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Zen and the art of tech travel

As I sit in here in Central Park, with the awe inspiring New York City skyline forming the perfect backdrop for inspiration, I can't help but base my editorial on travel. I'm here on "official business" of course, but much to the team's envy and ire, there can only be so much business you can do when you're visiting a city like NYC!

Anyway, you might wonder what travel has to do with technology. A hell of a lot!

Foreign trips aren't uncommon for us at Digit, but this one was very different compared to say one of my first trips abroad – Taipei, Computex 2011 I believe. What was different about this most recent one? The pivotal role technology played through the entire sojourn.

If you think about it, 2011 isn't that long ago but I can't help but feel it was in a different era.

For this trip, right from mapping, planning my stay, identifying points of interest, and many of the other nitigrities, I couldn't have done it without my phone and the hundreds of services that have made travel a much easier proposition. Sure many of these services existed back then, most existed for certain when I went to SF last year and yet this time around, everything just worked seamlessly. The availability of these services on the all important screen – your smartphone – combined with improved battery life or rather more accurately, the availability of cheap and compact high capacity powerbanks, has taken everything from a lofty proof of concept level right down to everyday reality.

Travel Tech, if I could call it that, has matured. And just in the past year at that.

On this trip, Google Now was my tour guide, my friendly local contact, and my secretary. Right from reminding me when to leave from home to catch my flight to regular "things to do" cards featuring nearby attractions, to giving me my entire itinerary (big yay! to machine read mails), conversion rates, daily/hourly forecasts, and even news from back home (my heart goes out to our readers from in and around Nepal) – Google Now took care of everything.

In addition to whatever on-the-spot recommendations I was getting from Google Now, I also installed and tried out a couple of Guided Tour apps for the times when I wanted to go out on planned outings. For culinary expeditions there was Zagat, Yelp and even Foursquare, which gave some pretty nifty mood-based recommendations for not just food but shopping too.

Google Maps was another life saver. Apart from regular navigation, Google Maps allowed me to receive custom maps from friends who have lived in Manhattan. On one particular occasion I was able to easily find a little bakery in the Grand Central station's concourse using Google's Internal Map schematics. The bakery was marked out on a shared map for it's Banana Pudding, which by the way, was totally worth every overpriced cent.

It almost makes me wonder how people managed to get by without this Travel Tech all around. Maybe they had to actually talk to people to get around? The horror! *Gasp* No I'm kidding obviously, and yet there's an app for that too! Socialising, making friends on your trips, even specialised hookup apps for travellers. Ahem, not that I tried Tripr or Wingman. iSwear! (they're on iOS).

These travel apps and services – although impressive – are barely scratching the surface though. Perhaps in the future there will be this one app to rule all travel (Google Now comes close but it's not quite there yet). Imagine an all powerful app that integrates all of the above data points and based on your location and a bit of AI, tells you things like "hey it appears you're heading downtown on the 3 train towards East Village, why not switch to the Q train, step out into the Flatiron district and start a guided tour? Once you're done you can pick up a slice of Pizza from Artichoke which Mihir marked on the map he shared with you". Creepy? Maybe. Useful? For sure. Now imagine what else could be done with the Internet of Things kicking into full swing.

So that was my brief ode to how technology has yet again completely, and going forward, irrevocably infused itself into an important facet of everyday life – travel. I'm really excited and looking forward to seeing which other facets tech will conquer next. And I mean not just at the prototype level, or something only the privileged 0.1 percent of the world can afford or experience; no I'm talking about completely transforming the way we – the ordinary folk – do things. Healthcare? Home automation? What do you think?



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"Travel Tech, if I could call it that, has matured. And just in the past year at that."

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Jayesh Shinde
Manager – Test Centre
jayesh.shinde@digit.in

"Net should be neutral. In an ideal world. But we don't live in an ideal world, do we now?"

In our lives, the Internet has emerged as the single biggest agent of change – whether it's the way we communicate with each other, get work done, socialize, or discover new ways of making our lives fulfilling and enriching. The Internet has become the fundamental building block of the Digital Era as we know it in the 21st century. In its relatively short existence, the Internet isn't just a spider web of interconnected computers any longer; it's a way of life. And its transformative power knows no bounds. We all have come to accept and adjust to this reality.

What we don't realize about the Internet readily is that it's largely thanks to its widespread ubiquity and virtually non-existent entry barrier that it's transformed into not just a powerful cultural force, but also an economic reality with extremely high stakes involved. Telecom companies responsible for laying the foundation of Internet connectivity charge us a basic cost of access to the Internet — this is fine. But with third-party data services and solutions being increasingly favoured over traditional telephony functions, Internet driven entities are attracting all the money while the telcos are allegedly kept hung out to dry. Telcos, therefore, want to introduce a DTH / cable TV model to Internet services, charging both ends of the wire – us and our Web destinations.

And that is essentially the bone of contention, in violation of the Internet's fundamental fabric – all data is equal, should be treated equally. Net should be neutral. In an ideal world. But we don't live in an ideal world, do we now?

In a country like ours, Internet connectivity can bring about a dramatic positive change in the lives of the lesser privileged sections of our society. Initiatives like Internet.org, which aim to offer popular sections of the Web virtually free of cost to those who've never even heard of the Internet, can drastically increase Internet penetration in the country's villages. But there's a danger here of consumers of such services mistakenly assuming the Internet to be nothing but the free bucket of services that they can feed on. Discrimination here may not be down to exact bits or bytes, but it's discrimination between competing services – serving one over the other. Why should a communications company decide what a consumer consumes? Isn't that against consumerism? Their (the consumer's) lack of knowledge can't be exploited in exchange of free services – that's just morally wrong, anti-competitive and unfair trade.

If Net Neutrality ceases to exist, ISPs will hold all the power, and innovation will be stifled in the Age of the Internet Economy. And we all may be saying goodbye to the golden age of the Internet very soon. This is a disconcerting thought.

If ISPs were to come together and decide to raise prices for unilateral data access (just like OPEC sets international oil rates), we wouldn't have a choice but to pay more as consumers – just like people swear under their breath every time fuel prices rise, but they still pay more to get around. If Internet access is needed at all cost, you'll cough up the money no matter what. But would that satisfy corporate greed? And if power hungry ISPs and telcos are so worried about "over-the-top" services benefiting from a free ride on their Internet infrastructure, why can't they compete with them through their own substitute services?

I know it may not be realistic right now – building Facebook and Whatsapp clones – but that's essentially where we're heading towards in the future. Look how Netflix started as a video rental service, and now they don't just produce their own content to rival that of HBO's, it's also reshaping the TV industry as a whole. And it's doing so through the power of the Internet, keeping Comcast and other American ISPs at bay for now, shielded by Net Neutrality. But who's to say the next cycle of disruptive Internet services won't be created, owned and controlled by the ISPs? Holographic video calls developed by Airtel, or the mother of all online shopping portals developed by Vodafone, and so on. It's inevitable and bound to happen. Because the reverse is already happening, where an Internet company is trying to reshape the telecom sector (look up: Google Fi). As a consumer, this tussle and competition is just what the doctor ordered.

ISPs and telcos will have to reinvent, get their hands dirty and create the next wave of Internet services, or be satisfied with being as relevant as a paved road. Until the cracks appear...



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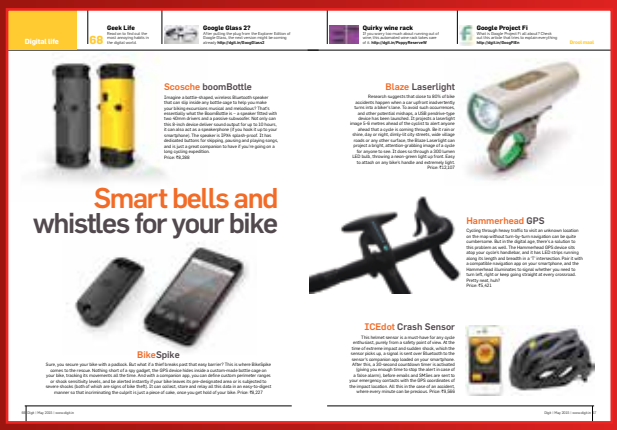
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In-App-ropriate

I assume you'll be reading this sometime after May 1, 2015. Apart from being Labour Day in India (and some other countries), it's a day that we've been told will be a first of its sort in technology. Fashion site, Myntra (owned by Flipkart) is supposed to pull down the shutters on its website and become an app-only entity. It's a bold move. And to be honest, I think we need such boldness in India. Too many companies are just too scared to take risks these days, and that stifles innovation and bores consumers.

That doesn't mean I think it will work.

Apple has been well known for locking you into its ecosystem and its products... So you want to watch a video on your phone? Not unless you transfer it from a system running iTunes! You want a different keyboard? *sniggers* (And yet, now Apple offers it.)

Before Apple, it was Microsoft. Go on, go ahead and pirate more, you miserable scallywag, but when you get to work, your company will have to pay me because you'll never know any other OS, and I'll laugh all the way to the bank. And I'll charge insane prices for my Office Suite too, just because I can! (Now, however, Office is cheap and Windows 10 is free.)

