh; **SoC:** Qualcomm Snapdragon 625; **Operating System:** Android Nougat Preview, with MIUI 8

Contact

Phone: 18001036286
Website: <http://www.mi.com/in/service/online/>

Prasid Banerjee

Nickelodeon's e-book app

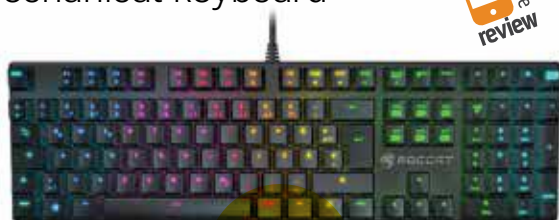
Nick Jr. Books is Nickelodeon's new kids ebook application. Currently it is only available on iOS. <http://digit.in/NickJrBooks>

**Heart powering heart**

Swiss researchers have developed a device that can power pacemakers from heartbeats. Learn more here: <http://digit.in/SwissHeart>

Roccat Suora FX

A minimalist RGB mechanical keyboard

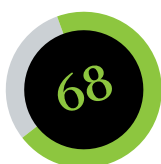


Price
₹10,000

The Suora FX mechanical keyboard follows a minimalist design with no fancy edges or whacky gamer aesthetics. Even though it's a full-size keyboard, the tight frame of the metal base keeps the keyboard confined to the length and width of the keys only, essentially taking up less space on your desk. The chassis has a textured metal frame to house the mechanical switches on top of a plastic base and we noticed minor flex. The keycaps have good quality dual-shot

injection moulding implemented but they are wobbly and few of them don't align properly. A more snug fit between the keycap and key switch would have taken care of this. The plastic base has three different slots to route the braided USB cable, for easier cable management. The Suora FX uses TTC Blue mechanical switches and as expected, they are tactile and feel closer to Cherry MX Blues. They are louder with a higher actuation force than the MX Blues. The reason is the longer actuation distance and key travel distance on the TTC Blue, as the tactile bump on the MX Blue is distinctly noticeable. The Suora FX falls around the sweet spot of the 10k price range of mechanical keyboards. While you will find better keyboards at a higher price such as the Corsair K70 RGB or STRAFE offering Cherry MX switches, do remember that this keyboard also has additional software support to tweak settings – something you would rarely find on mechanical keyboards in this range. This alone makes the Suora FX worth your consideration.

Abhijit Dey



Features	67
Build quality	69
Value	76

Specifications

Keyboard size: Standard, Numpad included; **Keyboard backlighting:** RGB LED; **Switch type:** Mechanical keyboard (TTC Blue); **Polling rate:** 1000Hz (1ms); **Key-rollover:** N-key rollover; **Other features:** Multimedia keys, toggled macro buttons, one-key profile switch

Contact

Roccat
Email: support@roccat.org
Website: <http://www.roccat.org>

Lenovo Phab 2

Large, but flawed

The Lenovo Phab 2 is the cheapest of three new phablets launched by Lenovo.

It gets a 6.4-inch, 720p panel with a pixel density of about 230ppi, which isn't very crisp. However, the screen is pretty responsive. Colour reproduction and contrast and viewing angles are all average. The phone has a luminance rating of 363 Lux, which is really low. Sunlight legibility is just enough to work with, but not ideal.

The Lenovo Phab 2 is big, but not what you'd call ugly. You will need both hands to operate the phone at most times. Lenovo has opted to go with a plastic build instead of metal. However, the Phab 2 is quite sturdy and the physical buttons feel really nice to use. It should also be noted that the device does not



Price
₹11,999

have a fingerprint scanner. The phone sports a quad-core MediaTek MT8735 processor with 3GB of RAM. It is comparatively slow, with slight framing issues while playing performance intensive games, like Injustice or Asphalt 8.

The Lenovo Phab 2 comes with 13MP rear camera and a 5MP front camera. Images taken with the phone seem consistently dull.

The phone comes with a 4050mAh battery, and performed pretty well on our benchmark tests. The phone can last you a day.

There is very little to like about the Lenovo Phab 2, aside from build quality. Even with the added price, the Xiaomi Mi Max makes for a much better buy if you are in the market for a phablet. You should consider the Phab 2 only if you are adamant on a phablet and can't spend a penny over ₹11,999.

Shrey Pacheco



Features	62
Performance	48
Design	68
Value	54

Specifications

OS: Android OS, v6.0 (Marshmallow); **Chipset:** Mediatek MT8735; **CPU:** Quad-core 1.3 GHz Cortex-A53; **GPU:** Mali-T720MP2; **Display:** 6.4 inches 720 x 1280 pixels

Contact

Phone: 1-800-3000-9991
Email: Support site
Website: <http://lenovomobilesupport.lenovo.com/in/en/>



Data Science Vs. Cancer

Scientist may soon be able to finally understand cancer with the help of big data and machine learning. <http://dgit.in/dataCancer>



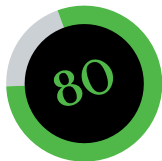
Retro-style E-moped

Chinese automobile company Munro Motor launches a new retro-style electric moped "Mumro 2.0". <http://dgit.in/RetroBike>

Bazaar

WD Blue SSD 250GB

Back in the SSD game



Performance.....79
Build75
Value for Money 84

Specifications

WDS250G1B0A

Form factor: 2.5-

inch; Cost/GB: ₹27.2;

Dimensions: 100.5 x

69.9 x 7 mm; Controller:

Marvell 88SS1074,

SanDisk 15nm TLC;

Warranty: 3 years

Contact

WD

Phone: 1800-200-5789,

Email: Website form,

Website: www.wdc.com

WD's acquisition of SanDisk has now resulted in a new lineup of SSDs aimed at the mid-range and budget segments. They follow the same Blue and Green branding for these two segments, respectively. This isn't WD's first foray into the SSD business, they'd released the SiliconEdge Blue drives about seven years ago and that was followed by the WD Black2 hybrid drive a couple of years later. And now, we have the WD Blue and WD Green SSDs with WD Black SSDs to be launched in the first half.

The WD Blue SSD makes use of the Marvell 88SS1074 controller with SanDisk's 15nm TLC NAND. This configuration isn't new as it's the same as the SanDisk X400 SSDs but with different capacities. Needless to say, this change in



Price
₹6,799

configuration will require firmware modification as well and thus the performance of the WD Blue SSD will vary from that of the SanDisk X400. Prior to conditioning the drives, we ran a few synthetic tests and the numbers came back reflecting WD's spec sheet. Sequential read

and write speeds were at 538 MBps and 520 MBps, respectively. 4KQD32 read and write speeds were at 383 MBps and 329 MBps. Post conditioning, sequential speeds dropped to roughly 270-310 MBps which is pretty decent for TLC NAND SSDs. The WD Blue SSD offers good performance given that it is using TLC NAND but is about ₹650 bucks more expensive than other TLC SSDs in the price bracket. Take that out of the picture and you've got a winner.

Mithun Mobandas

GIGABYTE AORUS GA-Z270X-Gaming 9

Supercharged enthusiast board

Kabylake motherboards have accelerated the race to bring greater diversity between motherboards in terms of features. The 200 series boards add more HSIO lanes to operate simultaneously with existing PCIe, unlocking a wider set of connectivity options. The GIGABYTE AORUS GA-Z270X-Gaming 9 being the top of the line motherboard from GIGABYTE is laden with features targeted at the enthusiast segment. Straight off the bat, we noticed the EKWB water block with G1/4-inch threading for the VRM circuitry. Every fan header on the board is rated to push 2 amperes, so you can connect your water cooling pump or high-draw air coolers to any of the headers. To aid with cooling, there are additional temperature sensors on the board and

an improved fan speed control software gives greater flexibility.

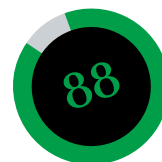
Taking RGB madness to an entirely new level, you now have RGB leds in all sorts of places – around the VRM circuitry, PCIe expansion slots, between RAM slots, and more. And if

these many options weren't enough then you do have headers to connect extra strips. On the performance aspect, RAID has been extended to both U.2 and M.2 ports. So you can club all the three ports on the board in RAID 0 for some unrealistic transfer speeds. GIGABYTE has really thrown in every single accessory you would ever need with the motherboard, and the price does seem a little high but once you factor in the cooling block, the pricing starts to make sense.

Mithun Mobandas



Price
₹61,800



Features.....90
Build85

Specifications

Chipset: Intel Z270;

Memory support:

4x4133(OC)MHz upto

64GB; LAN: 2x Killer

E2500 Gigabit; Audio:

ALC1220 7.1; SATA: 8x

SATA III; Expansion: 4x

PCIe X16(x16+x16+x8+x8);

Dimensions: 305 mm x

264 mm; Warranty:

3 years.

Contact

GIGABYTE

Phone: 022-40633222,

Email: sales@gigabyte.in

Website: gigabyte.in

Amazon acquires harvest.ai

E-commerce giant Amazon Web Services acquires AI cyber security firm harvest.ai for \$20M. <http://dgit.in/harvestAI>

**Greenest of them all**

Apple earns the title "greenest tech company" third year in a row well above Facebook and Google <http://dgit.in/GreenApple1>

Roccat Cross

For longer gaming sessions on both PC and consoles

Prolonged gaming sessions demand a comfortable headset. The Cross does well in this area thanks to the padding in the headrest and earcups enabling five to six hours gaming sessions with ease. The headset is sturdy overall, but we feel the sliders could've been built better. The boom mic is flexible enough but doesn't flex after a certain point hence, returning to a position away from the intended one.

Talking about audio performance, the soundstage is narrower on the Cross compared to the HyperX



Price
₹5,000

Stinger that we had tested previously. Our best real world test for the audio performance on gaming headsets is carried out in CS: GO matches. On the Cross, we were able to distinguish between the gunshots and footsteps simultaneously, and the heavy bass weapon noises didn't overpower the vocals. We were still able to listen to voice messages from our teammates while spraying down bullets at opponents, something we appreciate and need in a gaming headset. Although gaming headsets hardly offer good quality in music, the Cross performed well with music rich in the lows.

The Roccat Cross performs well as a gaming headset but falls behind the Stinger and VOID Wireless in terms of design, comfort and audio performance. It does include a better mic than the VOID, but doesn't match its comfort. For its price, it's a little expensive since we already have a better performing Stinger cost lower than the Cross.

Abhijit Dey



Performance.....	62
Design	70
Build quality	65
Value	55

Specifications

Driver: 50mm with neodymium magnets; **Cup design:** Circumaural, closed back; **Frequency response:** 20 Hz - 20 kHz; **Impedance:** 32 ohms; **Cable length:** 2.35m (PC), 1.2m (mobile/console); **Connector:** dual-plug 3.5 mm 3-pin (PC), single-plug 3.5 mm 4-pin TRRS; **SPL:** 98 dB @ 1 kHz; **Weight:** 185 g; **Mic sensitivity at 1kHz:** -42dB; **Mic Impedance:** 2.2k; **Signal-to-noise ratio:** 58dB

Contact

Roccat
Email: support@roccat.org
Website: <http://www.roccat.org>

Nubia Z11

Almost the best



Many would consider the Nubia Z11 the best looking smartphone of 2016. Its bezel-less display truly makes it unique and Nubia has added some bezel gestures for good measure.

However, the phone also has a Snapdragon 820 SoC, with a whopping 6GB of RAM. It's a fast phone, but not as snappy as a OnePlus 3T, presumably because of a heavier UI. This puts it in second place, behind the OnePlus 3T.

Quite surprisingly, the Nubia Z11 has a sub-par camera. For quite a while, the company has been known for its cameras. The one on the Z11, though, produces a lot of noise and colours appear bleak. Details are lacking too.



Price
₹29,999

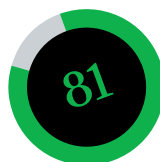
To its credit, Nubia has made the camera app faster than before, but focusing time remains high.

A better camera would have been the proverbial wild card for the Nubia Z11. The phone even stood to challenge the OnePlus 3T, but at ₹30k, one isn't wrong to expect a better camera these days, right?

The Nubia Z11 is a great looking smartphone. It is also sturdily built and feels premium too. The bezel-less display oversaturates colors a bit, but they are pleasantly warm.

Considering its performance, the Nubia Z11 is a really good smartphone for the price. A better camera may even have made it the best phone to buy in this price segment.

Prasid Banerjee



Features	77
Design	89
Performance.....	74
Value	85

Specifications

Display: 5.5-inch FHD; **Camera:** 16MP rear, 8MP front; **RAM:** 6GB; **Storage:** 64GB; **Operating System:** Android Marshmallow; **Battery:** 3000 mAh

Contact

Phone: +9180-40220900
Email: support.in@nubia.com
Website: <http://www.nubia.com/in/support.php>



Bloomlife wearable device

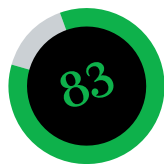
Bloomlife is worn with a strap around the belly that helps pregnant women track contractions. <http://digit.in/Bloomlife>



Xiaomi's new Mi TV 4

Xiaomi's new TV is only 4.9 mm wide and will come in three different sizes, 45, 55 and 65 inches. <http://digit.in/MiTV4new>

Bazaar



MSI Z270 GAMING M7

Packing some serious heat



Features81
Build85

Specifications

Chipset: Intel Z270;
Memory support: 4x4133(OC)MHz upto 64GB; **LAN:** 1x Killer E2500; **Audio:** Realtek ALC1220 7.1; **SATA:** 6x SATA III; **Expansion:** 3x PCIe X16(x8+x4+x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years.

Contact

Acro Engineering Company
Phone: 011-40525645,
Email: saini@smcinternational.in,
Website: <http://www.smcinternational.in>

Coming from MSI's enthusiast lineup, the Z270 Gaming M7 is laden with features but this isn't the flagship like the other two boards in this section. The board has certainly paid attention to its aesthetics with the overall black theme and the amount of RGB lighting options are sufficient. MSI has made the use of signal repeaters to ensure VR experience isn't hampered. They're calling it VR Boost and the chip is hidden underneath the plastic housing beside the PCIe expansion slots. Another peculiar thing about this board was the use of two ALC1220 CODECs for the front and rear audio outputs. Motherboards often use



Price
₹22,224

multiple audio CODECs to ensure a similar experience regardless of which output you use but they tend to mix it up with a separate CODEC given the opportunity.

This is the first board to have a shield for the M.2 Card which makes it quite interesting. The placement of the M.2 port does leave an opportunity for any mishap to occur while installing graphics cards and this takes care of that. Also, being metallic does mean that

it acts as a heatsink too. Overall, the MSI motherboard has some nifty set of features packed in along with great audio and overclocking abilities.

Mithun Mobandas

ASUS MAXIMUS IX FORMULA

Leaving no stone unturned

Leave it to ASUS to take things up a notch. Their ROG ZI70 boards are heavily favoured by overclockers and we don't see why it'll be any different with

the MAXIMUS IX FORMULA.

This is the second board with an EKWB water block that we've seen in the new 200-series lineup. The entire board is covered from top to bottom with a protective plastic plate on the front. And the back, it's steel. This does make the board slightly heavy, obviously, but we don't mind the extra weight given the durability you get as a tradeoff. The same is followed for the rear I/O panel which is completed sealed off as the back panel is integrated onto the motherboard chassis. Moreover, ASUS has done

something slightly different this time. They've given out sketches for 3D printing. So you can print your own cable combs, SLI bridge covers and fan grills, that too with their own font for

text so that you don't end up messing the overall look and feel of your board.

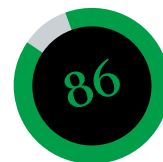
While the MAXIMUS IX FORMULA does have plenty of RGB lights, it is somewhat behind others since a good part of the board is covered with protective plates. ASUS has decided to go with Intel and not Killer E2500 like some of the competition with its premium boards. Killer LAN brings hardly any difference in most

tests except certain round trip latency tests, so it isn't a huge difference.

Mithun Mobandas



Price
₹TBA



Features86
Build85

Specifications

Chipset: Intel Z270;
Memory support: 4x4133(OC)MHz upto 64GB; **LAN:** 1x Intel I219V; **Audio:** SupremeFX S1220 7.1; **SATA:** 6x SATA III; **Expansion:** 3x PCIe X16(x16+x8+x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years.

Contact

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Website: www.asus.in



Honda NeuV concept car

NeuV is Honda's new mini electric concept car that has a funny looking steering wheel and a giant touch display. <http://dgit.in/NeuVhnda>



iOS app for Gear S2&3

Samsung has finally released the iOS app for their Gear smart watches and Fit 2 activity tracker. <http://dgit.in/samsungiOS>

EPSON WorkForce WF-100

Compact, portable and wireless

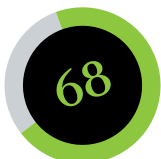
Making anything small is a tough job, especially printers. Portable printers face the same issues as many other small-sized objects – the batteries don't last long. Epson's WorkForce WF-100 claims to be the world's smallest and lightest wireless A4 inkjet printer and they aren't making a tall claim. Standing at just 61 mm in height, the WF-100 is very compact and you aren't inconvenienced with the interface as it's quite similar to normal printers. You have the standard keypad along with a few extra buttons to navigate the interface. Con-



nectivity is easy and with support for Google Cloud Print, Apple AirPrint and Epson Connect.

Certain sacrifices have to be made while reducing the size of a printer and the WF-100 is no different. Printers have a plethora of motors on the inside and they're a huge drain on the battery, we're able to print about 15 colour pages before we had to plug the unit back in, and we started printing at 100% battery life. The print quality wasn't up to par either. Given the reduced nozzle density, the prints were quite pixelated. Banding was observed across the grey steps, landolt rings completely disappeared at certain spots and we found specks of magenta across solid yellow bands. Overall, the Epson WF-100 is a pretty compact printer that's built for a few on-the-go prints. Throw in a powerbank and you can make it last a lot longer, the pricing, however, packs quite the punch.

Mithun Mobandas



Performance.....	60
Build	75
Value for Money	65
Features	73

Specifications

Nozzle configuration: 180 Black, 59 Colour(each); **Droplet size:** 3 pl; **Ink:** Black - pigment, colour - dye; **Printing resolution:** 5,760 x 1,440 DPI; **Printing speed:** 4 ppm mono, 2 ppm colour; **Interfaces:** Wi-Fi, USB, Wi-Fi Direct; **Weight:** 1.6 kg,

Contact

Epson
Phone: 1800 425 0011
Email: NA
Website: www.epson.co.in

Corsair Carbide 400C

A compact cabinet for clean setups

A beefy gaming rig demands to be shown off – and that means a transparent window on your cabinet is a must. At the same time you don't want to compromise on fundamentals like build quality, space and cooling. The Carbide 400C balancing these demands beautifully.

The variant we received had a transparent hinged side-window panel with a handle that makes it easy to open. If you intend to completely remove the panel, you can do so by lifting the panel from the mounting points. With the absence of an ODD, it offers



more open space for air circulation. The front panel is closed and lined with metal which is sturdy. For air intake, there's a wide enough gap for the fans at the front. To hide away your PSU and HDDs, the individual shrouds cover them up entirely. The cabinet also consists of a smart push and click mounting system for SSDs behind the motherboard plate.

Speaking of performance, the 400C runs around the average temperatures with the included 140mm fan on the front and a 120mm fan on the rear. Prime95 pushed the 4960X's temperature to a maximum of 60 degrees Celsius while the HD 7790 touched 63 degrees in Fur-Mark. The 400C scores well evidently on build quality and features but because of its high price and average cooling performance, it loses out on achieving a higher overall score.



Performance.....	63
Features	74
Build Quality	79
Value	45

Specifications

Motherboard form factor: ATX, Micro-ATX, Mini-ITX and E-ATX; **PSU form factor:** ATX standard (max. length of 225mm); **Front I/O:** 2 x USB 3.0, Mic in and Audio Out; **Drive options:** 2 x 3.5-inch HDD, 3 x 2.5-inch SSD; **Fans:** 3 x 120mm/2 x 140mm (front), 2 x 120/140mm (top), 1 x 120mm (rear)

Contact

Corsair
Phone: 1800-425-5464,
Email: Contact form,
Website: <http://www.corsair.com>

Abhijit Dey



Dell Canvas tablet

Dell's new Canvas is a 27-inch tablet for creative professionals and a strong competitor for Microsoft's Surface Studio. <http://dgit.in/CanvasDell>



Even babies could do this

So what are you waiting for? Take this darn 2017 Reader Survey already. There's stuff to win! <http://dgit.in/dsurvey17>

Bazaar

Intel Core i7 7700K

The key word is optimisation

Anounced back in August 2016, the Kabylake microarchitecture is a follow up to the Skylake microarchitecture which was released about a year before that in August 2015. Departing from Intel's "Tick-Tock" cadence cycle, Kabylake forms a new step which Intel calls *Optimize* – a part of their new "process-architecture-optimization" cycle. So from the get go, you shouldn't expect tremendous gains from Kabylake, it is Intel's way of ironing out the design before the entire 14nm microarchitecture is shrunk down to 10 nm manufacturing process. And this "process" step will arise as Intel Cannonlake later this year.

There have been rumours that Intel might opt for a second optimisation step in the form of Coffee Lake before moving onto Cannonlake. This second level of "optimization" is supposedly due to issues with the 10 nm manufacturing process and to compete with AMD's Ryzen. Kabylake processors bring with it, a few key changes to the platform, including the new 200 series Union Point chipset among others. Yes, that means there shall be new motherboards.

Kabylake is how Intel hopes to materialise what it calls the "Immersive Internet". The improved IGP on Kabylake goes a long way towards making this a possibility. And that's by making 4K content consumption easier, helping bring popular Esports titles to each and every one along with VR and 360 degree video playback. While Kabylake is primarily an optimised version of Skylake, there are some noteworthy improvements to the entire platform overall:

1. The new 200-series Union Point chipset is compatible with Skylake CPUs and Kabylake CPUs are compatible with the older Sunrise Point 100-series chipsets.
2. Greater clock speeds are a given. Kabylake's flagship Core i7-7700K is clocked at 4.2 GHz with Turbo Boost propelling it to 4.5 GHz.
3. Kabylake will feature Intel HD Graphics 630 which has a peak clock speed of 1.15 GHz. HD Graphics 630 supports full hardware based VP9/



Price
₹28,999

HEVC decoding, boasting of handling 4K 60FPS 10-bit with ease.

4. Kabylake will support Optane, an upcoming memory technology set to hit the markets towards the end of 2017. Another name for the same is 3D Xpoint "3D-cross-point". It boasts 10x lower latency, 3-4x improvement in read and write speeds compared to NAND and a packing density that's four times greater than DRAM.
5. While the CPU will still provide for 16 PCI Express 3.0 lanes, the PCH will now provide 24 PCI Express 3.0 lanes which is an improvement over the 20 lanes that 100-series Sunrise Point chipsets used to provide.

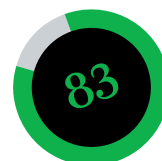
6. Interestingly, Kabylake will be the first micro-architecture since the Core i series debuted to have an unlocked Core i3 processor. The Core i3-7350K is a 2C/4T SKU with a base clock of 4.2 GHz, there's no boost on Core i3.

7. Overclocking on Kabylake has been made a lot more simpler, especially with the voltage levels. Even the instability that arose due to the AVX instruction set being called has been worked on to allow for a more stable higher OC frequency.

Performance of a different kind

With performance, the 7700K excels at a few tests but overall, the increment isn't that impressive. In CineBench the score difference was just 2 units in favour of the 7700K. However, when you move towards utilising the improved IGP you see a marked difference. Transcoding a 4K video was 9.8 per cent faster. On the 6700K with no discrete graphics card connected, we managed to get 45 FPS in GTA 5 and on the 7700K that went up to 54 FPS. We tried overclocking the CPU on air but were only able to complete benchmarks at 4.8 GHz. Overall, the CPU is the best performer in the high-end segment and we are really excited to see how the competition acts with the release of Ryzen right on the horizon. If you already have a 4790K or a 6700K, it's best to skip this one and wait for Cannonlake.

Mithun Mobandas



Performance.....90
Value for money.....75

Specifications

Clock Speed: 4.2 GHz;
Turbo frequency: 4.5 GHz; **Cores/Threads** - 4/8;
Lithography: 14nm; **TDP:** 91W; **IGP:** Intel HD 630;
IGP Frequency: 350 MHz;
IGP Max Freq.: 1.15 GHz.

Contact

Intel
Phone: 802 854 2105 280,
Email: enquiry@intel.com,
Website: <http://www.intel.com>



Fitbit acquires Vector

Global wearable giant Fitbit acquires the smartwatch startup Vector
<http://dgit.in/FitbitVector>



Next-gen EV battery

Samsung's SDI subsidiary announces new EV battery that can go 300+ miles of range with 20 minutes of charge
<http://dgit.in/SamsungEV>

AmazonBasics on-ear Headphone

Plain jane and quite bass-ic

The AmazonBasics on-ear headphone is a budget on-ear from their basics catalogue, which targets the sub-2k segment of everyday-use headphones.

There is a distinct attempt to make the headphone comfortable but that attempt only manages to do an average job. While there is padding on the headband to make the experience comfortable, it is made of basic foam that does next to nothing when it comes to cushioning. The headband, although friendly to big heads, is quite narrow and will feel uncomfortable over longer periods of time. A similarly priced headphone in this segment – the JBL T250SI – fares better in the comfort department thanks to its plush finish and a wide headband, which also has much better cushioning.



The AmazonBasics on-ear headphones do have a few things going for it in terms of design. Take for instance the fact that the cable is only connected to only one earcup, reducing the possibility of getting tangled. At this price range sound quality is not expected to be extraordinary. That being said, the AmazonBasics on-ear leaves no doubt where its priorities lie – loudness and bass. It's clear from the get go that the AmazonBasics on-ear headphone isn't aspiring for greatness. The comfort leaves us disappointed and we'd urge you to look elsewhere if that's your priority. On the other hand, the audio quality is almost at par with competitors such as the Sony MDR-ZX110 (₹990) and a few notches above the JBL T250SI (₹1099). If you are looking for an on-ear headphone that can belt out the bass like nothing else this is it. But expect no more.

Arnab Mukherjee



Features	60
Build Quality	62
Performance.....	68
Value	63

Specifications

Frequency response: 12 Hz-22,000 Hz; Drivers: 36 mm; Max Input level: 100dB/1000mW

Contact

Amazon
 Phone: 1800 3000 9009
 Email: cis@amazon.com
 Website: www.amazon.in

Lenovo P2

When battery matters



The Lenovo P2 is all about battery life. Its 5100 mAh battery lasts for a good two days. It does so using a combination of the power efficient Snapdragon 625, a Super AMOLED display and clever software.

The phone drops 2% battery each, after 10 minutes of 4K video recording or 15 minutes of heavy gaming. Idle battery drop is barely mentionable, the phone can last a full day, on idle, with 18% battery.

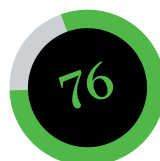
Lenovo has also made its UI lighter. It has no bloatware and is almost stock-like. The Snapdragon 625 feels reasonably snappy, but the overall performance is still slower than the Snapdragon 650-powered phones in this range.



The phone's major weakness is a poor camera. It morphs colours too often and low light photos are marred by noise. Images also lack sharpness. It's still passable under daylight, but is sub-par almost everywhere else.

Lastly, the display on the P2 is quite likeable. With a maximum luminescence of 692 Lux, it's bright enough for outdoor usage. Colours look good and they're not too oversaturated as on many AMOLED panels. Touch response is also good.

Overall, the Lenovo P2 is a smartphone for those who just cannot compromise battery life. However, the Coolpad Cool 1 and Honor 6X are both more value for money devices. They have better cameras, and the Coolpad Cool 1 is noticeably faster, with admirable battery life.



Features	90
Design	76
Performance.....	70
Value	66

Specifications

Display: 5.5-inch FHD Super AMOLED; SoC: Qualcomm Snapdragon 625; RAM: 3/4GB; Storage: 32GB; Battery: 5100 mAh; Operating System: Android Marshmallow

Contact

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Prasid Banerjee

worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



HEAD VS PARTICLE ACCELERATOR

Ever wondered what would happen if you stuck your head in a particle accelerator? Well you're not the only one.

<http://dgit.in/ParticleA>

THINKING LIKE A STARTUP

Most 'startups' start with almost no money, resources, or experience but they often come up with the most innovative breakthroughs.

<http://dgit.in/ThinkingS>



IS 'ARTIFICIAL INTELLIGENCE' MEANINGLESS?

Is 'AI-powered' just a meaningless marketing term used to create the perception of competence? What really is intelligence?

<http://dgit.in/AIpowered>

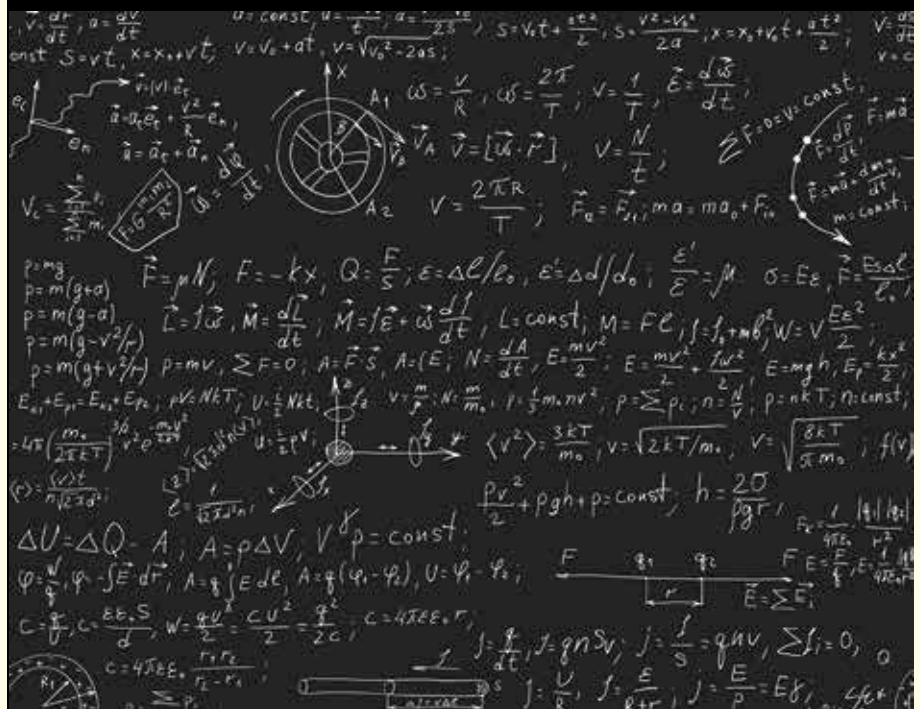
PHYSICISTS WILL SOON RULE SILICON VALLEY

More physicists are moving into Silicon Valley companies. Machine learning is changing how software is built. Silicon Valley engineers will soon push into the realm of the physicist.

<http://dgit.in/SVphysics>

[Wired Corner]

LEARNING PHYSICS 'THE FUN WAY'



The solution to finding the path between two points that takes the least time is traditionally called the brachistochrone curve. This tutorial could very well be the most interesting way to learn this physics problem. <http://dgit.in/PhyGame>



Killing the 'Dark Matter' theory

For nearly a century now, scientists have been trying to better understand this unidentified type of matter, distinct from dark energy. A new astrophysical finding from Dutch theoretical physicist, Erik Verlinde argues that Dark Matter does not exist.

<http://dgit.in/CaseDM>



Computers study health problems

Using machine learning, computers can monitor and identify genetic syndromes using facial patterns gleaned from the hundreds of thousands of images in its database. This helps doctors to diagnose different genetic disorders faster than ever.

<http://dgit.in/ComputerDR>



Solving equations in 3D

Mathematicians are not so different from biologists. Rather than studying organisms, they study equations and shapes using their own techniques. By folding fractals into 3D objects, mathematicians hope to gain new insights to complex systems.

<http://dgit.in/fractals3D>

WHY MARS IS THE BEST PLANET

About four billion years ago, the two planets, Earth

and Mars had many things in common. Craters pockmarked their faces, and volcanoes rose from their plains. However, unlike Earth, Mars wasn't so lucky, and over the course of time, Mars dried up.

<http://dgit.in/MarStudy>

OLD-FASHIONED TECH IN ROGUE ONE

From switches, cables, heavy doors, grenades,

a staff, and sniper rifles, to stormtroopers driving trucks rather than a zero-gravity trawler, critics explain why the technology in the new Star Wars movie looks like something from WWII.

<http://dgit.in/SWtechRO>

STOPPING A NUCLEAR MISSILE

North Korea is researching a variety of missiles

that, with research and development, could be converted to ICBMs. Can America defend itself against an incoming ballistic missile? Are current age Lasers-armed drones and interceptor missiles good enough?

<http://dgit.in/StopNuc>

THE FUTURE OF CARS

Electrification, autonomous driving and new

ownership models are the three new sifts that almost all the major carmakers are embracing. Here are some reasons why we should be optimistic about the future of car technology.

<http://dgit.in/CarsF>

What's the big deal about Jarvis, Facebook CEO's very own AI assistant?



Ever since the Facebook CEO published his note on Jarvis, his personal AI programmed for home, we've all been excited with the prospect of an AI interface controlling our homes. What does it mean, though, for the progress of connected AI assistants?

– By Souvik Das

Facebook's CEO Mark Zuckerberg loves coding. That's very clear from his own post, and the recent reports surrounding his latest personal project - Jarvis. At the beginning of 2016, he had written a post on how his 2016 challenge was to build a simple, artificial intelligence algorithm to run basic operations at home. On December 19, he published a note on his 100 hours of coding through the year, which he spent building Jarvis. The naming is not a mere coincidence, and Zuckerberg's intention is somewhat similar to that of Tony Stark - build an assistant that, in the truest sense, will be an intelligent, highly personal virtual helper.

Naturally, most of us have been quite excited about this recent development. But, what is all this excitement about, and what does this signify for the advancement and maturity of Artificial Intelligence and the Internet of Things? In a demonstration of IBM's Watson AI in India, Sriram Raghavan of IBM India's Research, stated, "The Internet of Things is an equally pivotal factor, and the rise in awareness and

enthusiasm surrounding IoT will be crucial in taking cognitive platforms to everyday households." So how does Jarvis contribute to this?

Who's Jarvis?

Jarvis is reportedly an artificial intelligence algorithm that Zuckerberg himself has coded. He has used the vast expanse of Facebook's programming and language tools at his disposal, and has reportedly spent a cumulative duration of 100 hours in making it. He set about with the idea of building a structured algorithm that can read and receive simple instructions in voice or text, to control simple operations.



Jarvis: Not quite this, actually

For instance, "switch on bedroom lights" or "pop up the toaster".

The AI assistant can also learn personal music tastes to deliver customised playlists, recognise voices and even enable household appliances to execute certain chores. Pivotal to Jarvis' "mind" is its server - the centrepiece of the information flow. On one hand were the interfaces from which tasks were fed to Jarvis. These included a text interface integrated into Facebook's Messenger app with a custom bot, built by Zuckerberg himself. The second was voice input, via a custom iOS application coded for Jarvis. The third was direct input of photographs and video feeds connected to Jarvis, for facial recognition.

To execute tasks provided by the input interfaces, Jarvis' intelligence depended on three AI systems - a natural language processing engine to understand context and improvisation instead of preset commands, a speech recognition engine to recognise and respond to voices contextually, and a face recognition engine that will read information off a storage vat. All

THE PHYSICS BEHIND RAINBOWS



Scientists have been trying to understand the unusual physics behind rainbows for a very long time now. What is our current understanding on this meteorological phenomenon? Here is an interesting research on the science behind the rainbow.
<http://dgit.in/PRainbow>

SENDING SCIENTISTS TO WAR



"Mental trauma is more complicated than we think" say combat veterans. "To reduce psychological casualties we need researchers on the battlefield. To truly understand the symptoms of Post Traumatic Stress Disorder, we need scientific boots on the ground."
<http://dgit.in/ScientistW>

SCIENCE IS ALL ABOUT BUILDING MODELS



Rhett Allain, a professor of physics, explains why one shouldn't dare teach science without building relevant models. A model can be a mathematical equation, a physical model, or even a conceptual model such as the photosynthesis cycle.
<http://dgit.in/ScModels>

3D PRINTING A 'GHOST GUN'



'Ghost Gun' is a popular term adopted by gun control advocates and gun lovers as well, for untraceable guns with no serial number. And someone actually 3D printed an untraceable, fully functional, accurate AR-15 semi-automatic rifle.
<http://dgit.in/AR153D>

of these three systems essentially work in tandem. The natural language processing engine was custom-built by using basic keywords, and then building on them. For instance, using the words "bedroom", "lights" and "dim" gave a specific command to Jarvis - dim the lights of the bedroom. However, when two people in the same house are using the same assistant from the same interface to give similar commands, things could get more complicated since Jarvis would not know which bedroom is being specified.

This is where the voice engine and its recognition features kicked in. Zuckerberg, in his note, stresses heavily on the importance of context when it comes to an AI, and rightly so. It took more hours to teach his AI this than any other aspect. As a result, and with more commands given to it, Jarvis gradually picked up "context" in a human way - understanding who is giving a particular instruction and responding to that very person's own usage and preference history, rather than relying on generic commands.

This is one aspect that Zuckerberg particularly elucidated on by using music. For instance, "play something light" for him certainly meant something different in comparison to the same command given

by his wife. Music is also trickier to be taught to an AI assistant, as unlike household chores, creative topics will always have more subjective responses. For this, Jarvis was taught to look at Zuckerberg's past listening history, most played tracks, and more to gauge the kind of music that he would like. The same goes for the other members of his house.

Facial recognition was used by Zuckerberg in order to recognise those that visited his house. He fit multiple cameras on his doorway and connected them to his home network to give Jarvis a live feed. When anyone would reach his place, the multiple cameras would show various angles, and as a result, make it easier to get a direct view of the person at the door. This further allowed Jarvis to better "recognise" him or her by tallying with photographs and facial patterns of Zuckerberg's trusted contacts.

While all of this, on paper, sounds fairly straightforward, it really isn't. The trick is to get all the relevant machines of a house to connect to the Internet. While the Internet of Things is on a definite rise, most of our household elements are still not connected to the Internet. Even the ones that still have individual protocols and mechanisms, which means that each speaks a different language. This is the more difficult bit of the entire task, than getting the appliances to connect to the Internet.


Jarvis is an AI-powered assistant that became a common platform - a standard protocol of sorts for everything that's connected. This is the crucial bit of Zuckerberg's experiment, as this not only exhibited the limitations of the present realm of IoT, but also stressed on the need for a common platform for smart households and IoT to really flourish. We may have

individual, connected multi-speaker units across multiple rooms, but they may still not recognise the voice and AI interface of your smartphone, which in all possibility will use a different interface. As a result, this would still require you to use different interfaces to access different appliances at home, completely belying the point of a connected home



However, it is crucial to note that this is not exactly new. Amazon Echo and Google Home were made to be similar smart home hubs for all things connected. While they do not (yet) have the power to control every single appliance that you would use at home, these are very similar foundations that have been laid down. Jarvis is not a new invention per se, but is more of a refinement that works on creating a single platform for everything, without the need for different apps to control each.