Here's the thing about monopolies. Like dictatorships, they eventually end – in flames, with screaming and gore, and swift mob justice. (Ask Yahoo!)

Remember the Google search monopoly? It still has a search monopoly, that may never change, but the rules of the game can change – as Microsoft found out with PCs. Google used to drive almost all of the traffic to popular sites. Now, it's a split between Google, Facebook and other social media sites. We didn't stop searching, we just started clicking on shared links more often than ever before.

It's in this regard that I think trying to lock people into a particular ecosystem or way of doing things is very risky. It still might work for Myntra (and Flipkart), but I have my reservations.

For starters, you're taking away discovery/impulse/casual buying. A friend shares a decent deal on a social networking site, and I click or tap it, and am told to install an app (assuming I don't already have it installed). To a commitment-phobe like me, that's expecting too much. Sure, this is modern India, but it retains its quaint oddities too. We want to sample the goods before we commit to them. We want to taste before we buy a kilo. We want to kick the tyres, even though we all know that the tyres are the least important of all. We want to know that we'll be buying regularly from you before we waste precious phone memory on your app.

Perhaps the Chinese phone army will ensure that almost everyone in India has a smartphone, and enough storage for hundreds of apps. Perhaps, Airtel will ensure that everyone gets free internet access (to only its choice of services, of course), and perhaps Myntra will succeed with flying colours despite no website. Or perhaps not.

Now, a Junglee app makes sense to me... actually, bad example. What I mean is an app like that, but not made by one of the companies with vested interests in selling you stuff. An app that would allow me to quickly compare offers on Amazon, Ebay, Snapdeal, etc to a seemingly-awesome-but-ending-in-10-minutes offer from Flipkart. That's an app with value, as far as I'm concerned.

Besides randomly discovering a deal, even when searching for a pre-decided product, I know I want to check out many sites. I may use an app to actually do the buying from whoever I feel is cheapest, or best, or delivers fastest – based on my unique requirement at the time.

Who are these people who browse for stuff in an app? What do you do after that? Open/download five apps for five different companies, search all of them and then buy?

Have we reached some sort of monopoly already, and brand bias for e-retailers as well? Are there people who actually say, "I don't care about price, I only buy from <insert retailer name here>"?

Trying to lock me into your app for something like buying, which by definition is a comparison game, is just in-app-ropriate, and destined to fail. Or maybe I'm part of a fast-dying, insignificant, minority...What do you think?



Robert Sovereign-Smith
Executive Editor
robert@digit.in

"Here's the thing about monopolies. Like dictatorships, they eventually end – in flames, with screaming and gore, and swift mob justice."

Liked or hated this column? Let me know at: *facebook.com/raaabo* | *@raaabo* | *robert@digit.in*

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dgt
It's back, and it's inside Digit. It's still a work in progress, but send us feedback about it. We're going to try and integrate it seamlessly, so your feedback will be valuable

Too bright?
Neptune is the only planet in the Solar System that actually emits more light than it receives from the Sun.

Feedback for the April 2015 issue of Digit



✉ Hello Team Digit,
Your magazine is my ultimate buying guide. From the day I've started reading your magazine my perceptions changed towards a lot of things. Apps, phones, tablets and even wallpapers! However, I feel that sometimes you guys are biased against particular companies. I saw that in the Appsutra section, many apps were shown to be only available on Android or iOS while their Windows Phone official apps are available. Plex, Telegram, Musixmatch, MX Player and VLC all are available officially on Windows Phone but there's no mention of it. Many times, it feels like you guys only support Android and iOS and completely want to ignore other platforms. This isn't expected from a reputed team like Digit.

– Asit Khanda

Hi Asit,
Yes you're right. It may have been a slight oversight on our part to not mention the download links for Windows Phone as well. Over the years though, we've noticed that Windows Phone users are quite resourceful and would easily find the said apps on the WP Marketplace like you have. The other reason was that often when we zeroed in on an app that we wanted to showcase, the official apps weren't available on the platform. Yes, there were substitutes and there were WP exclusives that weren't available on the other platforms, but covering these outliers would've required us to change the layout and format to a great extent. How about we do a round-up specially for Windows Phone in the upcoming issues? We'll do more justice to it that way.

I'm elaborating in such detail hoping to dispel the notion that we're biased. Sure, we have preferences (who doesn't?), but we're not biased. Would a biased magazine declare BB 10 to be the world's best mobile OS?

– Siddharth

✉ Hello Team Digit,
I'm a 17 year-old-geek and a huge fan of yours. This is my first interaction with you guys and I'd like to share my story. I was introduced to the world of Digit by my dad, back when I was 12. (He's equally interested and as acquainted with tech as I am!) At that time, I was only interested in the DVDs. But as I grew up, I understood that the real treasure lies in the magazine. Since then, there's been no turning back. I never forget to get my copy every month. And yes, I'm planning to subscribe too. Reading Digit has always been a super awesome experience. I never buy a gadget without going through a couple of copies of The No.1 Tech Magazine. The product reviews and the Spend Smart section save me the trouble of endlessly searching and comparing products on the internet. Equally great is the rest of the magazine (especially the editorials), the FTs, DVDs, DTG, the posters and....let's just say everything! I really appreciate your efforts behind every issue. Hats off to you guys. Keep up the good work.

– Chaitanya Dave

Thanks for your feedback Chaitanya. It means a lot to the team.

– Robert

✉ Hello Digit,
I am a 13-year-old teenager and a big fan of yours. In fact, I'm so inspired by your team that I want to be a part of your testing rig when I grow up. So please tell me the qualifications I need to be there and whether it requires good looks (I'm writing this because Siddharth Bhaiya, Jayesh Bhaiya And Robert Bhaiya are all handsome and good looking).

I've been reading Digit since I was 3 years old (well, not reading actually but just turning over the pages and seeing the photos) and since then, I'm a big follower of yours.

I just have a few suggestions/complaints:

1. I know that you already packed 8 gigs of data in your DVD and don't have space for the games but please don't provide Steam games as I've heard a lot of complaints about it and in my point of view not all users in all cities have unlimited internet connection or fast internet connection, so please look into it.
2. I just loved your April issue (The Appsutra), but I was disappointed that only one app was listed for Windows Phone as I don't have a phone of my own, so I have to use my mother's WP phone. So, I request you to please test apps available for Windows Phone also.

Please guide me on these points:

1. I'm planning to buy a smartphone on 11th May and the budget given by my mom is ₹7,000-7,500. So please compare some smartphones within this range for slightly hardcore users like me.

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Funnely enough...
The Titanic actually had only 3 functional funnels. The fourth one was a fake, added to make the ship seem more powerful than it actually was.

Dressed in Purple
Purple was originally considered to be a "Royal" colour because its extraction was extremely expensive at that time.

LETTER OF THE MONTH

✉ Hi, Team Digit!
I'm a reader of your magazine since one and half years now. The stuff you've been doing is just way too cool, though I have seen some things which may disappoint a new user:

1. Below average DVD UI
Please improve it, it just looks way too old. When fiddling around, I actually found out that the software dates back to 2011! I know you are working, but please quicken it up. It seems kinda irritating seeing an iPad of '11...

2. Cluttered-ness of DGT
The DGT section (Desire, Greed, Temptation) of the magazine seems wwwaaayyy too stuffed. It seems like you guys sorta ran out of paper! I do know that you guys are trying your best to keep the cost down and content up, but some people like me are willing to pay a few extra bucks for an awesome-r experience.

3. Cluttered-ness and lagging of digit.in
This is the only real down-point of the content of digit. The rest are things I can live with, but the website is something which drives me nuts. Please reduce the lag. Maybe you can offer a "Basic HTML" view, like Gmail. Additionally, the content on the site also feels a little cluttered.

4. Disappearance of a DVD
Is it that you only sent one DVD with the previous issue, or that one of them fell out while reaching me? Please look into the issue ;-).

...Done criticizing



Now, comes the part where I flatter ye out, so get ready...

1. Good quantity
Wow! The amount of content you put in each magazine is just WOW! I may have even missed 50-100 articles in the previous 10 issues!

2. Great style of writing
These may be the only books which don't get me bored. The rest are informative, you are FUN and informative! And the Digit Diary is also above average. Just kidding, it's... inexplicable!

3. Mind-blowing Fast Tracks
The last Fast Track, Raspberry Pi, was just insanely cool. Like, are you guys humans? It has encouraged me to get a Pi and code.

(God, why is it so hard to write about what you like?)

...Done flattering

Finally, I'm gonna... Give suggestions!

1. Expansion of areas (of magazine)
How about covering music trends? Or comics? Or food? If you can include any of those, it'll be great! And maybe they could be put under a section called "Trend Watch".

2. Expansion of SKOAR!
SKOAR seems way too short. Twenty-something pages seem like an ad-booklet. Pleeease expand it.

3. Expansion of Dev-Sector
Yes, I know, the dev-sector is already being expanded. But big-inize the amount of platforms whose development you cover. You haven't covered iOS for a long while, or Windows Phone, or BlackBerry. Wait, have you ever covered BlackBerry? Yay!