It is this very aspect that Mark Zuckerberg has addressed, and this is what Jarvis does for a living - connect the entire house, understand personal contexts, and somewhat recognise you to carry out personal tasks. Jarvis is, in a fascinatingly simplistic way, the forerunner to personal home AI assistants that our future will hold.

Oh, and he's also Morgan Freeman. 

[Blip to read the full article.](#)



Music is understandably trickier for bots and AI

HAPPY ATOM

This channel features interesting DIY project tutorials on how to make cool things (generally out of wood).



The videos are detailed and also include printable plans and drawing links so viewers can follow easily. Projects include making a light-saber, boomerang, Zelda themed swords and scabbard, etc.

<http://dgit.in/HappyAtomV>



To get all these links in one easy to read page, make sure you blip this page from your smartphone.

(PRODUCT LAUNCHES)

XIAOMI REDMI NOTE 4



Successor to the Xiaomi Redmi Note 3, the new Note 4 features a 5.5 inch display and is slimmer at 8.4mm. It will come with two storage options - 3GB RAM variant with 32GB storage and 4GB RAM version with 64GB storage.

Price: ₹10,999/-, ₹12,999/-

ASUS R558UQ NOTEBOOK



Available in two variants - one with a Core i7 processor and 8GB RAM, and other with a Core i5 processor and 4GB RAM, the new laptops feature Nvidia GeForce 940MX graphics, Full HD display and USB Type-C connectivity.

Price: ₹56,999/-, ₹44,999/-

BRAINWAVZ B100, B150



Brainwavz new B Series earphones, The B100 and B150 are priced at Rs. 4199 and Rs. 7,499 respectively. Featuring advanced Balanced Armature speaker technology, both are available with a two year warranty on Amazon.

Price: ₹4199/- ₹7,499/-

PICTURE PUZZLE



ABSOLUTE
TIMEPASS

UNJUMBLE
ON YOUR MOBILE



DOWNLOAD BLIPPAR APP ► FILL SCREEN WITH IMAGE ► BLIPP IMAGE INTO LIFE!

Top 3 YouTube Picks

Make sure your bosses don't catch you goofing off watching one of these videos playing on your screen

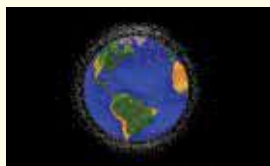


Make an electric longboard

Duration: 10:46, 7:22

This easy-to-follow, 2-part tutorial will teach you all you need to know to make your own electric skateboard!

<http://dgit.in/ELongboard>



Tracking space junk

Duration: 6:15

The space around Earth may look empty, but there's actually a whole bunch of debris zooming around our planet.

<http://dgit.in/spaceJunk>



Origin of the Google Ad meme

Duration: 5:25

What is this annoying google ad meme? When did it start? And what is that damn annoying song?

<http://dgit.in/Googlememe>



Android Wear 2.0 to
launch in February
<http://dgit.in/AndWear2>

How may I help you?

>>Why chat bots are the future> by Agnibha Bose

Introduction:

What are chatbots? Why are they such a big opportunity? How do they work? How can I create one? All of these questions are going to get answered soon.

"~90% of our time on mobile is spent on email and messaging platforms. I would love to back teams that build stuff for places where the consumers hang out!"

–Niko Bonatsos, Managing Director at General Catalyst

What is a chatbot?

A chat bot is a service, powered by rules and sometimes artificial intelligence, that you interact with using a messaging interface. The service could be any number of things, ranging from functional to fun and it could be live in many chat channels (Facebook messenger, Slack, Telegram, Vine, Viber etc)

For example, suppose you are willing to do some transaction via a bank. So you have to go to their site and perform the necessary actions. But what if you could just go to Facebook and use the same messenger that you use to talk to your friends to tell a bot to do that transaction. That is where chatbots are taking the lead. You don't have to find any links in the website. You have to just tell the bot what to do in basic language. Like any other conversation you do with a service executive but completely automated. This indeed mirrors the experience of going to the

bank branch but without any sort of human intervention. Not only does this reduce the scope of errors, but allows companies to put their man hours to better use.

What are the different example of chatbots? Some use cases please.

Apart from what is mentioned above the chatbots can be used anywhere – here are couple of examples of the same:

- Weather Bot – hiponcho – Get weather report whenever you ask.
- News bot – CNN – Ask it to tell you about something whenever something interesting will happen.
- Banking Bots – ICICI Bots – Solves some FAQ Problem
- Forever Alone's Helping Hand – Xiaoice – NLP Based bot in China with which 20 million people talk to.



*Coding Matters



*AI Poker tournament

>> Libratus, an AI, is taking on four best professional poker players in the world in 20-day match.

<http://dgit.in/AIPoker>



*Google buys Fabric

>> Google bought Fabric, Twitter's dev platform, to add it to Developer Products division alongside Firebase.

<http://dgit.in/GglTwtr>



*Libraries ready to code

>> Google to fund initiative that aims to equip librarians to deliver coding programs across the USA.

<http://dgit.in/LibCode>

Why chat bots are going to take over everything?

1. Every business is going to have a messaging bot because messaging apps will become the #1 way to communicate with other people in near future.
2. Bots will be faster than websites and mobile apps.
3. Bots are easier to use because of NLP. You don't need to find – just ask.

How can I create my own chatbot?

There are many platforms where you can build your own chatbot. They provide great user interface, drag-drop facility or an IDE to code your bot. Indian chat bot market is growing rapidly and people are engaging themselves to create more user-friendly ways to create chatbots. Below are the list of few companies those are doing great in chatbot market.

- Gupshup – Raised \$22m funding in the year 2011.
- Glomantra – Raised \$1.6m in 2008
- CogniCor – Raised \$1.07m in 2011

But can I make my bot intelligent enough to make it respond to any sort of queries?

If you want to create a simple chat bot that can do with exact word to word matching, that's not too difficult – but to understand the intent of the user and then progressing with the desired path of communication is the best way to go ahead. For this you are going to get help from various AI based platforms that are there to help you on this. If you are interested you can go and learn about

- api.ai
- wit.ai

Hubot

What is Hubot?

Hubot is a chatbot developed by GitHub, Inc to automate their everyday work that followed some specific steps to finish up. It also was a source of fun. Eventually they rewrote it and made it a open-source platform to develop bots. Today's version of hubot are written on coffeescript (that doesn't mean you have to know coffeescript to learn this) on Node.js and can be easily deployed using Heroku. More importantly hubot is a standardized way to share between everyone's bots.

Why do I need hubot?

Hubot in you company's chat room can help to perform many automation and monitoring related tasks, which you would have to do manually otherwise, undertaking steps that can be avoided with a bot. Yes, I know you can write program for that but hubot is also a program but in that you communicate via natural language – isn't that better?

Pre-requisites

As hubot is written on node.js you need to know about Node.js in a very basic level. Nothing else is required.

Getting started

You will need node and npm to install hubot. Once these two are properly installed then we can work with the hubot yeoman generator.

```
> npm install -g yo generator-hubot
```

Now from this we can create a folder and generate a new instance of hubot in it.

```
> mkdir jarvis
```

```
> cd jarvis
```

```
> yo jarvis
```

At this moment you are going to asked some question, like who is creating the bot and what adapter are you going to use. Adapters are hubots way to integrate with chat providers.

Please note – don't name your bot the 'default hubot'. This will break your application. The cause is not clear - may be some unidentified bug that hasn't been solve yet. And that's all. Nothing else is required to setup your first bot.

Now you can start up hubot by,

```
> bin/hubot
```

```
[[your_bot_name]]>
```

Now hubot comes with a set of pre-installed scripts, along with that there is a complete community of developers who are developing scripts for hubot. You can use NPM search term to search the npm registry

```
> npm search hubot-scripts [[your_search_term]]
```

Adapters

Adapters are the sets of code that allows your bot to integrate with different platforms. Hubot comes with two official adapters and quite a handful of third-party adapters including all of the popular channels.

Writing your own custom Script for hubot

Hubot out of the box doesn't do too much but it is an extensible, scriptable robot friend. There are hundreds of scripts written and maintained by the community and it's easy to write your own. You can create a custom script in hubot's scripts directory or create a script package for sharing with the community!

How to Script in hubot?

When you created your hubot, the generator also created a scripts directory. If you peek around there, you will see some examples of scripts. For a script to be a script, it needs to:

- live in a directory on the hubot script load path (src/scripts and scripts by default)
- be a .coffee or .js file
- export a function

By export a function, we just mean:

```
module.exports = function(jarvis){
```

```
/* Your bot code goes here */}
```

Each hubot script is basically a node module and the export function is bot's behaviour descriptor. In the export function you will get the bot object as a function argument. This bot object

```
jarvis> jarvis map me australia
jarvis> http://maps.google.com/maps/api/staticmap?markers=australia&size=400x400&maptype=roadmap&sensor=false&format=png
http://maps.google.com/maps?q=australia&hl=en&sl=37.0625,-95.677068&spn=73.579623,100.371094&vpsrc=0&hnear=australia&t=m&z=11
```

One of Hubot's default scripts to call Google Maps API

can be used to do various tasks. Here jarvis resembles the bot object. This object contains various utility method like,

- `hear` – will listen to all messages sent and check whether it matches before firing the callback
- `respond` – will only analyze the message if only it is directly addressed to jarvis. i.e. starts with your hubot's name "jarvis what's the weather of Kolkata".

The callback function will have a message object and using that, the user can do one of the following three things:

- `send` – Sends a message to the chat
- `reply` – replies to the user directly
- `emote` – those familiar with IRC will know this to be equivalent to `/me` – kind of like an inline status message, and will work only where such a message is supported.

Hear and Respond

Since this is a chat bot, the most common interactions are based on messages. Hubot can hear messages said in a room or respond to messages directly addressed at it. Both methods take a regular expression and a callback function as parameters. For example:

```
alfred
jarvis.hear("hello", function(jar_resp){
  jar_resp.send("Hello
.concat(process.env.USER));
});
```

This will indeed be a basic hi-hello bot, where in hearing hello the bot will respond with the message Hello {{user_name}}.

```
jarvis.respond(/make me
coffee/i, function(jar_resp){
  jar_resp.send("Making
you coffee");
});
```

The `robot.respond /make me coffee/i` callback is only called for messages that are immediately preceded by the robot's name or alias. If the robot's name is JARVIS and alias is /, then this callback would be triggered for:

- `jarvis make me coffee`
- `JARVIS: make me coffee`
- `@JARVIS make me coffee`
- `/make me coffee`

It wouldn't be called for:

- `Jarvis please make me coffee.`

Send & reply

The `jar_message` parameter is an instance of Response (historically, this parameter was msg and you may see other scripts use it

*pointers

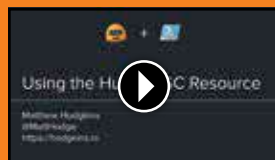
>>Interesting Hubot developer videos



*Hubot in DevOps

>>A GitHub talk on how Hubot can bring GitHub and many core DevOps tools and philosophies to developers' fingertips.

<http://dgit.in/HubDevOps>



*Hubot on Windows

>>A short tutorial on using the Hubot PowerShell Resource to install Hubot on a remote machine.

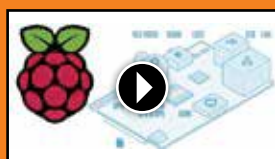
<http://dgit.in/HubPwShl>



*Custom Hubot In Slack

>> Create your own custom hubot that you can chat with in Slack that integrates with AWS.

<http://dgit.in/HubSlack>



*Raspberry Pi Chat Server with Hubot

>> Host an Internet chat server on the Raspberry Pi 2. In addition, Hubot will be configured to interact with chat room users.

<http://dgit.in/HubRbPi>



this way). With it, you can send a message back to the room from where the `jar_message` came from, `emote` a message to a room (If the given adapter supports it),

or reply to the person that sent the message.

For example:

```
module.exports = function(jarvis){
  jarvis.hear(/badger/i,
function(jar_resp){
  jar_resp.
send("Badgers? BADGERS? WE DON'T
NEED NO STINKIN BADGERS");
});
  jarvis.respond(/make me
coffee/i, function(jar_resp){
  jar_resp.reply('Yes ' +
process.env.USER + ' making you coffee');
});
  jarvis.hear(/I like
pie/i, function(jar_resp){
  jar_resp.
emote('makes a freshly baked pie');
});
}
```

The `robot.hear /badgers/` callback sends a message exactly as specified regardless of who said it, "Badgers? BADGERS? WE DON'T NEED NO STINKIN BADGERS".

If a user Dave says "HAL: make me coffee", `robot.respond /make me coffee/i` callback sends a message "Yes Agnibha making you coffee."

Capturing data

So far, our scripts have had static responses, which, while amusing, are boring functionality-wise. `res.match` has the result of matching the incoming message against the regular expression. This is just a JavaScript thing, which ends up being an array with index 0 being the full text matching the expression. If you include capture groups, those will be populated `res.match`. For example, if we update a script like:

```
jarvis.respond(/make me (.+)/i,
function(jar_resp){
  drinkType = jar_resp.match(1);
  switch(drinkType){
    case "coffee":
      jar_resp.
send("Yes Making you brazilian Coffee");
      break;
    case "tea":
      jar_resp.
send("Making you darjeeling tea");
      break;
  });
}
```

Making Http Calls

Hubot can make HTTP calls on your behalf to integrate & consume third party APIs. This can be through an instance of node-scoped-http-client available at robot.http. The simplest case looks like:

```
jarvis.http("https://midnight-train").get()
(function(err, res, body) {});
```

A post call looks like:

```
var data;
data = JSON.stringify({
  foo: 'bar'});
jarvis.http("https://midnight-train").header('Content-Type',
'application/json').post(data)(function(err, res, body) {
/* Your bot code here */});
```

err is an error encountered on the way, if one was encountered. You'll generally want to check for this and handle accordingly:

```
jarvis.http("https://midnight-train").
get()(function(err, res, body) {
  if (err) {
    res.send("Encountered an error :( " + err);
  });
});
```

res is an instance of node's http.ServerResponse. Most of the methods don't matter as much when using node-scoped-http-client, but of interest are statusCode and getHeader. Use statusCode to check for the HTTP status code, where usually non-200 means something bad happened. Use getHeader for peeking at the header, for example to check for rate limiting:

```
jarvis.http("https://midnight-train").
get()(function(err, res, body) {
  var rateLimitRemaining;
  if (res.statusCode !== 200) {
    res.send("Request
didn't come back HTTP 200 :(");
    return;}
  if (res.getHeader('X-RateLimit-Limit')) {
    rateLimitRemaining =
parseInt(res.getHeader('X-RateLimit-Limit'));
```

```
if (rateLimitRemaining && rateLimitRemaining < 1) {
  return res.send("Rate
Limit hit, stop believing for awhile");}});
```

body is the response's body as a string, the thing you probably care about the most:

```
jarvis.http("https://midnight-train").
get()(function(err, res, body) {
  return res.send("Got back " + body);});
```

The Hubot Library also supports various other things like custom listeners, creating a topic and a room where you can chat with multiple users. You can have http listeners, persist data and do a lot more stuff.

Combining all of the things we have learned till now, let us create a weather bot that will tell us the average temperature of a place that we are asking for. The key phrase for our bot will be "weather of {{place_name}}". You can further extend this code by adding nlp based parsing support and create intents based on that. Here I'm using openweathermap's api for my purpose.

```
module.exports = function (jarvis) {
  jarvis.hear(/weather of (\w+)/i, function (jar_resp) {
    var city_name = jar_resp.match[1];
    var url = "http://api.openweathermap.org/
data/2.5/weather?q=" + city_name +
"&appid=" + api_key + "&units=metric";
    jarvis.http(url).get()(function (err, res, body) {
      jar_resp.send("The average temperature of " + city_name
+ " at this moment is " + JSON.parse(body).main.temp + "°C");
    });
  });
};
```

Conclusion

The bot space is currently growing in the world and many other players are there to help you with your bot making. This is one way to make bots but other companies like Gupshup, Glomantra, Congnicor, Magicx, Arya.ai etc are helping users to make bot without having the knowledge of any language and deploy across multiple channel with the help of a button click. And pretty soon, almost every conceivable action that needs you to interact with a human being to obtain certain services - it will all be done by bots before you know it. >

*Nodes of Interest



*Official Github page for Hubot

>> Here you will find the entire source code as well as documentation for Hubot.

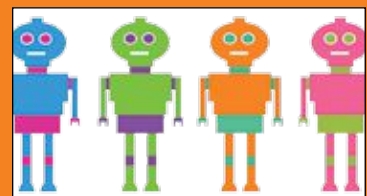
<http://dgit.in/HubotGithub>



*Chatbots magazine

>> A website that covers everything related to chatbots and platforms that use them like Slack, Facebook etc and the tech behind chatbots.

<http://dgit.in/ChtBtMgzn>



*Getting started with Hubot

>> Another Hubot tutorial that is basic and easy to follow to get you started on it.

<http://dgit.in/HubotStartrs>

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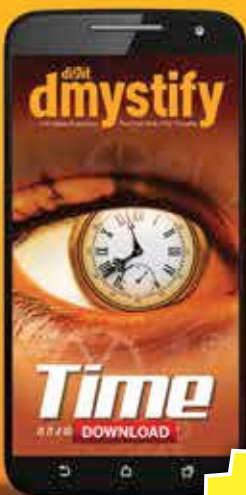
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LESSER KNOWN TIPS FOR INSTAGRAM AND SNAPCHAT STORIES

The Internet has opened up an arena that makes it possible for more number of people to create and share stories- in different formats, than ever before. But this also means that you should possess a good storytelling acumen to captivate to an audience that is spoilt for choice. Here then are some lesser known tips to make your Instagram and Snapchat stories more engaging.

INSTAGRAM



Map the story path

There is no need to consider the act of putting up an Instagram story as rocket science. But some amount of homework would go a long way in

to talk about, then the focal point could be trying out what different cafes in your locality are doing with the blend and how it compares with what they do with other

sequence in which to present the story.

Greeting: This could range from a simple "Hi, my name is.." to making a dramatic entry in a Superhero costume com-

the core content, and deliver it in style! In our example, this would involve the actual act of visiting different cafes and tasting their products.

Your personal perspective: Once the core content has been presented, it's time for your personal perspective- in this case, the best product from a café in your opinion.

Conclusion: The exact nature of the conclusion is up to you. It could be pointers for improving the quality of a coffee based product or comparison with some other product category. Or maybe you could end by talking about some other exploration you are going to undertake in the near future that you would share with the audience.



Create story storms

Essentially, you get about 30 seconds with every Ins-



Instagram and Snapchat Stories.....05

Downloading the Undownloadable07

{ Tips & Tricks has its own page numbers, and does not follow the rest of the magazine's page numbers. This is done to ensure that you can cut out and save T&T in a separate folder for later reference. }



Be it pizza, friends or pets you talk about, be sure to have a narrative arc

making your story interesting (not to mention cohesive).



Anchor the story on a single premise

A good story needs a narrative central point for the audience to focus on- too much straying and they may end up feeling a little lost.

For instance, if it's a new blend of coffee that has hit the market which you want

blends. Or it could be simply your take on the blend based on what comes out of your own kitchen. Whatever it is, before setting out to shoot the video, have the premise locked.



Follow the 5-post structure

This needn't be a cardinal rule but is a decent narrative arc to follow if you are not sure of the



Break the story down to more easily digestible bits

plete with a grand background score- if budget allows. The point is to build a rapport with the viewers from the outset.

The set up: This is where you give the viewer a primer for what's to come. For instance, if it's trying out a new coffee blend as used by different cafes, you give them this info as well as some basic information about the cafes that you are going to visit.