New ideas!

4. Addition of a section on Tech Personalities
No, not interviews. Add a section where you describe small or big events that may have happened with people like Steve Jobs, Pranav Mistry, etc. Or maybe something about them. The articles could go like "The discovery of Sixth-Sense", or "What was the person like who put a dent in the universe?". (Maybe you'll have to create a separate book for these expansions ;P)

5. Changeable DVD UI
Just popped in my head! What if we can change the User Interface of the DVD? Like click on a drop-down menu, you get presented with "Windows, Android, iOS", click on one, and voila!

Overall, I'll give your mag a rating of... 4.2 out of 5.

And, keep up the good work.

Thanks for reading this (if you did so) and for making and managing Digit

– Vedaant Arya

Excellent suggestions Vedaant. We give you 5 out of 5 for sure! And since we've spoken to you a few times after this mail, we're looking forward to the interface you're creating. If it's functional and not too buggy we'd be happy to showcase it for a month. Go for it, it will be awesome for your CV anyway.

– Robert

2. I also plan to upgrade my PC rig just to play GTA V. Here's the list of my current rig and things I can enhance to play GTA V on moderate settings:
- Windows 7 [pirated]
- Intel HD Graphics
- Core i3
- No graphics card
- 4 gigs of RAM
- 500 GB hard disk
- Zenith 4:3 LED Z17 monitor

Please give your suggestions, but don't take the prices too high. I guess that's it for today. Bye, and keep feeding tech lovers like me.

– Kshipra Jadav

Hi Kshipra!
It's fascinating that you've been with Digit since you were a baby!

By calling us good looking you've invoked the classic Form vs. Function debate. For us, function always trumps form, just like it does in most of our reviews. In other words, all you need is dedication and a curious mind to work at Digit – looks don't matter (as is evident from our column photographs). Honestly you're much too kind.

Steam is now so popular as a digital distribution platform that many developers are releasing games only through it. Each month, we're hard-pressed to find games "in the wild" that function as standalone installs. Rest assured though, our DVD guy, Abhijit is working double time to hunt them all down for you.

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OTG Flash Drive **AH171**



OTG Flash Drive **AH172**



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Looking for distributors across India

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93% atheist
Did you know that only 7% of the people in China are religious? It's the least religious country in the world, as far as we're aware!



Stop mooning!
67 moons for Jupiter, 62 for Saturn, 27 for Uranus, 14 for Neptune and even 2 for Mars! Why do we only have one?

Your next query about Windows Phone apps is related to your phone buying query. I'd suggest not bothering with Windows Phone, none of us here do. Your own phone should be an Android. We liked the Xiaomi Redmi 2 quite a bit. Trouble is, it's always out of stock. However, since you plan to make the purchase a month later, you could register for it and try your luck. If not, the Moto E (2nd gen) and Lenovo A6000 make for good substitutes as well.

As for your PC upgrade, you'll need a little more RAM (additional 4GB, and ensure that the specifications match that of your existing module. It should cost Rs. 2.5k roughly) and a graphics card would do your rig justice. Preferably, a GTX 660 or an R9 270X which should be available for around Rs.10,000. There's a possibility that your i3 might bottleneck at certain moments in the game despite the upgrade but they'll be too few to be a bother.

Keep in touch. Happy reading.

– Siddharth

✉ Hi Sid
I'm a fan of the magazine from Kashmir (where I get the magazine 2 weeks after it hits shelves in Mumbai) and have been reading your magazine for the last 2 years. I realise all of this may sound whiney and I think it's just me but I really don't like that Digit is moving a bit towards automobiles. I mean, I admire cars too but the main reason I wait for a Digit every month is the tech. All your reviews are very helpful, but I notice that the number of products you test have gone down. I'd also love it if the 'Killer Rigs' were updated. Keep reviewing stuff and keep spreading the love.

– Mufti Azan

Oh come now Mufti, there's more to life than just gadgets, right? All of us in the team have passions that go beyond just PC or Mobile. Isn't "auto" technology too after all?

I agree that the number of products we feature in our comparison tests have gone down, but it's not because we're "distracted" with cars and bikes, if that's what you're thinking. The real reason is that manufacturers have stopped sending those many products to us at once. We've also had to look at new and emerging categories like "selfie phones" instead of a simple categorisation like say "Android Phones", which would probably feature hundreds of models. We've also had to look at narrower price bands such as "GPUs under 10k" instead of the earlier tests where we'd feature GPUs across the board, resulting in numbers upwards of 50 sometimes.

– Siddharth

✉ Follow up correspondence:
I really appreciate that you took the time to reply. I never said that I hated automobiles or didn't want to see any of them. I just meant to say that it would be nice if you toned those down a bit. Also, some of your links don't work. I really dont want to come off as an angry teenager always looking for mistakes, but I really hate when I have taken the time to type in a link of something interesting and it doesn't work. The rest is just perfection. I don't remember the links which were broken, but I'll look for them. It's usually the really crazy stuff that catches my eye.

Keep posting the crazy.

– Mufti

My apologies for the broken links, Mufti. But crazy you ask and crazy you shall receive.

– Siddharth

✉ Hey Team Digit!
This mail is from a great fan of your magazine. This is probably the first time I'm writing to you as I'm a new subscriber of this awesome magazine. First, let me tell you how I came across your magazine. I'm Class 10 student in a good reputation school. I first saw the name 'Digit' on Ch@t on my Samsung Galaxy S5, however I thought that it's just another page to help pass time when you're bored. However, when I opened that page, it was as if I was mesmerised by my phone. And to my surprise, the next day when I was at my school, during a free period, I was just recalling the articles I'd read the previous day when I saw my friend Shivam reading your magazine. I took it from him. I just can't recall which edition it was, but the front cover had the word "censored" written on it, which attracted my attention. By the time I flipped some pages, I was completely drowned into it. You all are just awesome (maybe this word doesn't do you enough justice). So without wasting time, I tore the subscription form and filled it. When I got home, I told my dad, "I want to buy an awesome technology magazine. Please complete the steps as written here." My dad filled a cheque and attached it and I posted it.

Now, let me tell you my opinion about the magazine. As I already described, it's an awesome technology magazine so there are a few things that I didn't like. Here they are:

1. Please add cash on delivery as a payment option for subscribers. It can help you make a thousand new subscribers. Many people fear sending a cheque or card number as someone may see it during its posting formalities.
2. More importantly, the packaging of this magazine makes it very complex to open. There are a lot of tapes.

But don't think that these demerits will result in the decrease in the population of its readers. It will serve you well, in fact, if you could see to these problems.

I have some requests: Please include posters of some cool games like the Call Of Duty series. Also, please review some of the best Android apps and hardcore games.

Continue to spread information about technology.

– Ayush Singh

Hi Ayush,
We're always happy to receive new subscribers. Welcome to the club!

Your idea for a cash-on-delivery option is ane excellent one and we've been looking at ways to implement it asap. We've also been working on ways to streamline the packaging, but as you may have noticed, there's so much content that it's hard to keep it all tied down!

Regarding the game reviews, well, check out our brand new website at http://skoar.digit.in! It's still in beta, but should provide you with all the mobile gaming content that you'll ever need!

– Anirudh Regidi

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HTC Desire 820S



The HTC Desire 820s is the latest addition to HTC's Desire range of smartphones. HTC has combined the latest hardware from MediTek with its youthful design language making it a worthy option in its segment. The phone is powered by the new 1.7GHz MediaTek SoC, the MT 6752. This is a noteworthy improvement over earlier MediaTek SoCs as it is much more power efficient and thermally sound. There is 2GB of RAM on-board as well as 16GB of internal storage which is further expandable to 32GB via a microSD card. On the front you will find a 5.5 display which is one of the best displays available in its category. It has good viewing angles and colour saturation. It is an HD display which is adequate to watch Full HD movies, play games or read an ebook. The screen is flanked on the top and bottom by two stereo speakers which produce decent sound output. Going around the back, there is the 13MP rear shooter which is excellent. Images taken by the camera are sharp, have true colour reproduction and manage background noise well. The phone has Dual-SIM capabilities and packs a fairly large 2600 mAh battery which easily lasts a day even under heavy usage.

Vox Jumbo Portable Charger 16000mAh USB Charger

Keeping your gadgets charged will be the last thing on your mind this summer with this massive 16000mAh power bank that will ensure you have enough power to keep your phone charged for a week! The Vox Jumbo Portable Charger 16000mAh USB Charger Power has a large battery so that you can charge your phone at least thrice and it also has two USB ports so that you can charge two devices at a time. It supports fast-charging and charges easily and rapidly. It has an efficient boost converter and features a battery protection IC. The powerbank also features an inbuilt LED torch and LED light indicator.