The central content: Now it's time to give the audience

stagram story in which you have to convey an interesting message. But 30 seconds is a very limited time frame. You can overcome this by using a story storm-which is basically a continuous stream of updates in which you present on a single topic.



Ask the right questions after a story storm

One great aspect of social media is that you could estab-



lish a one-to-one relationship with your audience. A simple way to initiate this – invite your viewers to give feedback. at the end of a story storm.



Include strategic questions

Adding some strategic questions to your stories is also a way to up the viewer engagement. For example, you could ask the viewers to pick between two different types of coffee.



Ensure that the stories get maximum number of eyeballs

Instead of trying to give you a detailed picture, let us just give you one pointer which

ever, the trick is not to rely on themes too much. Do a theme when you're a little short on story ideas and would still like to keep the shares coming.



Bring variations in content

There is no shortcut for this. You just have to know a lot about your topic. For instance, if all your stories are on coffee, aside from contemporary cafes, you can dig into the different methods of growing coffee and the use of coffee in different cultures, its history, origin and even more.

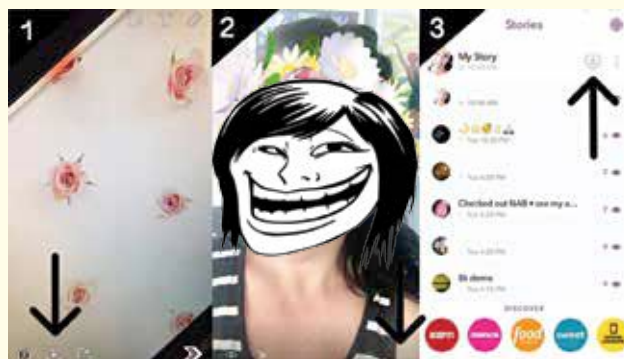


Screencap the view trail

Swiping up on the pub-

are priced based on the time frame, location and square footage that you wish to rent. These filters certainly add value to your stories-especially if the story is about a particular location where you know your viewers would be Snapping away.

download arrow(at the screen's bottom) or taking a screenshot and uploading them on other channels. In fact, you can download an entire story by tapping on the three vertical dots while you're viewing the list of the day's stories.



Download, then upload somewhere else- one way to broaden the audience



A good story deserves a large audience

would help you gain more eyeballs for your stories- You should occasionally repost one of the individual story posts that you made to your traditional Instagram account. This way, the audience will be in the loop about your regular IG stories.



Decide whether to run a theme

Having a theme is one of the more exciting methods to engage an audience-if used wisely. An example of a theme is "Benefits of coffee." You can use this theme to inform the audience about the benefits in an interesting way. How-

lished stories, you can see the number of viewers and also who they are. If a post has garnered the view of an influencer or a celeb, lose no time in screencapping their view trail. It would do good to screencap the view count for the very first and last stories of a series before they expire. Aside from going after new viewers, maintaining the count for the duration of a story series is also a priority.

SNAPCHAT



Get on-demand Geofilters

Yes, they are not free but they are fairly inexpensive. They



Get location specific filters for dirt cheap



Download the Snaps and upload them elsewhere

To take your stories beyond the Snapchat audience, you can either download the Snaps by clicking the



Add multiple filters to a single Snap

You can do this by holding down on the screen, having a finger on the current filter and simply swiping through so that you can add more.



Multiple filters, great fun!



Check for the lenses daily (and when you travel)

Apart from regular lenses, there are also the sponsored and limited time lenses which you could use to make your Snaps even savvier. Which is what makes checking for the lenses daily a good idea. Also, the selection of lenses could also vary depending on your location- so do check for them while you travel.



Truncate longer Snaps

Upload a higher number of shorter Snaps- say around 5 seconds. Title cards could be used in conjunction. For instance, by simply snapping a wall or other background, you would get a canvas on which to create a message to cue the audience to move to the next part of the story, that would maintain the flow. This would help the user keep track of your snaps.



Diversify the content mix

The last thing that an audience would like from a Snapchat account is repetitive stories- after all, it's to escape the mundane everyday that a large number of people visit social pages. So, it would be a good idea to try different content types. Here are a few to help you get started: DIY tutorials, Interviews, 'A day in the life' videos, 'How is it made' videos and Short reviews videos.

DOWNLOADING THE UNDOWN-LOADABLE

Be it movies, songs, games, books, softwares, etc, some of us might want to hoard the internet and save it on our local memory. There are good reasons for doing this because not everyone might

have access to fast internet connectivity or free unlimited bandwidth all the time. Here are some tricks to help you easily download everything!

DOWNLOADING VIDEOS/IMAGES/AUDIOS

Most online video sites operate on streaming algorithms, which means the videos are many times not available for random access from disk or memory. These websites offer ads and will control when/how you watch their content. Although, downloading videos from these services is breaking the rules, there are many ways you can do so. And as long as you're not re-uploading someone else's work or taking self-credit, it should probably be fine.

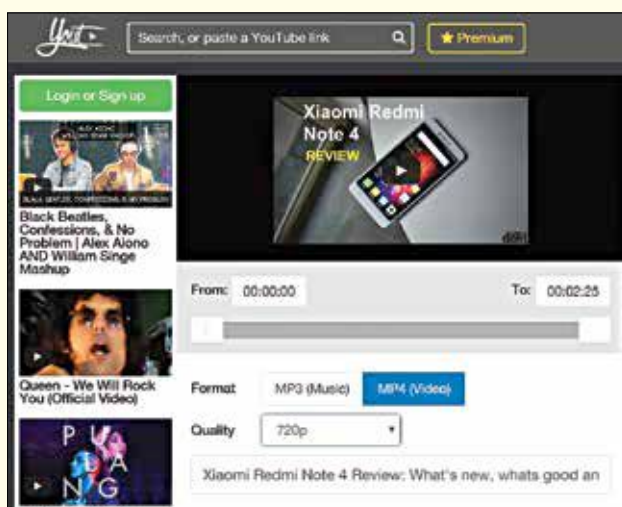
On a side note, it is perfectly legal to record TV shows on a pen drive. How should this any different?



Download YouTube videos/audio

If you watch YouTube on your smartphone and you have the app, Google already allows you to save your videos for offline viewing. In the app, when playing any video, you will see a download icon on the right below the video description. And you can save any videos you want by simply tapping on the download icon, choosing your desired quality and selecting 'OK'.

If you are on a desktop or mobile and you're streaming YouTube from your web browser, there are many interesting ways on how you can download videos or extract just the audio(Mp3) and save them to your local drive/memory. The simplest and coolest way you can do this is by simply removing three letters from the video



Yout lets you download any video or its audio

URL. On your web browser, play the particular YouTube video you want to download. On the video URL, (which will probably look something like "https://www.youtube.com/watch?v=tWraYkX3KLI") remove the letters 'ube' from 'youtube' and hit 'Enter'. It'll take you to a new website called Yout.com and you can download the videos or just the audio as an mp3 file for any video from YouTube by selecting the right option



Download Facebook images/videos

Similar to YouTube, on mobile, the Facebook application also has the feature that allows users to save videos

for offline viewing. Play that video you want to download and select the three-dot menu. From the list of options, you have to select 'Download'.

However, if you might be using Facebook from your web browser on a desktop, or you want to download the video file, so you can transfer it to your phone later, you can easily do so by following the steps - First, determine if the video is hosted by Facebook and if it is, 'Right-click' on the video and select 'Copy link address'. Open a new tab and search for 'downvids.net'. Paste the video link, select the video format and hit download. This site works for many other video sites and so you can even use it to download from YouTube or others.



Sites like downvids make it easy to download videos from sites



Download Instagram images/videos

There are plenty of apps that allows you to download Instagram images and videos to your smartphones but the ones we recommend are 'Video Downloader for Instagram' by InShot Inc. for

addicted to social media. It is a commercial freeware with a built-in tool for grabbing online media and also has a BitTorrent client.



Grab online media

With Torch browser, you can grab and download any audio



DreDown - one stop destination for social media downloads

Android and InstaTV for iOS. They are both simple, hassle free applications that do exactly what is needed.

If you are on a computer, check out the next tip to download from Instagram.



Download videos with DreDown

DreDown.com is a website where you can download videos of other social websites for free. All you need is the video's URL, paste it on their site and DreDown!. Currently, the website supports videos from YouTube, Instagram, Facebook, Twitter, Vine, Vimeo, DailyMotion, Keek, Vevo, Vk, Tumblr, Flickr, RuTube, Howcast and MetaCafe with Mp3 downloading support coming soon.



Downloading media with Torch Browser

Torch is a web browser based on Chromium and specifically designed for anyone

and video with a single click. When you play any audio or video online on Torch, there is a media grabber tool integrated on the browser that gets active and you can download the media by simply clicking on that tool.



Torrent on Torch

Torch browser also has a built-in torrent manager using which you can download any torrent files. Simply turn-on the Torrent icon on your Torch browser and you are good to go.

DOWNLOADING PORTABLE DOCUMENT FORMAT (PDF) BOOKS

Depending on your internet browser and settings, PDF files are usually automatically downloaded when you open them on the web. And you will probably get a pop-up for saving the PDF file. However, if you don't,

downloading any PDF is easy. Once you open the document move your mouse cursor to the top of the document or press the Alt key to reveal the toolbar above the document. On the toolbar, you will see the download icon.



Download free book PDFs

Unless a particular book is made available for free by the original publishers or the author itself, downloading paid books for free is actually not legal. With that in mind, however, if there is a free book you want to download, here is an interesting trick on Google that you can try out.

On the Google search, type out "intitle:index.of pdf" followed by the name of the book you are looking for. Using this hack you can easily find your books avoiding the hassle of going through different websites and looking for them.

Another interesting trick you can try is by using the Google Advanced Search. To do this, simply go to settings on Google, then 'Advanced Search'. Type out the name of the book you are looking for and change the file type

to PDF, then select 'Advanced Search' and your book should magically appear on the first search result.

BULK DOWNLOADING

Bulk downloading is very handy when you need to download multiple files from the internet. Here is a list of a couple of tricks, websites and software that you can use to manage and organize your downloads all at once instead of having to do them one by one.



Download an entire YouTube playlist in one go

Downloading an entire playlist from YouTube can be a pain if you don't know how to do it right. Say you are trying to download a particular step-by-step workshop from YouTube and it has over 15 videos. So instead of downloading each one of them individually, you can try out Youtube Multi Downloader Online that allows you to organize and download an entire playlist all at once. To do so, play the YouTube playlist, copy the URL and paste it on the web-



Bulk image downloader saves all images on a webpage



Download entire playlists with the help of YouTube playlist downloader

site. It will automatically list out all the different videos and you can download them all at once. It even allows you to change the video quality to your preference, unlike most other free websites.

SOFTWARE BULK DOWNLOADING



Use Ninite for Windows applications

Ninite.com is a 'package management system offering' that lets you download popular windows applications in a bulk and automatically install them for you. This site is very useful for installing fresh software on a new/refreshed computer. All of the freeware are safe and always up to date.

Ninite also offers few developer tools, security software, utilities etc.



Use FlashGet for files

Specifically designed for Windows, FlashGet is a free download managing software that can organize and bulk download any software, movies, music and even games from the internet. It supports different files as well as torrents. It uses MHT (Multi-server Hyper-Threading transportation) and splits your files for faster downloads. There are several ways on how you can initiate your downloads. The simplest method is by drag-dropping any content URL to the application. For downloading images or other

types of files, hold both the Ctrl and Alt key down and click on the content you want to download. FlashGet will automatically get the link to anything that is clicked.

BULK IMAGE DOWNLOADING



Use Bulkr for Flickr

Bulkr is a lightweight Windows software using which you can download any number of images from Flickr. Bulkr provides you 'Search options' using which you can search/sort for interesting, relevant or Recent results. You can even search for photos from individual user profiles or groups and even filter images by dates.

When saving the image, you get four different formats namely, small, medium, large or original. And you can even add the metadata of the online image, for example, the title, tags, description and geotags.

This could be a very useful feature if you are looking for entire albums from Flickr related to a specific topic

DOWNLOADING ENTIRE ALBUM/DATA FROM FACEBOOK

If you are looking for a way to download entire photo albums and videos from Facebook, there is an interesting way you can do that. This method will not only download your photos and videos but your entire Facebook data. You can do it by going over to your Facebook settings > General > Download a copy. Follow the instructions and you will get a copy of your entire Facebook archive.



Use Bulk Image Downloader

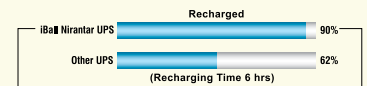
Bulk Image Downloader is one of the best image downloading software that can automatically detect, download and save images and videos from web galleries. Simply open any image gallery, copy the link and paste it in the software. It will automatically queue up all the images and you can easily select whether to download the entire gallery or select particular images. Using these tools, and everything mentioned in these tips, you should be able to download almost anything you need from the internet. **d**



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High Performance.



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ba11 NO LOSS. BOSS!

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Workshop

Take a shot at mastering the browser of the future in this workshop as we show you how to use Opera Neon.

**\$100,000 Headphones**

The Onkyo Diamond Headphones are pair of headphones with 20 karat diamonds and will cost \$100,000 <http://digit.in/OnkyoD>

Notorious multi-function printers, overclocking woes and the iconic Nokia 6600

This month we try to find workarounds for printers that won't scan with empty cartridges, finding a replacement adapter, and how cyber cafe owners can have a hassle free setup to restore their machines.

Q No ink, No scan

Hi Digit,

I have a Canon Pixma MP287 printer. The cartridge inside is empty and whenever I try to scan my paper on it, it displays a warning message saying the cartridge is empty. This doesn't allow me to scan anything. If there are any workarounds to solve this problem, please reply as soon as possible. Thanks in advance and wish you a Happy New Year.

– Rahul

A Hi Rahul,

Looks like you aren't alone as several other owners and users of all-in-one and multi-function printers are facing the same issue. Many manufacturers have locked down their machines to operate the scanning feature only when your cartridge is filled with enough ink to print. We discovered a few workarounds that you can try. Connect your printer with an ethernet cable in the same network of your house and open the web interface for the printer using the IP address assigned to it. You can probably should be able to scan here. If that doesn't work, one popular method used is to hold down the reset button for five seconds that should clear out any "empty cartridge" error from the printer. If both your cartridges are empty, you might have to do this



method twice. Another suggested method is navigating to Control Panel > Devices and printers or Scanners and printers > Select your printer and hit Scan. That should do the trick for your scanning needs.

Q Internal to external

Hi, I'm trying to convert my internal hard disk to an external drive. When I'm trying to format it, my PC slows down and hangs. Please tell me how should I go forward with this. Also, the file type has changed from NTFS to RAW. Please help me out.

– Kanhu

A Hi Kanhu,

Your PC slowing down and hanging could be because of a high number of assorted files already stored in your hard drive. They usually take a lot of time to delete and sometimes due to high load, your PC might start lagging. Try to format your hard drive on another PC by inserting the hard drive in an enclosure and connecting it via USB to the other machine.

Before going forth with the following process, we would suggest you to run a `chkdsk` command from the cmd prompt with administrator privileges. Enter the command "`chkdsk /f X:`" (without quotes) where X is the partition letter. If this doesn't work, try converting the format directly with the command "`convert X: /fs:ntfs`" (without quotes) and hit Enter. Then type M (the name of the partition or disk you want to convert to NTFS) and press Enter. Although this process is

only required if you want to recover the data in the hard drive. Otherwise, with a successful format, you'll be able to change the format right there.

Q A mini problem

Hi Digit Team,

I hope you are doing well. Coming to the point, I have a Connoi mini-PC (Model: NTP2500HN-3311) powered by an Intel Atom processor (2GB RAM & 250GB HDD). Few months back while shifting my house, I lost the adapter to it. Since it was working efficiently and served my day to day activities appropriately, I am not ready to replace it. Can you please suggest suitable adapter to it? Meanwhile, I have sent an email to Connoisseur electronics a month back. But didn't receive any response. Thanks & Regards.

– Chetan



A Hi Chetan, we couldn't find the exact model you've mentioned but the mini-PC listed on their website displays a 90W AC/DC adapter. You'll still need to check your device and find whether they have listed down the ratings. Next, all you need to do is buy an adapter with the same power output and pin.



Notch motion sensor

Notch is a new 3D motion tracking system with an accelerometer, gyroscope, and compass weighing less than 10g. <http://dgit.in/notch3D>



Stuck waiting?

Here's something you could do with just 5 minutes of your time
<http://dgit.in/dsurvey17>

Q&A

Q Nostalgia value

Hello Digit!

I have a Nokia 6600 phone from 2003. The phone was performing perfectly well until the previous week. But suddenly the five-way joystick has started giving unwanted responses all by itself! Could you please suggest me a way to get this fixed in the long run?

– Sujay

A Hello Sujay. We are actually surprised that the iconic Nokia 6600 has lasted you for such a long time. The five-way joystick is housed over a micro-switch which is probably on the verge of completely losing its durability. So you will need to replace the micro-switch. But there could be problems on the main board as well that could be causing the issue. Your best option would be to finally switch to a smartphone, on the current mobile platforms.

Q Missing EUI notifications

Hi Digit, after upgrading my phone to a newer version of EUI two times after its purchase, I fail to receive whatsapp text notifications unless I open them. Help!

– Suraj

A Hi Suraj, you won't receive notifications for any application if your background data is switched off. To verify, you need to head over to Settings > Data Usage > and then uncheck restrict background data. Since you're using a custom ROM, they usually are packed with battery savers that automatically disable background data so you should uninstall them or manually enable background data. Also, if you're logged into WhatsApp Web, you won't receive notifications on your phone. You can also try the regular data and cache clearing technique and uninstall/reinstall as a last stand. If nothing works, you should post in the errors to the creator of the custom ROM.

Q Bad OnePlus!

Hello Digit team. I'm currently using a One Plus 3 smartphone and it creates problems while downloading games using Wi-Fi. The game download either

shuts down or the download lags and pauses on its own. I need your help. How do I solve this issue at the earliest? I hope you will extend your best efforts.

– Vedang



A Hey Vedang, this issue sounds more like a problem in your internet connection. Looks like your internet can't sustain a continuous download for a long time and hence it shuts down on its own. If this is the case with every game you try to download, then you need to consult your ISP. If this problem is specific to just one game, then the issue could be from the third-party download server. Rarely, this issue arises from a faulty download manager, but again that would mean none of the bigger sized downloads will be possible. Your first step would be to check whether you can download the game from a different internet connection to help you determine the problem.

Q Overclock it

I just got a new NVIDIA GT 610 and I'm now playing GTA V but it's lagging. Asus GPU Tweak shows a core clock speed of 810 MHz and a memory clock of 1300 MHz. I want to know whether I can raise the clock speed without any problems. For example if increase from 810 to 1010 & memory clock from 1300 to 1400 will there be any issues. The other specs include an i5-3470 processor and an 8GB HyperX Fury RAM.

– Aditya

A Hey Aditya, we won't be able to give you the exact stable clock speeds since it highly depends on the configuration of your system. The best way to check for stable speeds would be start from the base clock and increasing at

increments of 50 MHz using any overclocking tool. This way you can determine easily which is the best and stable clock speed to achieve more performance from your GPU. If you're still facing lags in games such as GTA V, then you should pull down all the graphics to the lowest setting in order to render higher frame rates.

Q Deep Freeze

Respected,

I am regular reader of Digit for the last 3 years. I really love the magazine. Your solutions work perfectly for me. I have cyber cafe with 15 desktops, all having different configurations. I have problem with customers who test their downloaded software in my cyber cafe. For the last 13 years, I used deep freeze as a solution for this problem. But recently police told all Cyber Cafes to not use deep freeze as they want user history to be preserved. And this is where I get troubled as my machines overflow with such programs which users install. I try to use Windows restore option but it takes time & sometimes it fails to restore. So please suggest any solution for this problem.