INfocus M330

InFocus is a new mobile company in the Indian smartphone scene. It earlier came up with the M2 which was aimed at the lower end of the budget segment. Now the company has come out with the InFocus M330 which focuses on the highly contested sub-10k mobile segment. The M330 is a phablet with a 5.5-inch display that uses an IPS LCD panel which has a resolution of 1280 x 720 pixels. Powering the device is a 1.7GHz MediaTek SOC and 2GB of RAM. This is a powerful SoC and can handle multiple tasks and Full HD videos with ease. The 16GB on-board storage is further expandable to 64GB via a microSD card. At the back, there is a 13MP rear shooter with autofocus and LED Flash. The camera features continuous burst mode and can shoot videos at 30fps in Full HD. On the front, it has an equally good 8MP front-facing camera. The smartphone supports Dual-SIM and 3G data connectivity. It features a large 3100mAh battery which is one of the largest batteries available in a sub-10k smartphone.



Cooler Master Notepal CMC3 Cooling Pad

Gamers planning on marathon gaming sessions this summer can now keep their gaming laptops running cool and quiet, thanks to this CM cooling pad, a perfect weapon to battle the heat! Cooler Master is a name synonymous with gaming peripherals and the Notepal CMC3 is a must have accessory for laptop gamers. The CMC3 features a large 200mm fan which redirects air underneath the laptop making it cooler. It is designed in such a way that the heat is further dissipated from either side. The cooler is made up of high quality plastic and comes with four rubber feet to give users much required stability while gaming. The whole cooler sits slightly raised on its feet to accommodate proper airflow from the large 200mm fan. The laptop cooler can support up to 15-inch laptops and is easily powered by a single USB. It consumes only 1.5W which makes the 200mm run at a constant fan speed of 700 R.P.M.





Samsung Galaxy Grand Max

A selfie phone will go a long way in ensuring a memorable summer. Capture your vacation moments and share it with your friends with this latest big screen smartphone from Samsung. The Samsung Galaxy Grand Max is a value offering with a 13MP rear camera and a 5MP front facing camera. This, combined with the fairly large 5.25-inch display, makes it a good companion for your entertainment needs. The display has a 1280 x 720p HD resolution with good viewing angles and is adequate for watching high definition videos. To power this device, Samsung has put the Qualcomm Snapdragon 410 SoC in place. This is a fairly new 64-bit SoC from Qualcomm for the budget segment smart devices. The SoC comprises of a 1.2GHz quad-core processor and the Adreno 306 GPU. It features 1.5GB of RAM and 16GB of internal storage which are expandable via microSD cards up to 64GB. The 13MP rear camera supports both touch-focus and auto-focus, smile detection and HDR. On the front, there is a 5MP camera which is equally good and both cameras can record videos in Full HD at 30fps. The phone has a single SIM slot and features next gen 4G capabilities. Lastly, the Samsung Galaxy Grand Max runs Android 4.4 Kitkat out of the box.

Micromax 50C5500FHD 124 cm (49) Full HD LED Television

Movie buffs and couch potatoes, who'd prefer to stay indoors this summer can upgrade their entertainment center with this big screen Full HD LED TV that comes with an extremely affordable price tag. Big screen entertainment is no longer an expensive affair! The 49-inch Full HD LED television from Micromax is a good option to buy this IPL season. The TV features AVEA technology (Audio Visual Entertainment Architecture) which takes your TV viewing experience closer to real life. The panel has a dynamic contrast ratio of 1200:1 and has good colour reproduction. The TV features two HDMI ports as well as 2 USB ports so that you can play your own content anytime.



Dell Inspiron 15 3543 Notebook (5th Gen Intel Core i5- 8GB RAM- 1TB HDD- 15.6 in- Windows 8.1)



The Dell Inspiron series of laptops are a great combination of good hardware and affordable pricing. The Dell Inspiron 15 3543 Notebook is a great example of the same. For the 15.6-in display, Dell has gone with a resolution of 1366 x 768p. This latest laptop from Dell features new gen hardware at a very affordable price. It is powered by the new 5th Intel Core i5 processor which offers a nice balance of processing power and power consumption. The processor has a clock speed of 2.7GHz and a very efficient 15W TDP. Further, it features 8GB of RAM and 1TB of HDD storage. Graphics are handled by an Nvidia GeForce 820M card with 2GB of VRAM. Dell makes one of the best keyboards in the industry and the keyboard on the Dell Inspiron 15 3543 is no different.

snapdeal FIND ALL THESE GADGETS ON SNAPDEAL **AND SAVE BIG**

HTC Re



HTC Re is HTC's take on what a small action cam should look like. The camera is compatible with both Android devices as well as iOS devices. The Re connects seamlessly with your device with the help of HTC's Re camera app. It has a 16MP CMOS sensor and a super wide 142 degree angle lens with f/2.8 aperture. It can shoot videos in Full HD at 30fps and 720p HD slow motion videos. The camera can connect over Bluetooth 4.0, Wi-Fi and Wi-Fi Direct. The Re uses a microUSB port for charging as well as connecting to PC. It also has a microSD card slot and tripod hole. It has an 820mAh battery which is good for a few hours of video recording. The Re is designed to be used with one hand and features waterproof construction, so underwater photography is now easier. The HTC Re is available for Rs. 9,990.

iBall slide WQ32 with Keyboard

No need to carry your laptop on your summer holiday; instead, get this fully loaded Windows 8.1 tablet with 3G for just Rs. 9,999. The iBall Slide WQ32 is a stylish yet powerful tablet running on Windows 8.1. It is powered by a 1.83GHz quad-core Intel Atom Z3735D processor which is combined with 2GB of RAM. The tablet can handle HD movies and games with ease. The 8-inch IPS HD display has a resolution of 1280 x 800p and is bright and offers nice viewing angles. The WQ32 offers 16GB of internal storage which can be further expanded via microSD cards up to 64GB. The tablet is ergonomic to hold and can remain connected on the move via a 3G SIM card. The tablet also features two cameras- a 5MP one at the rear and a 2MP snapper on the front.



Yamaha soundbar

To complement your big screen TV, get yourself a cracker of a deal with this Yamaha soundbar, which supports Bluetooth wireless connectivity, and conveniently connect your phones and laptops to ensure you have a blast! The Yamaha YAS -103 is a good option if you want to upgrade the sound quality of your TV set up. The YAS-103 comes with integrated dual front speakers and dual built-in subwoofers. It uses a dual-driver subwoofer system which delivers powerful bass sounds. The soundbar has a very slim design so that it can be easily kept beneath your TV.



Samsung Gear Circle

This summer, get rid of annoying cables with the Samsung Gear Circle to get high quality wireless music while upping your style quotient. The earphones connect over Bluetooth to the device of your choice and rest on your neck when you wear them. Whenever you receive a call, it gently vibrates on your neck making you aware of the incoming call. On top of that, the Samsung Gear Circle feature text-to-speech notifications. These earphones feature an intuitive swipe and touch based interface. These are sweat and splash resistant so they can be used during workouts as well. The two ends of the earphones have magnets so when not in use, you can put the two ends together and they will remain in place.



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dgt

TECHNOLOGY WITH STYLE

GREED

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

THIS MONTH: AN ANKLE EXOSKELETON, BOLT SKATEBOARD with DYNAMO, SONY CYBERSHOT HX90V, and more...

TEMPTATION

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

THIS MONTH: LED ZEPPELIN OVERLEAD, FURIOUS 7, WALK, DIY APPLE II WATCH, UPCOMING MARVEL TV SERIES, and more...



Hoop Earphones

It's bright orange and only costs 29 Euro (₹1,959) and is made by a Swedish company called Coloud. The brighter thing is that it's specially designed for Microsoft's Lumia series of smartphones and work wonderfully with their range of affordable devices. The deal only gets brighter as you find out that the earphones are designed by Microsoft. Come on Lumia fans, you certainly can't think of missing this!

DESIRE

Amazon Dash

Restocked at the touch of a button

Has this ever happened to you? You're doing laundry and you use up the last of your soap. You tell yourself that you need to buy more, but you forgot and a week later, you have a date with the cute girl from accounting and nothing to wear that reveals your dungeons and dragons playing, taco eating dark side. Amazon, has the solution to your problem. The Dash button is an unobtrusive little button that's only available to Amazon Prime subscribers that pairs with the Amazon app on your smartphone. If you run out of anything, just find the Dash that's meant for that product and at the push of a button, you've ensured that a refill is on its way. All you need to do is pair it with your smart device through Wi-Fi and when you've pressed the button, you will receive a notification saying your order has been placed. Cancel it with just a tap and keeping kids in mind, Amazon have ensured that it it doesn't respond to random clicks until delivery. If only they had a tie-up with microwaveable food products.



Rice-sized computer



At just one millimeter cubed, the Michigan Micro Mote is the smallest computer built ever. The little computer can take pictures, sense pressure and do more.

OnePlus DR-1

Chinese smartphone manufacturer, OnePlus pulled the wraps off the smallest remote controlled drone in the world. You can pick it up from their website for $19.99. Sadly no sign of it coming here though. Fingers crossed.

Klingon on Duolingo

The language popularized by Star Trek franchise is much loved, and popular language learning portal, Duolingo just announced free Klingon lessons for anyone who wants to hone their Klingon skills.