- 1) I want programs to be restored.
- 2) If anyone installs extra program it will automatically be uninstalled.
- 3) Keep history of users.

I have Windows 7 32-bit Ultimate installed on all machines. All with minimum 2 GB RAM & 250 GB HDD.

– Prasad Bagade

A You can try installing Linux on machines to prevent users from installing Windows applications altogether. If Linux doesn't work out for you then you can use Group Policy Editor to prevent users from installing any apps on your machine (<http://dgit.in/Block7810>). This will ensure that your user history is retained but applications will not be installed. For any apps to be installed you'll have to sign into the administrator account or you could have one computer in your cafe set aside for just installing new programs. That should solve your overall issue.



Mall cop Robot

Knightscope, the security robot startup is launching a "mini-IPO" for mall security. Learn more here: <http://dgit.in/MallRobot>



Blue wireless headphone

Microphone maker Blue debuted their first wireless headphone with built-in amp and noise cancelling. <http://dgit.in/blueWireless>

Guide to Opera Neon

Here's how to use the browser of the future

Arnab Mukherjee
arnab@digit.in

Everywhere you look, there is a radical reimagining of the way we perceive technology. Cars are driving themselves, homes are maintaining themselves and in general, everybody is busy offering you their vision of the future - be it through concept cars, concept laptops or even concept toothbrushes and hairbrushes. But most of these hail from the hardware realm and when it comes to software, such thoroughgoing changes are fewer in number. When it comes to web browsers however, Opera seems to have taken the mantle with its new concept browser, Neon.

The web is not what it used to be. Formerly a mostly-text platform, it now hosts media and applications that fail to be presented optimally in the dated environment. With the goal of building a browser for the future, Opera has launched Neon, a concept browser similar to the idea of concept cars - it's not entirely practical yet, but gives a glimpse of where we are headed. Built on top of the Blink physics engine, it offers a host of new and interesting animations and features, and we're going to show you how to use them.

Where to get it?

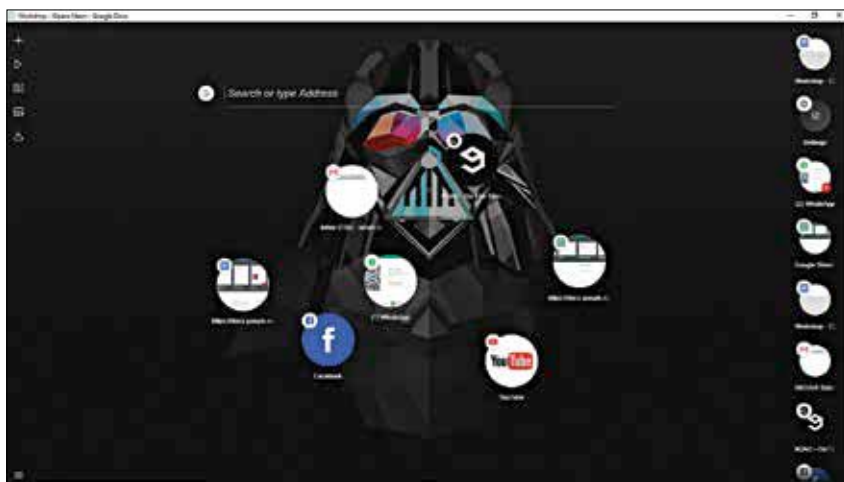
Go to <http://dgit.in/OpraNeon> on Windows or Mac and download the installer. Once it has downloaded, simply run the installer file and wait for the installation to complete. The browser should open automatically once the installation is done.

A fresh start

The start page in neon makes an effort to appear less intrusive by using your wallpaper as its background. There isn't much you can do to change this right now, unlike themes in Firefox and Chrome. The bubbles at the centre of the page below the search bar function kind of like bookmarks, by listing

all your tabs are added. This area is feature packed.

If you have entered a search term, the default search engine for that is Google. To change that, the easiest way is to right click on the Omnibox and Click 'Edit Search Engines'. You will be at the 'Search Engines' settings window where you can add additional search



You never lose touch with your cool wallpaper

your favourite pages (It starts off by showing you pages that you are likely to visit).

Omnibox

Once you're done taking in the interface visually, it's time to start browsing. Opera neon brings the URL to the forefront in the Omnibox - which is equivalent to the browser URL search box but much more prominent. Type in your URL or search term and hit Enter. A new window will open with a bubble shaped tab header appearing in a column on the right. This is where

engines, and remove default ones. To add a new search engine:

- Type the name in the first box
- Type the keyword to trigger it in the second box. This is the keyword that you will have to type before the search term for the search engine.
- Specify the search URL for the engine in the third box with % in place of the search term.

An alternate way to do this would be to click on the hamburger icon found on the lower right corner of the home screen>Click on settings>Under 'Search' click on Manage Search engines.

Bellus3D Face Camera

The Bellus3D Face Camera is a mobile attachment device that lets you take super accurate 3D selfies. <http://dgit.in/Bellus3D>



YouTube Super Chat

Super Chat is a new tool on YouTube that allows viewers to pay to pin comments on live streams <http://dgit.in/SuperChat>

Workshop

Managing tabs

Opera claims that the tabs work like 'gravity' with the most frequently used ones floating up the column. While we didn't exactly observe this happening, there are still some pretty interesting things that can be done with this. For instance, to add a bookmark, you need to click on the tab header and drag it to the central area where it lodges in its own custom place (decided by the browser each time you add a new bookmark). The tab icon and the bookmark icons reflect the website's logo, or the primary art of the respective page, with the small brand icon, i.e. the 'favicon', overlaid on the upper left quarter of the circular icons.

In the tab itself there are a few interesting and thoughtful features. On top, where you have the title bar for the tab - you can copy the URL with a single click. To do that, Click on the title for the URL to display. On the right of the URL you will see a cross (that will clear the URL) and a copy icon, that will copy the URL. On the extreme right, to the left of the minimize icon, you have a lock icon. Clicking on that gives you a drop down that will show you all the security information pertaining to the site including cookies and permissions. You can also Allow and Block individual permissions.

Split screen

One of the first cool things that you can do with the tab column is drag the tabs into split screen view. To do that, first click on a tab bubble to open it. Once that is done, click on another tab bubble and drag it onto the open tab. You should see the title bar drop down and two visible options above the tab - 'Show in left view' and 'Show in right view'. You will have to drag the tab to either option to, well, get either result. Once the tabs are in split screen view, you can click on the space between them to adjust their width in proportion to each other. Also, clicking on either tab bubble will minimize both. If you need to minimize one individually, click on the minimize button on the title bar. Unfortunately, you

cannot tile more than two tabs in this manner, and any further tab you to add on top of this will replace the tab on the side you choose.

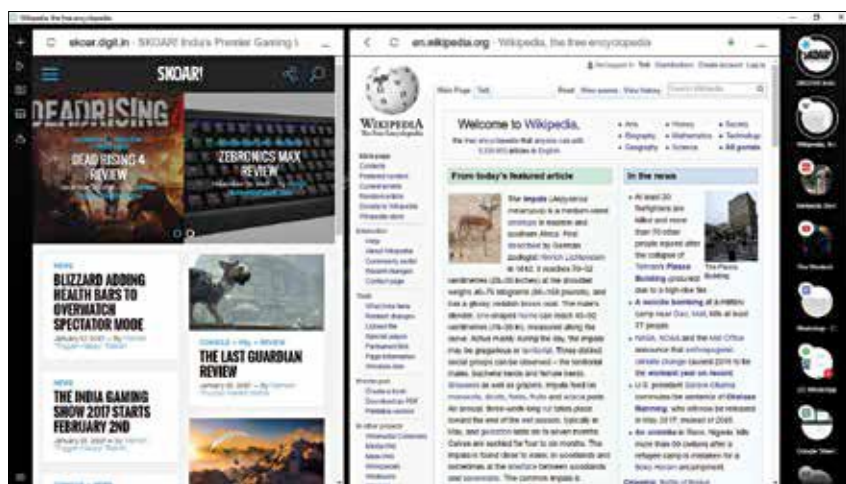
Sidebar

On the left side of the home screen you have the sidebar with five buttons.

- **New tab:** Clicking on this will simply minimize all your tabs and put the

the tabs currently open in front of you. Simply click and drag to save a snap to the gallery, which is where we go next. The Snap tool does not let you capture any area beyond the tabs or between them.

- **Gallery:** Any snap that you take in the snap-to-gallery mode will show up in the gallery. From here you can simply click-and-drag the snaps




The Split screen feature only allows two tabs at a time

- focus on the omnibox. From here you can open a new tab the usual way.
- **Videos:** This section has some really cool features. If any of your tabs has a video inside it that is controllable, this section shows them all in one place in the form of - you guessed it - bubbles. They can also be popped out as a floating video player. To do that, hover the mouse over the bubble, click on the pop-out button above the pause button. You will now see the video in a floating box that can be dragged around the interface. It also lets you pause, seek and close the video. Closing, however, does not close the tab and that has to be done from the tab column. You can also see the how much of the video has played in the form of a progressing green perimeter around the bubble for that video in the videos section.
- **Snap-to-gallery:** This is Neon's very own snipping tool. Click on the camera icon to enter snap mode. This lets you select an area within

to any open tab to place them, say inside a doc or into a chat that supports image pasting, like WhatsApp web. You can even drag the snap outside neon to another browser or document. Sadly, you cannot directly save the image in any way and to save it, you have to drag it to the tab column on the right and drop it, which will open it in a new tab, which will then allow you to right click on the image and save it.

And more...

Opera will be bringing in more of Opera Browser's features to Neon but as of now, features like native ad-blocking are not yet in. On the other hand, Opera might be using Neon as a sandbox to see what works and then implement the same in future releases of Opera Browser. Also, there are quite a few additional areas like the inbuilt task manager that lists all the processes running in the browser and the developer console which are beyond the scope of this article. 

From the labs

From digital stethoscopes to AI doctors, diagnostics is going places and saving lives with a good helping of technology thrown i

Ransomware on rise

More than 10,000 website databases have been taken hostage in recent days by attackers demanding big ransoms <http://dgit.in/Ransomw>

Is there anybody out there?

From the dark side of the moon to the eternal vastness of the universe, are we on the verge of contact?



Abhijit Dey
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On the night of August 15, 1977, the Big Ear telescope – located at Ohio State University, USA – received a strong radio signal from the Sagittarius constellation, which would eventually create radio astronomy history. Constructed in 1961 and functional since 1963, the Big Ear radio telescope was part of the Search for Extra Terrestrial Intelligence (SETI) project. Since the project began in 1973, it ended up being one of the longest running SETI projects ever, until it was shut-down in 1995. Astronomer Jerry Ehman who had volunteered in analysing the large amounts of data – collected from extragalactic radio sources – was in for a surprise while he was studying the data on printed perforated paper. The radio data was so startling for him that while encircling the anomalous data points, he commented “Wow!” on the side. This is how it popularly came to be known as the “Wow! Signal”.

Fast forward to the present time, and we’ve received a lot of such mysterious signals from the infinite corners of the cosmos. Although we are yet to witness something as strong and spectacular as the Wow! Signal, the source remains a

mystery to this date. Astronomers have been able to roughly pinpoint the galaxies and constellations from where these unknown signals have originated. But we haven’t found success in decrypting these signals, if at all we consider it with high hopes that these mysterious signals are actually attempts to make contact by extra-terrestrials. Or were they mere radio bursts emitted from exploding stars or other celestial bodies? That’s what scientists and astronomers are trying to review.

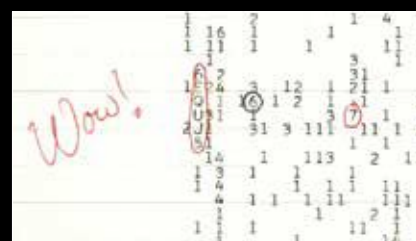
But what are these signals? How are they different from the ones being transmitted across the planet? Who takes responsibility of reviewing through the endless number of signals received by our telescopes and satellites? We try to delve deeper into these questions.

All about space signals

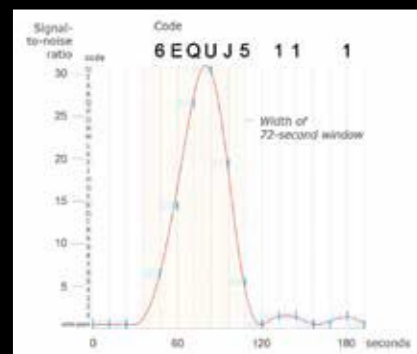
We’ve been using radio waves operating at different frequencies primarily as a channel for communication within the planet and beyond. When it comes to interstellar communication, we’ve long known that the electromagnetic wave the best medium to adopt because of its resistance to any form of interference and dispersion. Since this is the universally accepted form of communication we already use, our best opportunity

to establish contact with any extra-terrestrial source had to be accomplished using radio waves.

Emitting radio signals at unknown frequencies will definitely go in vain hence, a favourable frequency region had to be decided. A paper titled “Searching for Interstellar Communications” published in 1959 by Cornell physicists Philip Morrison and Giuseppe



The Wow! Signal sequence



The plot of the Wow! Signal's intensity versus time



Anything but that!

If you don't take this survey we're going to use Kanye lyrics in all articles from now on <http://digit.in/dsurvey17>



Bloom XB-1 airline

American startup Bloom plans to bring supersonic flight back to commercial passenger air travel with their new XB-1 <http://digit.in/BloomXB1>

Space Age

Cocconi speculated this particular frequency region (read here: <http://digit.in/SFICPaper>). Every single body in the universe consisting of mass generates radio waves, including us (human beings). Hydrogen is the most abundant element found in the universe, implying that most of the inhabitants must be familiar with it. Neutral Hydrogen emits radio waves at a frequency of 1,420 MHz. Assuming an equivalent level of intelligence, extra-terrestrials trying to establish contact with fellow inhabitants of the universe should have developed receivers capable of picking up signals in this range. Although a signal from a source might originate at the speculated frequency region, it could suffer attenuation while traversing due to several factors. To eliminate these factors, a signal with radio waves around the 1,420 MHz region (plus or minus 300 KHz) is to be considered as well. The paper was published almost a decade before we detected the Wow! Signal, which gave the paper more credibility. The reason was the two different reviewed data values of the signal's frequency – 1420.36 MHz and 1420.46 MHz – was close to the speculated one.

While trying to collect deep space signals, it is also necessary to eliminate known sources of signals which are not extra-terrestrial in nature. As already mentioned above that everything in the universe emits radio waves, sources such as planets, asteroids, satellites, aircrafts, space crafts and even ground-stationed transmitters have to be ruled out. In scientific terms, ruled out doesn't imply eliminated but something which has a low probability. Consider them as a checklist of sort including external factors such as gravitational lensing (a phenomenon that causes signals to bend around objects resulting in a brighter images) and interstellar scintillation (the twinkling effect). If these factors are ruled out, then the most probable cause of the deep space signal has to be from an foreign source.

The Wow! Signal lasted for 72 seconds generating an alphanumeric sequence "6EQUJ5" denoting the intensity variation of the radio signal. One of the instances in the Wow! Signal was almost 30 times stronger than normal deep space.

SETI

Most of the research and study to evaluate these mysterious signals are being led by SETI. A highly popular and old non-profit organisation, the SETI institute was incorporated in 1984. It mainly consists of three primary centres – Carl Sagan Centre, Centre for Education and the Centre for Public Outreach. The Carl Sagan Centre is dedicated for studying life in the universe, the Centre of Education deals with astronomy, astrobiology and space science while the Centre for Public Outreach takes care of the institute's general science radio show and podcast – Big Picture Science, and "SETI Talk" which is their weekly series.

Detection of signals are carried out using ground-based telescopes located at several observatories across USA. The main instruments used includes the ground-based Allen Telescope Array near San Francisco. They also employ ground-based optical telescopes like the Shane telescope at Lick Observatory, the W.M. Keck telescopes and IRTF in Hawaii, and the Very Large Telescopes in Chile. Research is also carried out using space telescope facilities such as the Hubble Space Telescope, the Spitzer Space Telescope and the Herschel Space Telescope.

Along with searching the universe for extra-terrestrials, SETI also consists of a project called Active SETI (Active Search for Extra-Terrestrial Intelligence) to send messages to intelligent life forms through radio signals. It's also called (METI) Messaging to Extra-Terrestrial Intelligence but the distinction lies in SETI doing only the searching of message whereas METI is more concerned with the creation of messages. We'll be talking more about Active SETI in the last section of this article.

Recent developments

So, what has suddenly piqued our interest into one of the most significant event in radio astronomy? For start-

ers, this year we'll be celebrating the 40th anniversary of the Wow! Signal while anticipating a similar event of such a scale to occur once again. Radio astronomers have been riddled with mysterious short-bursts of radio waves or fast radio bursts (FRB) coming from a particular source, for over 10 years since they were discovered in 2007. Fast radio bursts are sudden high-energy bursts



The Hubble Space Telescope is used for SETI research

of astrophysical phenomenon whose origins are unknown. These bursts last for only a few milliseconds and their pulse dispersion measures are much larger for sources present in the Milky Way. The energy generated by them is immensely high, close to the amount of energy generated by the Sun in an entire day. Not all of these FRBs are detected since some of them are so quick that the current devices have a hard time picking them up. Early 2015 is when we actually were quick enough to witness them happening in real time.

There have been a total of 17 FRBs among which one of the signals has been repeating in a sporadic pattern. The first 10 of these signals were detected in March, 2016 but these bursts had actually occurred in May and June 2015. Among the 10, six of them were recorded by the Arecibo radio telescope in Puerto Rico and four of the remaining signals were detected over the course of the next month. Due to a discovery found in older data, the team looked further back and found that a signal was first detected in 2012, making the total count of 11. These FRBs were the first ever ones to be recorded coming outside



Opera launches Neon

Opera Neon is a new experimental desktop browser with bubble icons replacing your taskbar and bookmarks bar. <http://dgit.in/OperaNeon>



HTC U and U ultra

HTC's new U flagship phone has two screens, an ultrapixel camera and a new AI assistant preloaded. <http://dgit.in/HTCUltra>



FRBs have been detected to be originating not just from the Milky Way but from across the universe

the Milky Way since the rest of them originated from our galaxy itself. The reason why these particular FRBs are being discussed as a possible extra-terrestrial attempt is the repetitive nature of the signal. In fact, the signals could be emitted from new-born stars with huge magnetic fields (magnetars), supernova remnants, or in fact aliens trying to contact us. Recently, a team of researchers from McGill University in Canada discovered (read here: <http://dgit.in/FRB121102>) six more such radio bursts originating from the same source, bringing the total to 17. Five of the latest signals were detected with the Green Bank Telescope at 2GHz, and one at 1.5GHz with the Arecibo Observatory. The current hypothesis for the source of the FRBs originating from the Milky Way is the short-lived radio energy emitted during the collision of two neutron stars that results in the formation of a black hole. But since the radio bursts in FRB 121102 have displayed a repetitive pattern, the current hypothesis doesn't hold. Instead, the new hypothesis suggests a newly formed neutron star rotating with enough power to emit strong pulses at intervals.

A pair of astronomers Ermanno Borra and Eric Trottier from Laval University published a paper in Oct 2016 (read here: <http://dgit.in/234Signals>), covering the analysis of 2.5 Million stars present in the Sloan Digital Sky Survey trying to detect spectral modulations and observe whether they follow a particular pattern. The research men-

tioned mysterious signals coming from 234 stars that can have origins from an extra-terrestrial intelligent civilisations. Just like the Wow! Signal, the theory

suggests that aliens sending these signals is one of the possibilities being considered and not the only one.