BMW on Amazon Japan

When Amazon was talking about being able to find everything from A to Z, they weren't kidding. At least not for the letter 'B', because you can now buy the BMW i3 off the Japanese website. Only in Japan!

Surface 3

'Tis more than a scratch on the surface. Finally, Microsoft sort of gets it.



Microsoft has spent the last three years much like Porsche has spent the last 50. By reinventing cars that have their centre of gravity at the back (where the engine is) over each subsequent generation of the 911, they've struck gold. Microsoft applied the same formula to the Surface Pro and in its third iteration, they have a winner in their hands. With the same learnings, Microsoft's latest offering is the Surface 3, a tablet with a proper copy of Windows 8.1, a Cherry Trail Atom processor from Intel and the ability to run any x86 based program. While the Surface RT and its successor, the Surface 2 were stuck with apps on the Windows Store and were basically tablets, the Surface 3 however – once docked that is – becomes a low-cost full-fledged computer with impeccable build quality that you can take anywhere.

While the Surface 3 may seem, at first glance, like the Surface 2, it's actually thinner and lighter than the predecessor. You'll still find the same matte aluminium finish flushed all along its screen's surface, which can be paired with an optional keyboard in two shades of blue and shade of red and silver each. The full HD screen is also a little bigger than before and resides in a more portrait-friendly 3:2 ratio. The Surface 3 also comes with an optional stylus featuring the same technology from the Surface Pro 3. While it's not an iPad killer, and was never meant to be one, it still puts up a pretty decent fight in the tablet-laptop convergence space. Seems like a winning formula to us.

SPECIFICATIONS
Screen: 10.8-inch multi-touch full HD Display | **RAM:** Up to 4GB | **Storage:** Up to 128 GB SSD | **Processor:** 1.6 GHz quad-core Atom processor | **Battery:** Up to 10 hours
Price: $499 (₹31,211)



Hisense Chromebook

In an era where laptops running glorified web browsers can cost $1,000 *coughChromebookPixelcough*, it's both refreshing and unnerving to see one that's at the bottom end of the price scale and treads the budget tablet segment. But, the Hisense Chromebook is no dud. But it's no winner either. It plays safe, does what's expected. Looks better than expected and goes back home. If you're looking for a laptop and you're strapped for cash, this is your pick and you won't be disappointed. It's got pretty decent specs what with a 1.8 GHz quad core Rockchip processor and 2 GB RAM. It also offers two USB ports and a proper SD card reader. The only thing about this Chromebook that truly lives up to the price tag though is the screen.

SPECIFICATIONS
Screen: 11-inch 1366x786 pixels, 135 ppi | **Processor:** 1.8 GHz quad core RockchipRK 3288 | **Memory:** 2GB DDR3 | **Storage:** 16 GB eMMC SSD | **Battery:** Up to 8.5 hours
Price: $149 (₹9,319)

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Archer C20 Details

3 Year Warranty

Olympus OM-D EM-5 Mark II

The return of the proverbial king



When Olympus launched the OM-D E-M5 two years ago, it was the best Micro Four Thirds camera you could buy. It was light, gave you stunning images and the five axis IS meant that you could shoot in low light, with legacy lenses (with an adaptor of course) and still not worry about image quality. It had the fastest AF system and was completely weather sealed. Now, Olympus has taken things a step up and made it more video friendly, while giving it a few cosmetic upgrades too. While the Mark II comes with the same sensor as the Mark I, it does however get a new TruePic VII processor, an 81 point AF, a fully articulating 3-inch touch screen with better resolution, a time lapse mode and an image stitch option where eight images are stitched together while the sensor shifts in four directions and you get a 40 MP image. You also get 1080p video at a 77 Mbps bitrate and IS system that works with video too.

Cosmetically, the Mark II features a more pronounced grip, though not as pronounced as the Olympus OM-D EM-1. The shutter speed and aperture dials are easier to use and the shooting mode dial gets a well needed button that requires pressing before switching modes. The body has even better weather sealing and there are plenty of buttons offering customization, making it easy to use and set up to your liking.

SPECIFICATIONS

Sensor: 16.1 MP Micro Four Thirds | **AF:** 81 point auto focus | **Video:** 1080p at up to 60 fps | **Shutter speed:** 1/8000 sec(mechanical) 1/16000 (electronic) | **Burst Mode:** 10fps (5fps with continuous AF)

Price: ₹74,990 (body only)



Nikon 1 J5

Nikon's most exciting mirrorless

Nikon's 1 series of mirrorless cameras have been a bit of a damp squib so far. While Nikon have religiously launched a new camera based around it's 1-inch CX sensor system, progress has been slow and the results have left much to be desired. That is, until Nikon launched the Nikon 1 J5. With a 20.1 MP backside illuminated CMOS sensor, this Nikon is serious about what it wants. From having two command dials to 171 point hybrid AF, a 20 fps burst mode, 4K video, Wi-Fi and NFC, this camera means business and wants to be taken seriously in the mirrorless battle that more and more players are eyeing after Olympus, Sony and Panasonic. It also features manual controls, PSAM exposure modes and a 180 degree articulating screen.

SPECIFICATIONS

Sensor: 1-inch 20.1 MP BSI CMOS | **AF:** 171 point hybrid AF with 105 phase-detect points | **Video:** 4K at 15 fps, 1080p at up to 60 fps, 720p at up to 120 fps | **Screen:** 3-inch 1,037k-dot touch LCD display with a 180-degree tilt

Price: ₹31,500 (body only)

DJI Phantom 3

The year of the drone



DJI have been making drones for a few years now and seem to have made a name for themselves when it comes to developing video shooting drones. Their latest $1300 offering is the DJI Phantom 3 Professional and it shoots 4K video and more. The kit is pretty standard at first glance. There's 4K video, at 24 or 30 fps, 1080p video at up to 60 fps, gimbals to keep the camera steady and four rotors to take it up to speeds of 56 kmph. What's really unique about the Phantom 3 is the fact that it can be used indoors without breaking the rotors or hurting your cat. Using an ultrasound ground-facing positioning system and cameras, the Phantom 3 can identify what it's flying over. Inside is a ½.3" Sony sensor and can shoot 12 MP still images. This is the same sensor that DJI use on their professional grade drone, the DJI Inspire 1. The only catch here though is the fact that the camera on the Phantom 3 can't be removed. Unlike the GoPro and its 170 degree angle of view, the Phantom 3 only features a 94 degree FOV. While this may seem narrower, the plus side is that the footage will have much less distortion and still manage to capture a good chunk of what's ahead.

The Phantom 3 comes with a controlled to which you can attach your smartphone or tablet. While the Phantom 3's movements can be controlled with the remote, the smartphone or tablet can be used to view the video footage and make more adjustments to the Phantom 3's flight using the DJI app.

If you're willing to forgo the 4K, there's a cheaper Phantom 3 Advanced that you can pick up for about $300 less. Both model also come with a nifty feature that makes them automatically land from where they took off in case the battery runs out. No more dive bombing drones then!

SPECIFICATIONS

Sensor: ½.3-inch CMOS with 3-axis gimbal head | **Top Speed:** 53 kmph | **Battery:** 4480 mAh Li-ion | **Battery life:** 23 minutes of flight
Price: $1000 and $1260 (₹62,000 to ₹78,500)



Super Spy Ultra High Power Zoom 80X Telescope



With a name like that you can't go wrong! With smartphone cameras getting better by the beat, it's only natural that somebody in China decides they need to step in and help the world out. While a magnification of 80 times would be brilliant for people interested in shooting pictures of birds, it seems like this monster of a lens is meant to shoot pictures of a different kind of birds. Jokes aside, this lens has a focal length of about 200 mm and costs $220 (₹13,700), making it an OK deal, considering the potential if used for good. Out of the box the Super Spy Ultra High Power Zoom 80X Telescope comes with an iPhone case, a pouch (into which the telescope can be stored after the barrels slide into each other),a mount and a tripod. You could use the lens without a tripod, but we really wouldn't recommend it though.

Olio Smartwatch

It's not everyday that a smartwatch comes along that makes people look up and take notice. While the Urbana is nowhere near the usual ragtag bunch decked up in plastic and silicone, what really sets it apart is the UI. Featuring a unique cloud based system that's written on the lines of President Obama's 'Yes, No and Maybe' system of memos, the Olio Smartwatch promises to learn from your preferences. But, what's most intriguing about it is that it also promises not to disturb you with constant notifications. Instead, it lets you know every now and then (which can be predefined) that you've received notifications. The watch face displays the notifications using lines of different lengths. The longer the line, the more the notifications. It's available for pre-order now for $595 (₹37,000) and works with Android and iOS. Also, its robust build quality, unbreakable crystal face and the cloud based processing promise longer lasting life.