This implies that we are definitely improving on discovering or getting as close as we can to determining the point of origin of these signals. It's also clear

that we are a long way from determining what these bursts are and what's creating them. For now, efforts are being made to detect more of such FRBs, no matter where they are originating

The Wow! Reply message included 10,000 Tweets with the hashtag #ChasingUFOs, and videos from celebrities such as comedian Stephen Colbert.



Neutron stars emit high energy radio waves often mistaken as fast radio bursts

from, and study them. As research is conducted on a wider dataset, we might soon be able to accurately pinpoint the source and even determine what caused them. And maybe, just maybe, if extra-terrestrials are trying make contact, we would one day be able to establish communication.


Sending a message

Along with searching for a technologically advanced civilisation in the universe, it's also essential to broadcast messages. Active SETI have undertaken numerous projects targeted at stars between 17 and 69 light years away from Earth. Among the most notable projects, the Arecibo message was sent in 1974 to the globular cluster M13 which approximately 24,000 light years away and the main intention behind sending this message was to test newly installed equipment. Another important message is RuBisCo Stars sent in 2009 which will be the first message to reach its destination – Teegarden's star – in 2021. It would have been a shame if we left the Wow! Signal unanswered even if it wasn't a message in the first place. The Wow! Reply was sent in 2012 celebrating the 35th anniversary of the Wow! Signal and the launch of National Geographic Channel's new show "Chasing UFOs".

Several critics have been against the idea of sending a transmission since it will give away the location of Earth. Although it's a genuine concern, many have argued that the advantages of establishing communication with extra-terrestrials far outweigh the dangers.



Arecibo and RuBisCo Stars messages were transmitted from the Arecibo Observatory

Returning back to the title or rather question of this entire article. Is there anybody out there? Probably. We have already witnessed a jump in technology in detecting signals and observing deep space. One of those FRBs might turn out to be from an extra-terrestrial civilisation and perhaps we make contact. 



Brains VS AI poker

Libratus bot from Carnegie Mellon University compete against humans in a 20-day poker tournament <http://dgit.in/AI poker>



100,000 Amazon jobs

Amazon announces plans to create 100,000 new full-time jobs in the US by mid-2018. <http://dgit.in/AmazonJb>

From the labs

Digital diagnostics

putting together the clues, byte by byte

From reinventing the good old stethoscope to bringing us closer to a real version of Star Trek's Tricorder, check out the fascinating ways in which digital diagnostics is changing medicine.



Dhinoj Dings
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While communicating using emojis and ordering pizza online are fruits of technology, one arena where the revolution in digital technology ought to play a vital role (no pun intended) is the field of medicine. In medicine, diagnosis is a significant facet for obvious reasons. For one thing, you cannot have a proper treatment without the proper diagnosis. Also, in many cases, a good cure or even survival may depend on faster diagnosis.

Which is why it's worth a look at the different ways in which digital technologies are changing way diagnosis is performed in medicine.

Finding the clues in medical images

IBM's Watson is probably most widely known as the super computer with a penchant for beating the smartest people at chess. But if you thought that Watson's acumen is limited to the black and white square boxes, you are fatally mistaken about that.

In fact, Watson has already brought significant changes in medical science,

including diagnosis. One interesting way Watson makes better/speedier diagnosis is by accurate interpretation of medical images.

It was in 2015 that IBM acquired Merge Helathcare (for an impressive \$1 billion). This acquisition brought to IBM over 30 billion medical images sourced from more than 7,500 medical care centres in the US. IBM's idea is to feed these images to Watson.

Being the savvy artificial intelligence Watson could spot significant information that physicians might miss- the kind of information which would give doctors the clue to what ails



Active aging companion

The ElliQ is a new digital assistant from Israeli startup, Intuition Robotics designed for the elderly. <http://dgit.in/ElliQn>



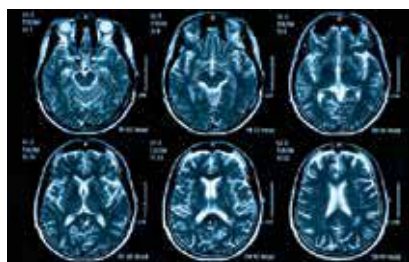
RIP Lily drone

The autonomous camera drone that raised more than \$34 million on Kickstarter is dead. Buyers demanding refunds. <http://dgit.in/RIPlily>

a patient. To do this, Watson would also get the help of the technology called deep learning with which it has been upgraded. Deep learning helps Watson to identify data patterns that contain huge chunks of information.

One example of diagnosis in this manner is with melanoma. Melanoma is a type of skin cancer that is quite difficult to spot. This is because it appears differently in different people. Combining deep learning and the wealth of medical images in its possession, Watson may recognize crucial features of the disease that were missed by the doctors to begin with.

For instance, if doctors feed the image of a recently diagnosed case of melanoma to Watson, the image would then be added to its database. This image could then be compared with literally thousands of other images. Once this information is compiled, doctors could gain from it an overview



Tech helps processing images-and diagnosis faster

of how to diagnose potential melanoma patients in the future.

The confidence in the change that the acquisition of Merge by IBM would bring in health care came through loud and clear when Michale W. Ferro Jr., the Chairman of Merge said that the "combination of assets" would deliver "unparalleled value" to the people. Judging by the way technology is being harnessed in novel ways for diagnosis, that may just be the case.

Piecing together the puzzle from genes

Diagnosis is the precursor to prescribing the right treatment. And like with many things in life, the art of diagnosis is also gaining in depth,

becoming more precise. In more prosaic terms, diagnosis is no more just about identifying the disease, it's also about identifying the minutiae of



In depth diagnosis with genetic profiling

the disease which could be different from people to people. Such a diagnosis would help doctors prescribe the most apt treatment for a particular patient. An accurate diagnosis of this depth, if made possible in a short time could be the difference between life and death.

Particularly true for such deadly diseases like cancer.

IBM's Watson comes into play on this regard too. The deep learning abilities of Watson enables it to translate a patient's DNA into a genetic profile which the physicians could use to pinpoint the issues the patient suffers from. This would in turn help the doctors to prescribe the most ideal treatment options for the patients.

To get to such a level of precision-diagnosis is no easy task. For a single individual's genome would take up around 100 gigabytes of memory. And analyzing this wide a range of information, not to mention the journals, studies, textbooks and health records would consume countless man hours. If doctors are freed from this task, they could tend to the patients more. Which is why Watson is such a powerful tool since it can perform the task in mere minutes of time.

In terms of bringing down the time required for such precision-diagnosis, many acknowledge that Watson is already doing a pretty good job, including Dr. Lukas Wartman, assistant director of cancer genomics at The McDonnell Genome Institute

in St. Louis, USA, one of the leading institutions in the field.

Having said that, it must also be added that Watson is still in its initial stages. It's said that the technology that would enable Watson to perform at its fullest potential is yet to come. Though technology is progressing at a more rapid pace than ever before, evolution of technology is still a time consuming process. This means that Watson isn't yet powerful enough to replace health care professionals but doing such things as processing billions of medical images and bringing down diagnosis time has already made it the doctor's ally, and the patient's new hope.

Using an old tool in new ways

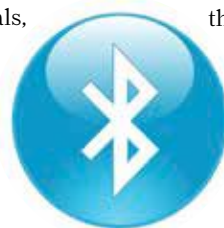
Using something that's already in existence in novel—often unexpected—ways could also constitute useful innovation. And this mode of innovation, perhaps not surprisingly is seen more among startups than established firms. Being in the back seat when it comes to funds, it's often with creativity that startups fight the bigwigs.

The American startup Intelomed is one such. And they have come up with something that's quietly changing healthcare for all.

The company's technology called CVInsight uses one of the most popular technologies of today—the humble Bluetooth to help doctors gain information about a patient's bodily parameters.

This information would then help them come up with the apt diagnosis for the patient's condition. The technology makes use of a single Bluetooth sensor that's worn on the forehead of the patient.

Not only would this help doctors collect crucial data for diagnosis, it would also help them monitor the patient live, helping them act immediately in the event of some unfavorable changes in the patient's statistics. For the health care professional, this means that ambiguities in diagnosis can be cut down using precise data.



The good old Bluetooth, used in an all new way



Adobe digital assistant

Adobe Research is reportedly working on a voice-activated digital assistant that can edit pictures for you. <http://dgit.in/AdobeVo>



Basslet wearable

Basslet is a small, flat black wearable device that you wear on your wrist like a watch that acts as a subwoofer. <http://dgit.in/BassletW>

From the labs

Digital stethoscopes

The stethoscope has been hanging around the neck of doctors for so long that the device has become synonymous with the doctor's profession. One of the most basic tools for diagnosis, the device is also getting advanced, thanks to digital technology. And this is definitely bettering the quality of diagnoses that are being made.

One of the problems with traditional acoustic stethoscopes is that the sound level you get is very low. Using modern technology, digital stethoscopes electronically amplify the body sounds and



An age old device gets a makeover!

overcome the issue. This would require that the acoustic sounds be converted into electronic signals which would be then transmitted through a uniquely designed circuit. These signals would then be processed for the purpose of optimal listening. The circuit would include components which allow the amplification of the energy and also supports listening at different frequencies. Not just that, the sound energy could be digitized, encoded and decoded. Also, ambient noise could be reduced or even completely eliminated and the result can be channelled through headphones or speakers.

Whereas traditional stethoscopes are all based on the same physics, the transducers used in the electronic stethoscopes differ. Probably the least effective (and also the simplest) way to detect sound could be placing a microphone in the chest piece. The drawback here is ambient noise interference. Another method is to place a piezoelectric crystal at the head of a metal shaft-the shaft's bottom would make contact with a diaphragm. The diaphragm

would respond to sound waves in the same manner that traditional acoustic stethoscopes do. The difference is that the changes in air pressure would be replaced by changes in an electric field. This way, not only is the sound of an acoustic stethoscope preserved, but the benefits of amplification can also be had. There would definitely be an electronic tinge to the resultant sound but it would be less ambiguous, thereby helping doctors.

Also, the fact that sounds are in the electronic form means that features like wireless transmission and recording of sound clips are possible. Most digital stethoscopes have an audio output signal which, using a stereo or mono cable connection allows the audio to be transmitted in real time to a supporting app. The supporting software interprets the output for diagnosis.

Also, the audio outputs that are processed using different supporting software packages could be saved as files to be transmitted through email or other modes of communication methods. Certain digital stethoscopes even have audio data output options that could be hooked up to the audio input of a video-conferencing unit. The video-conferencing units would then be the decoders and encoders of the data to be transmitted through a network.

Some digital stethoscopes even allow data to be transmitted through a Bluetooth or wireless interface. Most wireless digital stethoscopes may require Bluetooth receivers.

Some models allow on-board recording and playback on the physical part of the stethoscope itself. Visual output of such parameters like the heart rate and EKG waves are also possible with certain supporting apps.

The buck doesn't stop there for digital stethoscopes. The fact that they convert sound to digital signals means that they can transmit the data either live or in a store-and-forward manner. These devices detect sound using the stethoscope sensor and then convert the sound energy into electricity which would be channelled through a circuit that can amplify it and filter

it by frequency before converting the analog data into its digital equivalent. A corresponding digital stethoscope should be on the other end so that the digital signals could be converted into analog signal so that the sound can be processed by the human ear.

A Tricorder – a la Star Trek

Don't get too excited for the idea of diagnosing someone using a tricorder as you see in Star Trek must remain in the realm of science fiction for a while. But certain new researches are pointing to a future in which this could be a reality soon enough. For instance, the idea of using breath tests to diagnose bodily disorders, if made possible would be a relatively inexpensive, not to mention painless and quick method of diagnosis.

Related to this, a team of global researchers recently unveiled a nano array which could identify the chemical signature of 17 various diseases. However, for anything like a tricorder



Science-fiction, soon to be non-fiction!

to be made possible with breath tests alone, the breathalyzers should be able to identify more than a disease at a time. The technologies that have been developed so far are rather limited in scope in this regard. However, the recent research has identified different breath odour signatures of different diseases. Simply put, the composition of the breath that we exhale would vary depending on our state of health. Now, if there exists a breathalyzer (a la tricorder) that could analyse these compositions correctly, we could have ourselves a 'cool' medical device.

New frontiers seem to be just a breath away. **d**



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Let's face it - when it comes to realising your dreams, money is almost always a big deal. Even if you've had the best idea ever - one that is going to help the entire world and make you eternally famous - if you don't have the moolah to put behind it, consider it doomed in the age of distractions and short attention spans. Hence, when crowdfunding was touched by technology, it got a lot of attention. Today, we have successful projects like the Oculus, Pebble and many more that have hit mainstream popularity, all thanks to widely successful crowdfunding campaigns.

Hence, it is natural for people to look up to crowdfunding as this

magical solution to all money problems when it comes to launching your own product or business idea. It's not as if crowdfunding does not work today, but gone are the days when all you needed was a Kickstarter campaign to get media attention and widespread demand that initial projects experienced. Simply having an ongoing campaign won't work anymore. "I built it, but they did not come" is a very common, and heavily misused excuse from rapidly failing campaigns these days. And why are they failing? Because none of those campaigners really know how crowdfunding works any more.

If you look at statistics from Kickstarter and Indiegogo, two of the most popular crowdfunding platforms out there, you will find that less

than a third of the attempts made at a successful crowdfunding campaign manage to get any substantial funding at all. One of the major misconceptions is that a campaign, once created, will mostly be successful on its own - as if there is a huge group of users browsing crowdfunding websites all the time, looking for projects to put their money into. Which is not true. Whether you're looking at crowdfunding as the first answer to your money needs or as a last ditch effort to keep your venture afloat, you need to get one thing straight - most crowdfunding websites are merely platforms to help you reach potential backers efficiently and you will still need some people you can pitch directly to.

So, on one hand, there are the numbers shared above that indicate the



Ads mid videos

Facebook wants to start showing ads in its videos and share 55 percent of sales with publishers. <http://digit.in/FBadsMid>



Open sourcing Lucy

Digital model of the world's most famous fossil australopithecine, Lucy, is now available for researchers for download. <http://digit.in/LucyFossil>

Smart SoHo

low probability of success. On the other hand, there are so many huge crowd-funded campaigns that started from nothing. The important thing to figure out if crowdfunding works is to understand what works in crowdfunding. Because when it works - it works big.

The right product for the right market

Theoretically any product and idea can have a kickstarter. But in practice, there are certain categories that work better. In fact, one could go as far as saying that these categories have put crowdfunding on the map. Crowdfunding campaigns for gadgets (of almost any kind), videogames and movies work better than other categories. Don't believe us? Head to the Kickstarter Discover section and sort the projects by 'Most Funded', your screen will be littered by projects from the three areas mentioned above. As a comparison, filter the projects by location to India and see the same screen be filled with similar projects, with just the number of backers dropping twenty-fold.

Don't get us wrong, we aren't saying that crowdfunding in India isn't possible. Take a look at Wishberry which has raised about 10cr across 350 projects to accomplish a success rate of 70% (that is 7 in 10 projects reaching their goals). Anshulika



Anshulika Dubey, Co-Founder and COO at Wishberry

Dubey, Co-Founder and COO at Wishberry effectively explains the situation, "As of now, there have been only glimpses of tech innovations in India, majorly in the form of mobile applications and student projects. However, crowdfunding has been able to add

immense value in the Indian creative space. Three films - Kothanodi, Goonga Pehelwan and Breaking Free, which crowdfunded on Wishberry went on to win the National Award."

But there are mainly two problems in the Indian crowdfunding scenario - the lack of trust in putting your money behind a stranger's vision and the lack of an innovative culture to begin with. Mr. Satish Kataria, Managing Director, Catapoolt, commenting on the state of crowdfunding in India addresses this issue, "There are some innovations from India which have successfully used crowdfunding. Exploride from Cochin, CarIQ from Pune are some such innovations. But having said that - the quantum of product innovations in India is still far less than what is happening in international markets. Kickstarter, for example, lists almost 20 new innovations (in consumer segment) everyday. This is one challenge that we in India are attempting to address.

Plan... and then plan some more

Even if you've finalised your idea and have a prototype ready, don't start your crowdfunding page just yet. There are quite a few things that you need to ensure so that your page doesn't disappear in the crowd (pun intended). It might vary from project to project but it is undeniable that simply building a product and putting it out there won't work. Speaking about what comprises a potentially successful crowdfunding campaign, Varun Sheth- CEO and Founder of Ketto shared a few pointers.

- It should have a brilliant story. You can't expect people to chip in if you can't do justice in explaining the cause you're raising funds for, right? Of course, using pictures and videos just adds more value to your story.
- You should have a promotion plan in place. We're facilitators but the real talking of the fundraiser will be done by the campaigner - you're the voice of your cause. Having a plan is indispensable.
- You should know which platforms

you're going to use to spread the word and who you can approach to amplify the story.

- Thanking your supporters and constantly responding to their queries/concerns increases the possibility of them spreading the word about your fundraiser. It should never be ignored. So you should probably have dedicated resources for doing this.



Varun Sheth- CEO and Founder of Ketto

As mentioned, there are a few common things you'll notice in most of the successful campaigns like effective videos, product shots etc that need to be worked on in the planning period. Alongside, it is equally important to build an audience - talk about your product, spread the word among friends and family and DEFINITELY have a website.

Hold on a sec.. Why are we doing this

So, as we can see, crowdfunding today has its own set of problems and it plays completely by its own rules. And looking at those rules, it might seem like quite a task if you don't have the benefits in mind. So why go for it? Why is it becoming more popular as each year goes by? As Varun puts it, "With every year, crowdfunding is becoming popular among entrepreneurs mainly because it's a great way to 'test the waters' before you actually go big and launch the product/service. You understand your idea's worth and where it stands in the industry. It's actually the crowd telling you what's working and what needs to be weeded out - that's what any entrepreneur wants. So if



New iPads coming soon

A new report suggests that Apple will be launching three new iPads this coming spring. Read the story here: <http://dgit.in/iPad17Q3>



Willow's wireless pump

Willow's smart wireless pump is a new wearable electronic breast pump for moms that fits in the bra <http://dgit.in/WWpump>

your idea is powerful, I believe crowd-funding is your perfect launchpad.”

The destination

Good to see you here after the months you spent on planning your campaign. Now, all we need to do is put it up on the right platform. At this point you need to look at your project and do a fair bit of investigation. On the surface it might seem to you that the platform you choose doesn't matter as long as your project is good, but that isn't the case. Each platform has its unique characteristics because of which each is suitable for specific types of projects.

There are quite a few factors that you need to take into account, as shown below.

Funding model

- **All or nothing (AoN)** - In this model, once the campaign is successfully completed, only then the pledged amount is collected. If the pledge goal set is not achieved, no money is collected.
- **Keep it All (KiA)** - In this model, irrespective of the goal being met or not, the amount minus any commissions charged by the platform is handed to the entrepreneur. In case the project fails to complete, it is up to the receiver of the funds to return it to the backers.
- Choose the first if you need a huge amount of money at one go to get started, and chose the latter if you need a continuous stream of money to keep your project alive. Kickstarter follows the AoN approach while Indiegogo allows both.

Idea type

- **Anything goes** - On these websites, any kind of project can be put up for crowdfunding, as long as it's legal.
- **Creative** - Certain crowdfunding platforms are only for artists and inventors, with the most prominent example being Kickstarter. Wishberry from India is also an artistically inclined platform, and so is FuelADream. The latter, in fact, focuses

more on quality with a maximum of 20 new projects per month.

- **Entrepreneur faced** - Platforms like Microventures and Profounder connect startups with investors from around the world. Faircent is a similar Indian microloans platform.
- **Social causes** - If you're campaign will be raising funds for a social cause, an emergency, or even micro business projects, this type is targeted to that. Platforms in India like Milaap and RangDe are in this category.

Cost

This varies from site to site. For example, Kickstarter charges 5 percent of funds raised, plus 3 to 5 percent to Amazon Payments which processes the payments. Indiegogo takes 4 percent if the fundraising goal is met and 9 percent if it isn't. There's also a third-party payment processing fee of 2.9 percent. Among Indian platforms, Wishberry charges a ₹3,500 initial fees and a 10% commission if the project completes. Comparatively Catapooolt charges a ₹1,499 Project registration fees followed by at least 10% of the funding raised depending on the plan you choose.

Hence, you need to think about the combined impact of all the above factors to decide the right crowdfunding platform for your project. Any one of these might make or break the chances of your campaign becoming successful in the long run




Indiegogo has an 'anything goes' approach when it comes to allowing projects on its platform

The legalese

In our country, crowdfunding is fairly nascent. A strong indicator of that is the lack of laws around it compared to the environment beyond India. For example, countries like USA, Europe and Singapore do allow equity based crowdfunding – whereas in India, the regulations are yet to open the sector up, which would allow communities to support the entrepreneurial wave. But in a certain way, the competitive nature and inherent transparency involved in crowdfunding makes it a self-regulated sector. According to Anshulika,

“Even though there aren't any laws and regulations designed specifically for the crowdfunding industry, the competition itself keeps the platforms on their toes to curating the quality and credibility of projects for the funders and at the same time, keeping the payment policies as transparent as possible for the project creators.”

Roll the dice

You've built the hype, shot the videos, created ripples on social media, and pitched your campaign to countless people before you've finally made it live. Now all you are doing is waiting with bated breath for the crowd to rush in. At this point, one of the most important things you need to be aware of is that in any crowdfunding venture – as with most ideas that rely on popularity these days – there is a certain amount of luck involved. To understand this, have a look at all the me-too projects that have failed over the year due to bad timing. So, if your first Kickstarter or FuelADream project doesn't get the kind of backing and success that you expected, even though you did everything you could, don't give up entirely on the idea itself. Try to rebuild it from scratch - the campaign and maybe even the product, to keep it new and fresh. Keep at it and your very next project might be the next Oculus! 



The Populele U1

The Populele U1 is a smart ukulele with a light-up fret board and a companion app that pairs over Bluetooth. <http://dgit.in/Populele>

Steadicam Volt stabilizer

Steadicam Volt Stabilizer is a new smartphone gimbal that uses electronic motor system to steady your shots. <http://dgit.in/VoltCam>

Industry Connect

Ryzen, Vega, Instinct, and more...

AMD has a busy year ahead. We sit down with Mark Papermaster, CTO, AMD to learn more.

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d AMD has undergone quite a few changes over the years. There was the separation of AMD and RTG. Then the fabs in South-East Asia were sold to another company. There seems to be a lot of restructuring happening. So how is AMD shaping its direction?

Mark: Well, we started restructuring about five years ago. It started with redirection in terms of our energies and R&D. There's a long lead time for brand new technologies. So we started our redirection with our new team and a new high-performance core which we're rolling out into the market as Zen. And then really retooling a lot of the engineering, first under Zen core, then our graphics products and even the technologies by how we put CPU graphics in our other IPs to get what we call our Infinity Fabric. So this started some years ago, and each year we've been able to make excellent progress in development. And this has lead up to our focus on graphics through the formation of Radeon Technology Group as you mentioned.

In terms of China, that's more about addressing the market. We have partnerships with the Chinese Academy of Sciences for the microprocessor effort. As for Tianjin, we've allowed a partnership that will create a product that was sanctioned by the government to really reach deeper into the market which is restricted to indigenous design. And then we had divested parts of our pack and assembly, and the fabs some time



Mark Papermaster, CTO, AMD

ago. Now that the industry OSAT is quite developed, it was no longer necessary to keep pack and assembly as part of our assembly so we entered into a partnership with Nantong Fujitsu. So that's also been going quite well.

d AMD has been dominating the console segment with the current generation. And with the move from proprietary architecture to x86, consoles are becoming more similar to PCs. So would AMD continue to target semi-custom SoCs or would consoles simply use the same chip-sets as the PC segment does?

Mark: The beauty of our semi-custom market is that it leverages technologies from the AMD road map. So we have a strong technology road map for our CPUs, graphics, video and display technology, multimedia and so on. That's what we use to create our Radeon products, our CPUs, our APUs. So, of

course, we'll compete. For future opportunities in the game console segment, we'll again compete to win based on the strength of the technology roadmap that we have at AMD.

d When you demonstrated Ryzen back in August, it was clocked at 3 GHz and later at the unveiling it was demonstrated at 3.4 GHz. Could you tell us what the final base and boost clocks will be?

Mark: We were just trying to show our customers that we are right on track. That being said, we'll be completing the Zen core design this year, completing test and getting it to market in Q1 as Ryzen. We're really trying to show the capability of Ryzen, that we can compete with Intel's i7, that we can compete with the highest end CPU in the market today. Ryzen is designed to address the full range of the marketplace. **d**

Full interview - <http://dgit.in/AMDMarkCTO>

Killer rigs

We tell you about the best components to look for at various PC rigs at different budgets

Recommended buys

The very best products you can buy right now spanning across 10 popular tech categories.

Mechanical Madness

The key(s) to you having a good gaming and typing experience



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The Nerd Squad had gotten together for a few overnight keynote sessions during CES. We've had this little thing for a while now, staying up through the night to watch CES keynotes while gaming on the side. So when we heard of Cherry's new silent switches, the conversation veered towards mechanical keyboards. Now most of us have mechanical keyboards at work and at homes but there are some who don't find it feasible to plunk down the hefty initial investment for a mechanical keyboard. I too didn't bother much with mechanical keyboards for a long time.

Having spent most of my gaming sessions on membrane keys, I never found membrane keys to be lacking. But as time goes by, the cheap membrane keys tend to bottom out and never recover. And sometimes the key caps grind the shaft to such an extent that pressing keys tend to be more laborious as the keyboard ages. Add a little bit of dust and grime, and you have a recipe for FPS disaster. RTS players can get by but those who're a little too dependant on keyboard macros will

feel the pain as well. Ever since I've moved to mechanical keyboards, I've completely banished the thought of going back to membrane. Even buzzwordy hybrid switches seem to be a leap of faith. But more on that later.

Like most HIDs (Human Interface Devices), your choice of a mechanical keyboard is very much suited to your preferences. And mechanical keyboards have a lot of parameters worth noting but at the end of the day, you might just go with something you are most comfortable with. Which is why, you need to try out any keyboard before you buy them because you don't want to spend a large amount on a keyboard which proves to be discomfoting and too noisy for your ears (this is a genuine complaint).

Let's break down these parameters into cosmetic and functional. We'll stick to the functional aspects as these are what matter, the cosmetic parameters are key agnostic. Since mechanical keys are individually wired, you tend to get N-key rollover with every one of them. For gamers and ultra-fast typers, this matters as they tend to press quite a few keys together and a poorly wired keyboard might not register a key every now and then. But with mechanical,

you don't have to worry about that. There's another caveat here, N-key rollover is guaranteed with PS/2 connectors but with USB you need to read the fine print. Any keyboard with above 4/5-key rollover is more than sufficient for the vast majority of us. Even for those who claim to have very high WPM (words per minute).

The key component with keyboards are ... the keys. There are so many different types of keys available you're literally spoilt for choice. Up until a few years back there were just a few companies making mechanical switches but with the recent craze for mechanical keyboards, these numbers have risen substantially. You can still get keyboards with buckling spring switches, those which were part of the legendary IBM M Keyboards (I believe we still have one in the Digit Test Labs). Then you have Topre, Kailh, Matias switches among others. Some keyboard manufacturers have even developed their own keys like Logitech's Romer-G, Razer Green, Orange and Mecha-Membrane, and the Steel-series QS1. But the most well known of mechanical switches – so much that they've become synonymous with mechanical keyboards – are Cherry MX switches. The MX is actually a series from Cherry which is present in most mechanical keyboards.

Each key has a few defining parameters to it. Perhaps you like keys to be a little extra stiff or maybe you like a little clickety clack with each key-press. All keys from the Cherry series are easily distinguishable thanks to colour coding. The most popular is Cherry MX Red which makes no noise, has no tactile feedback and the spring is fairly soft. The second most popular key is the Cherry MX Blue which is slightly stiffer because of a bump along the key cylinder. But they are noisy. Having tried most of the keys from Cherry's arsenal I tend to lean towards Cherry

Price watch

Take your game one notch higher with the best gaming mice, or pump up your audio game with the best on-ear headphones.



Self service please


What do you want, how much of it do you want? Have your say, take this survey.

<http://dgit.in/dsurvey17>

Agent 001

MX Brown but Black is fine for me as well. My first mechanical keyboard was the TVS-e Gold with Cherry MX Blue and I moved on to Red switches later - because Blue was too darn noisy at night. There are hybrid keys as well, but we rather not talk about them as they are rubber dome switches with slightly improved durability.

If you're in the market for a mechanical keyboard but don't want to spend a lot, then the TVS-e Gold is a good one to start with. If macro keys are an absolute need then the Corsair K95 is one you should consider since it has 18 of them. What you should keep in mind is that since mechanical keys are tall, the keyboards can be slightly strenuous

to work with. So either get a keyboard with a palm rest or get one separately, especially if you tend to type a lot. As mentioned earlier, you should really try out mechanical keyboards before purchasing them as you need to figure out which key type you are most comfortable with - be it for gaming or for day to day typing work 

Galaxy A7 broken

Hi, recently I dropped my Samsung Galaxy A7 (2016) and the LCD screen cracked. I was totally in love with the phone but now I have to purchase a replacement, as the service centre



The Moto Z Play is a good A7 replacement

does not have the required parts to be replaced. I got a refund for the phone minus the cost of the damaged part which was not available. I have been looking at a lot of options but haven't been able to decide on any phone.

What phone would you suggest to buy to replace my beloved Samsung Galaxy A7 (2016). I have a budget of 25k and would like nearly the same specs of the Samsung Galaxy A7 (2016) to be in the new phone. I think the features that are most important to me are as follows:

- 1) Good camera - 15+ MP rear and 5+ MP front
- 2) Dual-SIM slot with 4G LTE support
- 3) Dedicated SD Card Slot
- 4) 16+ GB internal memory and 3+ GB RAM

- 5) NFC
- 6) FM Radio
- 7) Reasonable price

I haven't found a single phone that has all the above features. Is the Motorola Moto Z Play a good choice? Any other suggestions?

Thanks and regards,

 Hey Eric,

The Galaxy A7 has a new model for 2017, probably that's why they have exhausted or discontinued manufacturing the spare parts. Since you're already through the refund process, you can consider the Moto Z Play. It is a worthy option to consider under ₹25,000 since the specs are almost similar to the Galaxy A7 (2016). If you wish to further lower your budget, you could go for the OnePlus 2.

- Eric

Portable audio studio

Hi team Digit,

I am big fan of Digit. Only because of you now I am more of geek then a nerd. Although I am not a person who wants a future in computers but your magazine is of great help to me in my field of music production. It gave me an idea on how to set up the DAW and use different plugins. Now I want to upgrade my old Dell Inspiron n5050 as I am not capable of buying a new laptop. I want to upgrade my RAM and also want to know up to which extent I can expand it. I also want to know is there anyway that I can replace my internal HDD with a SSD. I want to make my older laptop a little faster as I want it to run music production tools. Please give me a full description for the same.

Also, I will be pleased if you suggest me with a good external USB audio interface and a good headphone for music production.

Thanks in advance.

- Indrabhan


 Hey Indrabhan,

We are glad that you like our content and we promise to continue offering you the same in the future. The maximum capacity support for storage and memory is dependent on your motherboard. Since it's an Intel 2nd Gen processor, we think it should support a maximum of 2TB storage so you should



For professional level audio production

be fine with any capacity for a HDD or SSD (if you want speed) under 2TB. For your internal memory or RAM, you should be able to extend it comfortably up to 16GB.

For an external USB audio interface then we would recommend the Focusrite Scarlett Solo or the 2i2 (which has 2 audio inputs) for around 8k. For music production, the Beyer-dynamic - DTX 910 is an affordable choice at 4k. Although, both these products are only required if you want to start off with professional quality audio, hence it will be expensive. Also, to be able to achieve better quality, you will require a better system than your current laptop. 

■ Basic rig = ₹32,832 ■ Entry-level gaming = ₹57,008 ■ Mid-range gaming = ₹81,831 ■ High-end gaming rig = ₹1,18,618 ■ Ultra high-end gaming = ₹2,96,039 ■ Digit test rig = ₹5,38,918

BASIC RIG

Processor	Intel Core i3 - 7100	9,935
Motherboard	ASRock H170 Pro4S	6,899
RAM	Crucial Ballistix Sport LT 8GB DDR4 2400	3,970
HDD	Toshiba DT01ACA100	3,590
Graphics Card	Intel HD Graphics 630	0
PSU	Corsair VS450	2,450
Speakers	None	0
Optical Drive	None	0
Mouse	AmazonBasics Wired Keyboard and Wired Mouse Bundle	779
Keyboard	Included in combo	0
Sound Card	None	0
Sub-total	(Excluding Monitor)	27,623
Monitor	BenQ G615HDP1 15.6-inch	4,209
Cabinet	OEM Cabinet	1,000
Total		₹32,832

MID-RANGE GAMING

Processor	Intel Core i5 - 7400	15,500
Motherboard	MSI H270M BAZOOKA	9,450
RAM	Crucial Ballistix Sport LT 8GB DDR4 2400	3,970
HDD	Zotac SSD 120GB ZTSSD-A4P-120G + Seagate Barracuda ST1000DM003	6,280
Graphics Card	ASUS Geforce GTX 1060 6GB Turbo	22,600
PSU	Antec VP550P 550 Watts	3,933
Speakers	Philips MMS-4040F/94 2.1	2,879
Optical Drive	Asus DVD-Writer 24X (DRW-24D5MT)	1,120
Mouse	Cooler Master Devastator II	3,399
Keyboard	Included in combo	0
Sound Card	None	0
Sub-total	(Excluding Monitor)	69,131
Monitor	Benq GW2470H 24-inch	9,400
Cabinet	Corsair Spec 1 Red CC-9011050-WW	3,300
Total		₹81,831

ULTRA HIGH-END GAMING

CPU + Cooler	Intel Core i7-7700K + Cooler Master Seidon 120V Plus	33,110
Motherboard	GIGABYTE GA-Z270X-Gaming 5	21,600
RAM	Corsair Vengeance (8 x 2) 16GB 2666 MHz	8,370
HDD	WD WD30EZRZ + Samsung 960 Pro 512 GB	37,960
Monitor	Acer XB270HU 27-inch 144 Hz 4K G-Sync	62,665
Graphics Card	GIGABYTE GTX 1080 Xtreme Gaming	62,800
Cabinet	Corsair Graphite 760T	14,073
PSU	Corsair SMPS RM1000	12,600
Speakers	JBL LSR305	15,399
Optical Drive	LG Blu-ray WH14NS40 RW	5,875
Mouse	Zowie FK2	5,310
Keyboard	Cooler Master Masterkeys Pro L	9,610
Sound Card	Creative Sound Blaster Audigy PCIe RX 7.1	6,667
Total		₹2,96,039

ENTRY-LEVEL GAMING

Processor	Intel Core i3 - 7100	9,935
Motherboard	ASRock H170 Pro4S	6,899
RAM	Crucial Ballistix Sport LT 8GB DDR4 2400	3,970
HDD	Toshiba DT01ACA100	3,590
Graphics Card	Sapphire Radeon RX 470 4GB DDR5 OC	15,850
PSU	Corsair VS450	2,450
Speakers	F&D F-203G 2.1	1,029
Optical Drive	LG GH24NS95 DVD Writer 24X SATA	990
Mouse	Gamdias Ares V2 Essential Gaming Combo	1,055
Keyboard	Included in combo	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	45,768
Monitor	HP 22es IPS 21.5-inch	8,755
Cabinet	Antec VSK 4000B U3	2,485
Total		₹57,008

HIGH-END GAMING RIG

Processor	Intel Core i5 - 7600	18,300
Motherboard	ASUS ROG STRIX H270F gaming	11,655
RAM	Corsair Vengeance (8 x 2) 16GB 2400 MHz	7,980
HDD	Seagate Barracuda ST2000DM006 2TB + Adata Premier SP580 240GB	11,175
Graphics Card	ZOTAC GTX1070 AMP! Edition	37,700
PSU	Corsair SMPS CS750M	8,190
Speakers	F&D F550X 2.1	3,849
Optical Drive	Asus DVD-Writer 24X (DRW-24D5MT)	1,120
Mouse	Cooler Master Devastator II	3,399
Keyboard	Included in combo	0
Sound Card	None	0
Sub-total	(Excluding Monitor)	1,03,368
Monitor	Benq GW2470H 24-inch	9,400
Cabinet	Corsair Graphite 230T Window Black	5,850
Total		₹1,18,618

PRIMARY DIGIT TEST RIG

Processor	Intel Core i7 - 6950X (Extreme Edition) + Noctua NH-D15	1,31,100
Motherboard	Gigabyte X-99 SLI	19,950
RAM	Apacer Panther 2666 MHz 32 GB (4x 8 GB)	15,840
HDD	Western Digital WD40EZRZ	12,444
SSD	SanDisk Extreme II 480GB (2x 240 GB)	34,000
PCIe SSD	Intel 750 NVMe + Kingston HyperX 480 GB	1,18,199
Graphics Card	GIGABYTE GTX 1080 XTREME Gaming	63,250+Tax
Cabinet	NZXT H440	18,086
PSU	Corsair HXi1000i 1000 W	16,699
Monitor	Acer Predator X34	89,000
Optical Drive	NA	NA
Mouse	Razer DeathAdder Elite	5,580
Keyboard	G.SKILL Ripjaws KM780 RGB	14,770
Total		₹5,38,918

digit RECOMMENDED BUYS

From smartphones to gaming laptops, here's what we recommend for your next purchase!



TOP 3 MIRRORLESS CAMERAS

Brand	Model	Price (in ₹)
Fujifilm	X-T2	1,27,900
Sony	Alpha A6300L	72,500
Sony	Alpha A5100L	44,990



TOP 3 SMARTPHONES UNDER 15K

Brand	Model	Price (in ₹)
Lenovo	Z2 Plus	14,999
Coolpad	Cool 1	13,999
Xiaomi	Redmi Note 4	12,999



TOP 3 FITNESS TRACKERS

Brand	Model	Price (in ₹)
Fitbit	Charge 2	11,999
Garmin	Vivofit 2	6,490
Xiaomi	Mi Band 2	1,999



TOP 3 SMARTWATCH

Brand	Model	Price (in ₹)
Apple	Watch Sport 42mm	34,900
Huawei	Stainless Steel watch	22,999
Motorola	Moto 360 2nd Gen	16,499



TOP 3 PORTABLE BLUETOOTH SPEAKERS

Brand	Model	Price (in ₹)
UE (Ultimate Ears)	Boom 2	15,990
Creative	SoundBlaster Roar 2	12,792
UE (Ultimate Ears)	ROLL 2	7,495



TOP 3 BUDGET LAPTOPS

Brand	Model	Price (in ₹)
HP	15-be003TX	32,990
Acer	Aspire E5-573G	31,999
Asus	A555LF-XX191T	31,990



TOP 3 BUDGET PRINTERS

Brand	Model	Price (in ₹)
Epson	L455	14,299
Ricoh	SP 210SU	6,499
HP	DeskJet Ink Advance	4,999



TOP 3 CPU LIQUID COOLERS

Brand	Model	Price (in ₹)
Thermaltake	Water 3.0 Riing RGB 360	15,999
Corsair	Hydro Series H110i GT	13,700
Corsair	Hydro Series H100i	11,900



TOP 3 HIGH-END DSLR CAMERAS

Brand	Model	Price (in ₹)
Canon	EOS 1DX Mark II	4,51,900
Nikon	D5	4,28,950
Canon	Canon EOS 5D Mark IV	2,34,964



TOP 3 GAMING HEADPHONES

Brand	Model	Price (in ₹)
Razer	Kraken 7.1 Chroma	8,999
SteelSeries	Siberia V2 Frost	10,000
SteelSeries	Siberia 200	3,710



New Casio WSD-F20

Casio's new outdoor smartwatch will be one of the first smartwatches with Android Wear 2.0. <http://dgit.in/WSDF20c>



NES Classic hacked!