Vector

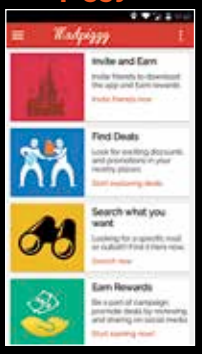
A smartwatch for the month



Cutting right to the chase, the smartwatch has a power-saving monochrome display as it trump card and is in fact we're talking about two watches named the Luna and the Meridian. Featuring round and rectangular displays respectively, both watches are retro chic and the really nice thing about these watches is that they also work with Windows Phones.

APP WATCH

Madpiggy



Madpiggy lets you search for deals at retail stores and shopping malls based on your location. The app has a neat UI that lets you browse all the retail outlets around you at any given point in time, and also lists out time-sensitive deals from e-commerce shopping sites. As you shop for deals and post in reviews, you'll earn reward points that you can redeem later, so the good stuff is extended over a period of time. The app is expanding to different cities and is currently only active in the Delhi/NCR region – only a matter of time before other locations in India are good to go. Looking ambitious, Madpiggy might catch up with the consumers only if they get more merchants on board, displaying their deals and discounts.

Android: http://dgit.in/MadpiggyAnd
iOS: http://dgit.in/MadpiggyiOS

Google Handwriting Input



Google Handwriting Input is the most accurate handwriting recognition app that we have come across, hands down. The app currently supports 82 languages in 20 distinct scripts, and also works with both printed and cursive writing. You won't be needing a stylus and the interesting part is that it also supports emojis by drawing them. We tried scribbling something on the app's screen in Devanagiri, and lo and behold it did make recognize almost all of what we tried to write. Pretty impressive. So if you are tired of entering text using the keyboard, or just want to fiddle around with the handwriting input, go ahead and give it a try.

Android: http://dgit.in/GoogHandIN

Flipd



Flipd is simply a lockscreen that unlocks only after the timer that you have set runs out. Once you have been locked out, you won't be able to browse through your phone or the other apps. You will only be able to make calls to the added emergency numbers and receive incoming calls. The app also lets you set auto-response messages that replies to your text messages. Another interesting feature of the app is the remote lock, that lets you lock your friends' phone from your phone through the app. Quite an useful app when you're out with friends or while studying..

Android: http://dgit.in/Flipd

NASA BRINGS REAL WORLD PROBLEMS FOR INDIAN YOUNGSTERS TO SOLVE

by Prasid Banerjee



Competitors present their projects in front of the judges.



Winners Amit Sharma and Arjit Saxena receiving their certificates from the judges.

You know how they say NASA is filled with Indians? Well, they may have a few more to come. The International Space Apps Challenge by NASA was held in Delhi this month. The event invites developers, many in their early 20s, to come and design apps for NASA. It's what we all know as a hackathon, and NASA arranged for a bunch of challenges, including Robotics, Outer Space, Humans and more. The projects would be judged at a global level by NASA, based on Best Use of Hardware, Best Use of Data, Most Inspiring, Galactic Impact, Best Mission Concept. Two winners would be chosen from each chapter, with an additional People's Choice Award as well.

Let's not dwell on the rules though, there's more to this than that. The winners of the Delhi chapter would go on to compete at the global level, against chosen candidates from all over the world.

There were two winners in the Delhi chapter. The judges chose a project named Spock and another named Glove Above. In fact, Glove Above also took away the People's Choice Award with them. Both space gloves, they deal with different situations. While Glove Above focuses on recreational and emergency solutions for astronauts, Spock is arguably the 'cooler' of the two projects (and not just because of the Star Trek reference), not taking anything away from its usefulness and importance.

Spock incorporates voice control and gesture mapping, in order to deliver information to the astronaut, while in place. In the first prototype, which the team had come up with, in just over 24 hours mind you, they fitted a mobile phone along with some electrodes into a glove. The astronaut points to objects in space while wearing the glove ((named Spock) and asks about what he's pointing at. The glove also responds to other voice commands, the most important amongst which is of course the 'Take a selfie' command. There are less important commands that give astronauts information about various parts of their rovers etc. as well.

It's an innovative project to say the least and if the Amit Sharma and Arjit Sachdeva did all the work needed for it in about 24 hours, one can only imagine what they would do with proper funding and time.

The same goes for Glove Above. The team took a regular woolen glove and attached Peizo Electric crystals to them, along with buttons on the fingers. On one glove, the buttons interact with an LED indicator, which displays messages like Help, Life etc. for astronauts to communicate in space. This is basically a prototype for what the group actually wants, which is a virtual keyboard. The other glove is for entertainment and plays various sounds in order to break the monotony in outer space. You can see both the space gloves on the International Space Apps Challenge website or on the videos on digit.in.

What's astonishing and at the same time commendable is that while both teams accomplished what they did over around a 24 hours period, they were actually allowed more time. The NASA Space Apps challenge is different from other hackathons in the sense that they allow teams to start working on their projects even before the hackathon actually begins. Our winning teams chose the traditional hackathon way, but one wonders how much they would have done had they actually been working on this for a month or more.

You're probably thinking that none of this really makes a difference in your life right now. Well, the people we met there would disagree. Many of these youngsters will soon have their startups, they have a vision, something many of us spend entire lifetimes without. In addition, they have something over all of us, the talent to actually do what they're doing. And apart from the winners, we met a whole host of other talented young Indians filled with great ideas and willing to do something about it. We wish all of them lots of luck!

Winners Video: http://dgit.in/1FdjGpY
Runners Up Video: http://dgit.in/1HjgIlz ■

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Dell Venue 10 7000

All up in your business



'Business' is a segment that has always been closely associated with technology. Whether it's the business laptop, the workstation or the PDA, the 'business' market has been thriving like nobody's business. With tablets becoming the new netbooks, it's only natural that somebody decides to make a business tablet. This time it's Dell with its Venue 10 7000 series of tablets. At first glance, the tablet looks a little bit like the Yoga series of tablets from Lenovo, but that's only because of the 'barrel edge' design of things on the Venue. Powered by a quad-core Intel Atom processor, it features 2 GB RAM and a 10.5-inch OLED touch screen. With Android for Work (Lollipop 5.0) pre-installed, the tablet can also be bought with an optional keyboard. The two front facing speakers make watching videos and having video conferences a lot easier and the 'barrel edge' makes it easy to hold while operating it with one hand. The barrel edge doesn't just make for a convenient hand grip however. One of the biggest problems with tablets that come with keyboards face is in the attaching and propping up department. While most designs offer a non-folding design or require propping up with a separate case, the barrel edge design also come with a magnetic hinge that securely attaches the keyboard to it. The keyboard can be folded flat against the screen, is fully adjustable and the best part is that you won't need a floppy case to prop it up.

The tablet has been made available only for the Chinese, Canadian and US markets and is priced at $499 (about ₹31,000) and at $629 (about ₹39,000) for the keyboard bundle.

SPECIFICATIONS

Screen: 10.5-inch OLED touch screen | **Processor:** 2.3 GHz quad-core Intel Atom | **RAM:** 2 GB | **Storage:** 16 GB | **Battery:** 7000 mAh | **Camera:** 8 MP rear camera, 2 MP front camera

Mclaren 570S

The entry-level supercar

Great news! Mclaren have launched its cheapest car yet and it only costs $184,900 (₹1.15 crore)! The 570S is part of Mclaren's drive to expand its customer base. Due for a launch in 2016, the car is powered by a 3.8 litre twin-turbo V8 that puts out 562 hp. With a 0-60 time of 3.2 seconds, it's no slouch either. Aimed at a newer audience, the car looks much like the rest of the cars across the stable. Slotted below the 650-series, the 570S competes with the likes of the Audi R8, the Mercedes GT and the Porsche 911 Turbo. With Range Rovers, 7 Series', S-Classes and A8s rubbing shoulders with goats and bullock carts on Indian roads, all of which fall roughly under the same price bracket at the 570S, it would seem like a good move for Mclaren to sell the 570S here. That is until you hear about the next car Mclaren intends to reveal at Shanghai later this year called the 540C and as you guessed, it's going to be even cheaper.

SPECIFICATIONS

Engine: 3.8 litre turbo-charged V8 | **Power:** 554 bhp | **0-100 kph:** 3.2 seconds | Top **Speed:** 325 kph





PNY Power-T601

Since smartphone manufacturers have gotten the words battery and screen mixed up, we're all forced to either carry a charger or a power bank with us everywhere we go. With Xiaomi themselves getting up and taking notice of the fact that a lot of fake power banks that look like theirs are flooding the market, it makes sense to be careful. That's why PNY have released the Power T-601, a 6000 mAh power bank. While this power bank does everything the average power bank should do, the ace it has up its sleeve is safety. Not only has it been certified by CE and the FCC, it also comes with eight protection points that include, protection against overcharge, discharge, over current and short circuits along with a stable voltage, proper insulation, an auto shutdown feature and UN 38.3 compliance to make it safe for travel. It also comes with a 1 year warranty and costs ₹1,450.

Lapwork Amigo

Microsoft's folding keyboard was a god sent for tablet users. Sadly, it had one fatal flaw which was that it folded in half and had a pretty huge gap between the left and right halves. The Lapwork Amigo however folds into four sections and fits neatly in the palm of your hand. Open it up and your get a full-sized keyboard that will last 60 days on one charge. Its fatal flaw however is the fact that it needs to be switched off manually after use. It also costs $140 (₹8,700) vs Microsoft's $99.99 (₹6,100)



SECURITY WATCH

2014, the year of the hacker



The 2015 Internet Security Threat Report presented several key findings including the fact that more than 317 million new pieces of malware were created in 2014. Symantec believes that the success existing hackers have had so far is attracting more people to the dark side. The report also warns that as devices and everyday objects become connected, it won't be long before attacks on cars and medical devices become regular affairs.

Google drops Chinese security certificates



Security certificates are what tell the browser whether a website it's attached to is safe or not. When CNNIC decided to issue its own certificates to several domains, including Google's, they risked compromising the encryption protocols used to protect important data including email and banking services. Google wasn't having any of that.

Microsoft says its Windows are securely locked



While Microsoft says that there's nothing to worry about a Windows security hole, Cylance says that this vulnerability is found across Windows 8.1 and the yet-to-be-released Windows 10. Cylance also says that this vulnerability could let hackers make away with usernames and passwords. Microsoft assures there's no reason to sweat – yet. Gulp.



DESIRE

MOBILE WATCH

While the MWC was exciting, there were some other even more exciting developments in the Indian mobile market. Read on...



Oppo N3



After launching the N1 and the N1 mini, Chinese phone maker Oppo has released the follow-up model, the N3. The really unique thing about the N1 and it's little brother was the camera. Mounted on a motorised hinge, the camera and the LED flash could be rotated. The N3 features a 5.5-inch screen with a pixel density of 408 ppi. It features 32 GB internal memory (expandable by 128 GB), a 2.3 GHz Snapdragon 801 quad-core processor, 2 GB RAM, a 3000 mAh battery and Android 4.4 with Colour OS 2.0 on top of it. The camera, its USP is a 16 MP snapper with a lens certified by Schneider-Kreuznach. It costs ₹42,990.

Huawei P8

The latest flagship phone offered by Huawei looks exquisite and if it delivers on half its promises in the real world, we could have a potential winner on our hands right here. The P8 is made of an aluminium unibody with a 5.2-inch screen – nothing eye-popping here, sure we've seen better than this.



Apart from a 2GHz quad-core processor, the P8 comes with a special nano coat that makes it water resistant and has the added functionality of using your knuckles to execute special commands. It's a dual SIM phone which supports 4G on both and only measure 6.8 mm in thickness. There's a 13 MP camera at the back and only disappoints on the screen department as it's only a Full HD display. It's hitting markets soon, so keep a lookout in your neighbourhood.

HTC One M9 Plus

Within the M9 Plus, HTC has taken a sad phone and made it better. The One M9 Plus first of all runs on a octa-core Mediatek MT6795T CPU, backed by PowerVR G6200 GPU. The RAM remains the same a 3GB, but the screen is now a QHD 5.2-inch LCD 3 with a pixel density of 534ppi. Below the screen, HTC has added a fingerprint scanner, and 'round the back there's a depth sensor just above the 20.7 MP snapper. While some say these features were thrown in to make the flagship more relevant, we're just glad that we're getting the M9 Plus instead of the M9.



Lava Icon

It's got 2GB RAM, a 13 MP Sony Exmor sensor paired with an F2 aperture, has a glass finish, measures 7.7mm in thickness and costs ₹11,990. If you're wondering whether there's something wrong with what you've read so far, let us clarify and tell you that Lava, well known for making low-end smartphones has just launched its latest flagship that's not half bad. The Lava Icon features, apart from what's listed above, a 1.3 GHz quad-core processor, a 5MP front camera with an aperture of F2.4, a 5-inch screen with Dragontrail glass and 16 GB internal memory.

Hyperkin Smartboy

Is this the iPhone case of your dreams?



There isn't much that an iPhone case can't do these days (except stay relevant two years down the road, oh no you didn't!). Some have lighters, cameras, radio controlled cars and even the kitchen sink built into them, but this iPhone case takes the cake. Hyperkin is a company that makes video game peripherals. They are also famous for making the Retron series of consoles that allow you to play games built for virtually every platform that can be classified as 'old school.' While their long awaited RetroN 5 may have seemed like a no-show until its much-delayed release in January this year, Hyperkin assure that the Smartboy concept will soon hit the shelves. Designed with a slot for the phone and another for the cartridge, the Smartboy concept has been designed with the iPhone in mind, but Hyperkin also assure that an open side-paneled version with support for android phones is also in the making.

Before you pull out the calculators and start looking up prices, all ready to factor in the cost of the case plus all the game cartridges you're going to buy, unfortunately, the announcement started out as an April fool's joke first. We'd suggest that you don't spend your time holding your breath. But, then again, we'd also suggest that you don't lose hope just yet. While you wait, why don't you pop on over to the nearest App Store or Play Store and get yourself an emulator.

HYT H3

Although most owners of smartphones use their devices to check the time, it's rarer that one finds a person who doesn't wear a watch and checks their smartphone when it's about to be lunch time than one who wears a wristwatch and doesn't own a smartphone. It's also interesting to note that watches have now become an extension to your smartphone. So, it's only natural that a company decides to throw the rule book in the fire and make something that both looks intimidating and accurately tells the time. Using the combination of bellows and capillary filled



with coloured liquid, the HYT H3 tells the time in a linear fashion. The hours are represented from left to right on a series of rotating cuboids. As the hours flow by, the liquid lines up against the appropriate hour. The minutes are shown on a smaller linear dial which swings back to '00' at the end of the hour. HYT call it hydro-mechanical movement. All we know is, it costs your kid. With a case made of platinum and titanium, it suffices to say that this watch is expensive.

With only 25 pieces available for purchase, the HYT H3 stands testament to the fact that no matter how much of our lives may be consumed by technology, the alchemy that is watchmaking will never die. If you can, you must get it. Must.

SPECIFICATIONS

L x B x H: 48.8 x 41 x 16mm | 7 day, 170 hour power reserve | Limited to 25 pieces

Price: $292,000 (₹1.8 crore)

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REPUBLIC OF GAMERS



Ankle Exoskeleton

While Nancy Sinatra's boots were made for walking, the boots developed by scientists at Carnegie Mellon University are meant for 7 per cent more efficient walking. Spring loaded and requiring absolutely no external power, these boots are really exoskeletons and literally add a spring in your step. While not yet self supporting, these exoskeletons are primarily aimed at people who walk, but with a certain amount of difficulty. Designed using the physiology of your foot, the exoskeleton consists of a spring connected to a clutch. As your foot hits the ground, the natural compression in your muscles makes the clutch tighten the spring. As your leg lifts up off the ground, the spring is released automatically, giving you a little nudge as you go along. Because these exoskeletons are custom made, they're super comfortable and we see these becoming a part of the gear issued to infantrymen in the army.

Sony CyberShot HX90V

If Sony's RX 100 Mark III is a little too steep for you, there's a more pocket friendly option for you that's small on price and big on features. Borrowing design cues from the RX 100 III, the HX90V features a similar form factor. But the ace its has up its sleeve is the massive 30X optical zoom. According to Sony, the HX90V's lens' deceptively tiny size is due to a flloating fifth lens element and newly designed aspherical elements. The HX90V also features an electronic viewfinder that's sadly not as detailed as the RX 1000 III's and also features GPS, a 3-inch 180 degree rotating screen. The 1/2.3-inch sensor comes with 5-axis IS and produces 18.2 MP images. It also has a feature-poor cousin, the WX500 which does away with the GPS, viewfinder and a tiny grip.





Bolt

If you live in the city and take the bus to get around, you probably spend a lot of time walking. Especially if the rickshaw guy charges a bomb for a short distance. A young robotics engineer from Italy has a solution and it looks promising. The Bolt may look like an ordinary skateboard, but it's more. While the maker calls it the world's smallest EV, it's still an electric skateboard. The only cool thing is that it does more. The built in USB charger is a god send and if their stretch goals are met, you can have a connected electric skateboard. It weighs only 4kg, can hit a top speed of 21 km/h and the 5000 mAh Li-ion battery will power the 2000 W motor for over an hour before running out. All wrapped up in a compact design makes this a win-win.



Poppy Pour Over

If you're the type who needs coffee to get your mind working, running out of powder/beans can very easily break your day. Lucky for you, there's a new coffee maker on the block that'll do this math for you and make sure your brain cells are always firing. Poppy is a company that intends to introduce a range of home appliances that need regular refilling but are smart enough to ensure you're well stocked and won't have to worry about buying more supplies. Yet to go up on Kickstarter let alone start production, Poppy is a coffee maker, a baby formula maker and a pet food dispenser. A part of Amazon's Dash Replenishment Service, the gadget does the shopping for you by automatically sensing that you're low on supplies.



Duracell and the wireless charger

You'd think the world leader in batteries would know a thing or two about wireless chargers. Duracell has developed a wireless charging device that, get this, plugs into your smartphone's micro USB port. Back to the drawing board?