Someone already hacked the Nintendo NES Classic Edition. Can upload new games using a USB cable. <http://dgit.in/NEShacked>

SPEND SMART

Is your mouse registering double-clicks with just one? Fret not because we have an extensive list for you guys. How about headphones to go along with that? Here are a few to fit under a budget of ₹15,000



GAMING MICE

Brand	Model	Type	Max. DPI	Buttons	Sensor Type	Game Genre	Coating (Finish)	Price (₹)
Logitech	G900 Chaos Spectrum	Wireless	12,000	11	Optical	MOBA/RPG	Textured Plastic	13,500
Corsair	SCIMITAR RGB	Wired	12,000	17	Optical	MOBA/RPG	Rubber (Soft)	7,200
Coolermaster	MasterMouse Pro L	Wired	12,000	8	Optical	FPS/MOBA	Matte UV	7,500
Zowie	Gear EC2-A	Wired	3,200	6	Optical	FPS	Soft Plastic	7,200
Zowie	Gear FK2	Wired	3,200	8	Optical	FPS/MOBA	Soft Plastic	7,100
Razer	Death Adder Elite	Wired	16,000	7	Optical	FPS	Rubber (Textured)	5,999
G.Skill	Ripjaws MX780	Wired	8,200	8	Laser	FPS/MOBA	Rubber (Soft)	5,500
Corsair	M65 PRO RGB	Wired	12,000	7	Optical	FPS	Rubber (Soft)	5,500
Logitech	G502 Proteus Spectrum	Wired	12,000	11	Optical	FPS/RPG	Matte Plastic	5,490
TT eSports	Ventus Z	Wired	11,000	10	Laser	MOBA/RPG	Textured Plastic	5,299
Steelseries	Rival 300	Wired	6,500	6	Optical	MOBA	Textured Plastic	4,400
Gigabyte	XM300	Wired	6,400	7	Optical	FPS	Rubber (Textured)	3,200
Steelseries	Rival 100	Wired	4,000	6	Optical	FPS	Glossy Plastic	2,799
Coolermaster	MasterMouse Lite S	Wired	2,000	6	Optical	FPS	Matte UV	2,000
Logitech	G302 Daedalus Prime	Wired	4,000	6	Optical	FPS/MOBA	Textured Plastic	1,700



HEADPHONES UNDER ₹15,000

Brand	Model	Impedance	Frequency Response (in Hz)	Driver Size (in mm)	Sensitivity (in dB SPL/V)	Type	Microphone	Price (₹)
Beyerdynamic	DT 770 Pro	250 ohm	5 - 35,000 Hz	45 mm	96	Closed-back	No	14,449
V-Moda	Crossfade LP2	32 ohm	5 - 30,000 Hz	50 mm	105	Closed-back	Yes	13,000
Sennheiser	Momentum	18 ohm	16 - 22,000 Hz	32 mm	44	Closed-back	Yes	11,799
Audio Technica	ATH-M50X	38 ohm	15 - 28,000 Hz	45 mm	99	Closed-back	No	10,349
Audio Technica	ATH SR5	35 ohm	5 - 40,000 Hz	45 mm	103	Closed-back	Yes	9,899
Grado	SR80e	32 ohm	20 - 20,000 Hz	NA	99.8	Open-back	No	9,800
AKG	K240 Studio	55 ohm	15 - 25,000 Hz	30 mm	104	Semi-Open	No	7,655
Sony	MDR-XB950AP	24 ohm	3 - 28,000 Hz	40 mm	106	Closed-back	Yes	5,159
Sennheiser	HD 429	32 ohm	18 - 22,000 Hz	NA	110	Closed-back	No	4,990
Audio Technica	ATH-M30X	47 ohm	15 - 22,000 Hz	40 mm	96	Closed-back	No	4,699
Panasonic	HTF890	50 ohm	5 - 30,000 Hz	50 mm	105	Open-back	No	3,999
Audio Technica	ATH-M20X	47 ohm	15 - 20,000 Hz	40 mm	96	Closed-back	No	3,029
Beyerdynamic	DTX 710	32 ohm	16 - 23,000 Hz	NA	97	Open-back	No	2,899
Sennheiser	HD 202 II	32 ohm	18 - 18,000 Hz	20 mm	115	Closed-back	No	1,799
Sony	MDR-XB450	24 ohm	5 - 22,000 Hz	30 mm	102	Closed-back	No	1,509

Unwind

Can't decide on a Valentine's gift for your special someone? Try one of these amazing gifts...

**Baaa!**

Don't be sheep, lead like a shepherd and tell us what we're doing right or wrong. Take this survey <http://digit.in/dsurvey17>



Tech is a part of your everyday life. Let's face it, you wouldn't be here, reading this story if it weren't. And like everything about life, it comes with its own variety and flavour. Just look at the names of all the big tech companies out there. We have come to live with them without thinking about why they are called what they are called. But as long as we are here, we won't let any tech question go unanswered. So let's dive into the story behind the names of some of the biggest tech companies out there.

Samsung

Let's start off with an easy one. Samsung's name literally means 'three stars' in Korean and was particularly selected to represent the three virtues of 'big, numerous and powerful' (just like the stars in the sky). Samsung was initially

into food manufacturing and sale, including dried fish, vegetables, noodles and fruit. And today the same company is into fields like aerospace, insurance and finance. Up until 1993, all of



One of the old Samsung logos with the three stars

Samsung's logos had the three stars on them. Keeping it might have put some context to the name for everyone!

Nokia

Another easy one on the list is the former (and maybe future?) phone company Nokia, which is popularly known to have started off not in the

tech business, but as a wood pulp mill on the banks of river Nokianvirta a few miles away from the town of Nokia. Creative much?

Apple

Of course, there are a lot of theories around the internet that Apple was chosen by Steve Jobs as an homage to Alan Turing. That isn't really true. First of all, the bite into the Apple in the logo was simply because of representing scale and conveying that it's not a cherry or any other rounded fruit. But then, why call it Apple? Well, in his own words, "Partially because I like Apples a lot and partially because Apple is ahead of Atari in the phone-book and I used to work at Atari". Some would say that this is precisely why there are so many newborns these days with names starting with A.



Ultrasound in VR

There is a 3D ultrasound that can scan and generate 3D models of unborn babies that can be viewed in VR. <http://dgit.in/UnbornVR>



From Titan to Loon

Alphabet is shifting their Titan team to Projects Loon and Wing, as UAV internet is proving too complex. <http://dgit.in/TitanXLoon>

LG

Like others featured in this list, LG Electronics didn't really start with its current name. It used to be Goldstar in 1958 in the aftermath of the Korean War. At least, it started off with the goal to build electronic devices. A sister company was known as 'Lak-Hui'



GoldStar

LG started off as GoldStar

(which is pronounced as Lucky) and that was where Lucky Goldstar originates from. Goldstar officially adopted the LG name and logo in 1995 and that is also currently used for the tagline 'Life's Good'.

Sony

Sony was originally founded as Tokyo Tsushin Kogyo K.K (meaning Tokyo Telecommunications Engineering Corporation) or Totsuko in short. After multiple successful products they decided to go global. At this point they strongly considered keeping their initials as the global brand name but that clashed with the railway company Tokyo Kyuko. Carrying forward the acronym was also rejected because during a visit to the United States, one of the founders Akio Morita discovered the Americans found 'Totsuko' quite hard to produce. Ultimately, the name



Imagine the Totsuko PlayStation?

Sony was chosen as a mix of two words - 'Sonus', the Latin word that is the root for sonic and sound and 'Sonny', a common American slang from that time that was used to call a boy. Also, 'sonny boy' was a popular loan word being used in Japanese around that time that denoted presentable smart young men, which the founders considered themselves to be!

Nintendo

Brace yourselves for this one because it's going to get complicated in here. Initially, Nintendo Koppai was founded to make and sell playing cards and was looking to start a new line for which it settled on the name Tengu. Tengu is a mythological Japanese folklore character depicted with a large nose. Still here? Good. The cards were known by the word 'hana' which meant nose and coincidentally, also meant flower. So these cards came to be known as hanafuda cards and Hanafuda came to be the popular card game. Now, Nintendo in Kanji can mean 'the temple of free hanafuda' or 'the company that is allowed to make (or sell) hanafuda'. The rest is history.

Amazon

Jeff Bezos initially wanted to call his new website Cadabra, as in abracadabra because he wanted the site to work so fast and easy that people would want to associate it with magic. In fact, the company was registered with this very name in 1994, but eventually a year later, the site went live with the name Amazon, borrowed from the largest river in the world (by discharge of water). That clearly stated the ambitions Bezos had for the website. So why was Cadabra dropped? Because Bezos eventually realised that it sounded too similar to cadaver.

Google

Oh, Cmon! You probably know this already! Google is a deliberate misspelling of the word Googol that represents the number 10^{100} , to convey the large amount of data that the founders Sergey Brin and Larry Page wanted to make available. But what isn't entirely popular knowledge is that the company had the initial nickname 'BackRub'. Imagine - 'I just Back-Rubbed it'. *silence shudder*

Mozilla

Back in 1994, a team at Netscape held a meeting to ideate on a new browser to take on NCSA's Mosaic browser. They wanted to build something that would crush the competition. Enter Godzilla,



Makes more sense, eh?

and combined with Mosaic they arrived at the current day name of Mozilla.

Wikipedia

Wikipedia's arrival at its name almost rivals Nintendo's. It essentially started as Nupedia but due to a drastically slow pace of content creation (12 pages in the first year), they looked elsewhere for inspiration. The main idea that they agreed upon was Ward Cunningham's WikiWikiWeb (which was one of the first user editable websites) to nurture interest in Nupedia by allowing people to edit the content. But the word Wiki



All aboard the Wiki Wiki bus!

goes beyond that. Ward Cunningham himself arrived at the name after landing at Honolulu airport and being told to board the WikiWiki Shuttle, where Wiki is Hawaiian for fast.

Asus

Another simple one on the list, Asus is inspired from Pegasus. According to the company's own explanation it "embodies the strength, purity, and adventurous spirit of this fantastic creature, and soars to new heights with each new product it creates." Much explanation, very logical.

Skype

With Skype, it's another classic case of settling for a name after the original



Medical centrifuging toy

Stanford bio-engineers have developed a toy that can separate material fluids by manual spinning. <http://dgit.in/SpinMed>



Snapdragon 835 leaks

Qualcomm promises that the new Snapdragon 835 processor will be 27% faster and 40% more power efficient. <http://dgit.in/Sdragon835>

Feature

intended one was already taken. Skype, as it appears, is a straightforward combination of sky and peer-to-peer. They had originally shortened it to Skyper, but since that wasn't available, Skype it was and Skype it is.

Yahoo

This one was initially founded as 'Jerry and David's Guide to the World Wide Web'. A year later the domain Yahoo.com was registered and the company founded. Initial impression would suggest to people that the name is based on the traditional meaning of the word, but Yahoo actually expands to Yet Another Hierarchical Official Oracle. Don't worry, the founders loved the original name too.

Twitter

Another pretty well known one, what with the logo and everything. Initially, Twitter was supposed to be named twttr, inspired by Flickr. Founder Jack Dorsey was always fascinated by how cities communicate in real time and wanted to build an SMS service to communicate with a small group. The initial name that they had decided was Status. "We did a bunch of name-storming, and we came up with the word 'twitch,' because the phone kind of vibrates when it moves. But 'twitch' is not a good product name because it doesn't bring up the right imagery. So we looked in the dictionary for words around it, and we came across the word 'twitter,' and it was just perfect. The definition was 'a short burst of inconsequential information,' and 'chirps from birds.' And that's exactly what the product was," Dorsey told the LA Times in 2009.

eBay

Originally, eBay was known as AuctionWeb. After unexpected growth (as much as 10 times in a year's time) founder Pierre Omidyar wanted to change the name. The company was owned by his consulting firm Echo Bay Technology Group and Omidyar wanted to rename the website to echobay.com. But since that already



Those bots could be carrying a much larger name!

belonged to Echo Bay Mines, a gold mining company, he shortened it to his second choice, eBay.com.

Spotify

This one is pretty interesting. The company was started in Sweden. If you check Google Translate, Spotify doesn't mean anything in Swedish. So what's the name for? The founders of Spotify, Daniel Ek and Martin Lorentzon were busy thinking of names for their new company when one of the names suggested was misheard as Spotify. Well, that sort of stuck to their heads and a quick Google and domain search later, they realised that it was all theirs to claim. They were initially too embarrassed to admit this as the story behind the name, so a little fabrication later, Spotify is also known to have originated from the words Spot and Identify.



An accidental name that just stuck

Ubuntu

According to the official website, "Ubuntu is an ancient African word meaning 'humanity to others'. It also means 'I am what I am because of who we all are'. The Ubuntu operating system brings the spirit of Ubuntu to the world of computers." That is a very noble notion for an open source software and hence it was decided to be the perfect fit.

Instagram

The founders wanted to convey the feeling that one gets from the 'Instant cameras' of the olden days, something that we take for granted today. They also wanted to incorporate the feeling of sending a telegram over the wire, which is what sharing photos on Instagram felt like. Hence (Insta)nt+Tele(gram) = Instagram.

Xerox

Xerox was originally founded as the Haloid Photographic Company, which originally manufactured photographic paper and equipment. It was around 1938 when an independent physicist Chester Carlson invented a process



This is an example of a brand renaming the entire category

to print images using an electrically charged drum and dry powder 'toner'. Haloid's 'founder' saw the promise in his invention and acquired it for commercial production. To differentiate the process, Haloid created the term Xerography which has Greek roots that mean 'dry writing', which eventually led to the name Xerox Corporation in 1961.

Apache

The Apache Software Foundation, that maintains the Apache HTTP server, draws its name in respect to the Native American Apache Nation. Also, the founders got started by applying patches to code written for the NCSA's httpd daemon. The result - 'A PATCHY' server. Yeah, we know.

And more

Explaining names of the likes of Facebook and Microsoft would be an insult to Digit readers. On the other hand, we did really run out of space with this one, so if you have any names and interesting stories behind them, let us know!



Robot to perch like bird

Researchers at the University of Bristol develop an RC plane with uniquely shaped wings that can reshape itself midflight. <http://dgit.in/Robotbird>



Sony's new A1E series TV

Sony's new Bravia TV has a 4K OLED display with no speakers. The sound comes from the screen itself. <http://dgit.in/A1EseriesTV>

What a lovely day!

Ah, Valentine's day, a day to celebrate and spend with your significant other, maybe do something special for them. Might we suggest some gifts? They're 100% guaranteed to give you results (they could be positive or negative though) ...



I love you like Kanye loves Kanye

How does one measure love? There's no standard unit or any means, in particular, to measure love... or is there? Everyone knows that if Kanye could marry himself, he would. (poor Kim). So if you want to convey that love to your significant other, what better way to do so than with this quote on a shirt or a cup or whatever.



The Boyfriend Pillow

We understand, not everyone has that special someone on Valentine's day. This particular pillow, however, is for the ladies. In the words of the store that sells it, it's "the perfect sleeping companion for lonely people. Feel the embrace of a real man without the snoring, smell, tossing or turning." Quite tempting, yes?



Fancy Wine Bottle (labels)

Everybody appreciates a good bottle of wine, especially on this special day or at least, a label stuck on it that makes it look special. But the joke's on you because the label ain't too special either. Introducing 'Chateau Neuf Du Crap' wine. The ideal gift for your vintage-wine-enthusiast significant other.



Grow your own Boyfriend!

Are you tired of your boyfriend or girlfriend? It can be a hassle, all the compromising, arguing and whatever else is involved... *ahem*. Moving on. We have the solution for you! Just grow your own SO (Significant Other) and all your problems will be solved. Drop this tiny thing into water and watch it grow over three whole days!



The Borat Mankini

This authentic Borat Mankini is the ideal gift for the man who loves to be the centre of attention at the beach or the pool (or anywhere really, but we'd advise against that). This 'must-have' beach-wear will attract all the ladies, the store assures us of this. And we totally agree, even Pamela A won't be able to stay away (hey, that rhymed).



Instant French Accent Spray

What's more romantic than the french accent? It's the country of love after all. There's got to be a reason why everyone swoons over the language and the accent, right? Well, whatever the reason, this here spearmint mouth spray is "100% unguaranteed by non-existing experts" to give you a french accent. Sold! We'll take 5.



Intel Project Alloy

Intel's new Project Alloy is a wearable headset that has a mixed combination of augmented and virtual reality. <http://dgit.in/Intelalloy>



Bribery!

Take the survey and stand a chance to win a cool Digit T-Shirt. 10 t-shirts to be given away. <http://dgit.in/dsurvey17>

Unwind

digit DIARY

We began the month with Nikhil Punjabi bidding us farewell, and all we could think of was "the year just started and we're already a man short, dammit!" Just kidding, we wish Nikhil the best wherever he goes next. Onwards!

We had our company offsite this month, this meant that everyone here at the test labs, except our Intern Yanger, were off to Noida for two days. Yes it was COLD! Also, we didn't have any hot water on day one. At least the cold water prepped us for the intense offsite sessions that would come next. We all got to simmer down in the evening, with some great bonding across the entire Digit team over music, food, and drinks. Of course, The boss man wouldn't have any excuses, so we were back to meeting mode the very next day. Only, we underestimated Delhi traffic and almost missed our evening flight, ALMOST. Wonder what Yanger was doing here the whole while with the test lab to himself...

We've started streaming our gaming sessions live to Facebook, which is mostly just CS:GO right now. Unfortunately, our poor internet connection(s) didn't have the bandwidth to handle our streams and we almost gave up... till we got a

The Digit SKOAR! board

Difficulty level : NCR Traffic
*Skills learned : Cold shower *NOT**
*Quote of the month : *Main rachu aaj, cham cham cham!**

- Babu Bengali

brand new internet connection that is. We swear Mithun even shed a tear or two when we did the speed test. Oh right – 60 Mbps my friends, 60 Mbps. MUAHAHAHAHA *ahem* sorry, high speed internet brings out the villain in us.

While thinking about games to stream, Warcraft 3 came up and suddenly everyone was playing Warcraft 3 again. Even the young grasshopper Yanger joined the fray. Little did we know that within a day he would easily best his mentors. But it isn't over, we'll get our revenge soon enough...

How we unwind



Merwans

We found a new place to eat! (Again, yes) We've mentioned this time and again but we're always on the lookout for great places to eat at (or rather, order from) and Merwans has just the right combination of tasty and cheap. Turns out, we're not the only ones who think so, because by the time we actually decide to order anything, they're already out of most of their stuff. Whatever of the leftovers we do manage to get though is pretty darn good, which is enough to ensure us being regulars for a good while to come.



PC, Laptop
Tablet, Mobile

सुरक्षा



92.72.70.70.50
98.22.88.25.62

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Features:

- Power Source: USB
- Battery Type: Lithium-Ion
- Output Power : 10W (1 USB output 2.1A MAX)
- Micro USB Charging
- LED Indicator
- Input: DC 5V/2.1A (MAX)
- Output : DC 5V/2.1A MAX (Auto Switch Mobile phone Dependent)
- Capacity: 11000 mAh
- Long life battery for 300 to 500 times charge discharge cycles



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