DIY Apple II Watch

While the Apple Watch is available for pre-order, it's not cheap. Here's a cheaper option that's even got a rotating crown input. If you follow the link, you can try making it yourself. Seriously, go ahead.

http://dgit.in/1DI2fsc

MOVIE

Wild

Rule #1- Invest in trekking shoes that actually fit



Despite several puns just waiting to be inserted across this review, I'm going to keep them at bay. Wild is a movie about Cheryl Strayed (Reese Witherspoon), a woman who has wandered from her path in life (both literally and metaphorically speaking) and is now making her way back home. Divorced, alone and with nothing to look forward to in life, Cheryl decides to walk all the way from the Mexican border to the Canadian border on the Pacific Crest Trail – yeah, just like that, no biggie. Ready to reinvent herself, Cheryl takes on this arduous journey and travels across the United States. Does she have hopes of pursuing a career in endurance training? Who knows, the plot's confusing, but I digress. With each step, she sheds her past, opening up a new chapter in her life. While the movie is based on the memoirs of the real Cheryl Strayed and makes you want to do something worthwhile with your life. That's fine, nothing wrong in aspiring to greatness, doing something for the greater good, and all that jazz. The only gripe I have with this movie and the overall plot is the fact that despite walking over 4,000 kms, Cheryl barely loses any weight. How can that be? That's just plain unrealistic. It takes away from whatever little realism this movie started out with. Saving grace? At least her backpack, Monster, gave her some real-looking bruises. As to should you watch this movie or not, it's a tough one. If you're a fan of Reese Witherspoon, from her Legally Blonde days, may be you'd stay away from this one. You will experience nothing but disappointment. For everyone else, who don't have anything better to do, go right ahead.

N. Raghavan



Stairway to Heart

The year is 2012 and Led Zeppelin, a band that's inspired several generations of music are being honoured. While a whole bunch of bands including the Foo Fighters paid their respects, two guys stole the show. Literally.



http://dgit.in/1DZojSe

Immigrating to Kashmir with the Leopards

Kids can do amazing things. If you don't believe us, watch this video of a bunch of kids play Led Zepp's Kashmir, The Ocean and Immigrant Song in one go on the xylophone. According to the video, these kids are part of a non-profit teaching kids music. Rock on, we say!



http://dgit.in/1E02mmi

When Zep Breaks

If you haven't guessed, we've devoted this corner to Led Zepp and the third video is of Alison Krauss belting out the freshest, most cheerful version of When the Levee Breaks. Robert Plant seems to approve, we wondery why (wink wink).



http://dgit.in/1Pw8WpB

MOVIE

Furious 7

Time to Walk(er) Away?

It's not everyday that you see a movie franchise hit six movies, retain the original cast members and still make a profit. One such exception has been the Fast and/or Furious Franchise. As the easter egg at the end of movie 6 explains, the 7th picks up with the antagonist, Owen Shaw in a coma and his brother Deckard Shaw (Jason Statham) looking for revenge.

After killing off Han and bringing Fast and Furious: Tokyo Drift into the universe, Deckard breaks into Luke Hobbs' (Dwayne 'The Rock' Johnson) DSS office, a fight breaks out and ends with Hobbs and his partner Elena Neaves being defenestrated due to an explosion. Further attacks are made on Dom and Brian's lives, but they escape unhurt. Deckard makes it a point to make it obvious that he wants the entire crew dead and plays several rounds of chicken with Dom, but always conveniently gets away.

This is where the movie's second plot comes in. Kurt Russell, who plays Frank Petty, a special ops type of guy swoops in just as Deckard runs away and makes Dom an offer he can't refuse. If we go any further, we'd be telling you too much, but a good chunk of the movie includes a 'pretty' female hacker, a Dark Knight-esque tracking program and several examples of everybody's favourite trope.



All things aside, physics goes out the window with this one too, although, it's only limited to surviving head-on collisions at really high speeds and destroying drones with ambulances (don't ask!). The characters are just as shallow as the previous movies and since there are so many of them and they all deserve screentime, you'd probably miss a lot if you nodded off somewhere in the middle.

What's really sad about the whole franchise now is that it's moved away from being about cars and towards an Ocean's 11 type of affair. Who knows, maybe when Fast 14 comes out, they might decide to do a crossover between the two franchises. Jason Statham and Kurt Russell are the only characters who have something going for them and Furious 7 can be best described as a Michael Bay movie. The Paul Walker tribute at the end was emotional.



Luke Cage
The hero for hire who operates out of Hell's Kitchen, NY, is next in the series of TV shows Marvel plans on releasing through Netflix, after Daredevil. Going by the trend, this may actually be worth watching, too.



Jessica Jones
Also in the offing is a series based on Jessica Jones, who according to Marvel lore, marries Cage and also serves as Matt Murdock's (Daredevil) bodyguard. We're huge fans of Marvel comics, as you can see, overflowing with fandom.



The Iron Fist
Also planned in Marvel's long list of TV series on superheroes is one on Iron Fist, who teams up with Cage forming Heroes for Hire and is also Matt Murdock's best friend. Why do we sense a huge crossover in the near future?

worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



WANT TO INVESTIGATE THE SONY LEAKS YOURSELF?

Wikileaks has published a database of all the data leaked from Sony Pictures in last year's hack, comprising of 173,132 emails and 30,287 separate documents. Have fun.
http://dgit.in/sonyliks

LIFECASTING UNDERGOING A REVIVAL

With the recent release of live-streaming apps Periscope and Meerkat, it is natural to go hunt down the first ever lifecaster the world had ever seen. Her name is Jennifer Ringley, and 19 years ago her site, Jennicam, went live. Follow the link for more:
http://dgit.in/jenicam

SLACK WAS VALUED AT $2.8 BILLION

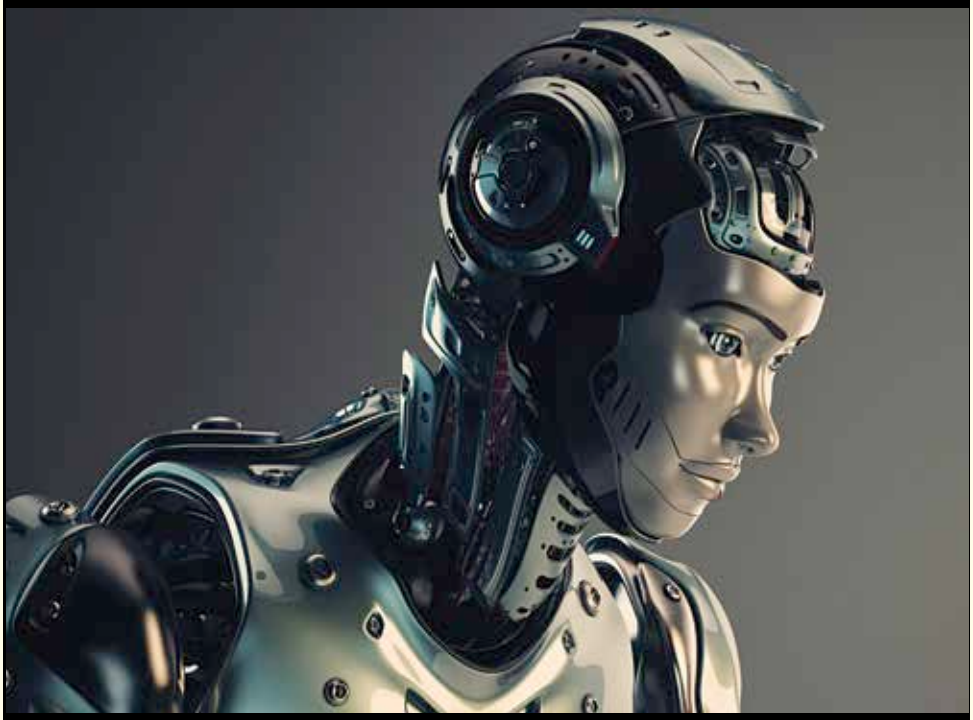
The facts are all there: 750,000 daily active users, 200,000 of whom are paying customers – growth that's never been seen before. NYT finds out with Stewart Butterfield, the CEO of the fledgling start-up, what the the corporate workflow cum messaging app is all about.
http://dgit.in/slckingisgd

EVER HEARD OF A GEO-INFERENCE ATTACK?

No? Well you should. It's an attack that allows virtually anyone with a website, without your permission — to narrow down a person's country, city, and neighbourhood by measuring the timing of browser cache queries. Find out how it works here:
http://dgit.in/geoinference

[Wired Corner]

THE AI RESURGENCE



AI has been enjoying a major resurgence in recent months. But why now? Is it just another cycle that will eventually die out for not contributing enough? Will it bring in a new dimension to innovation or bring upon Judgement Day on us humans. We can only be skeptical **http://dgit.in/aiftw**

Interactive page



50 years on, does Moore's Law hold?
The numbers of transistors on a single computer chip would continue to double every year, while the cost per chip would remain constant. Today consumers seem to demand that their gadgets get faster, cheaper, and more compact in step with Moore's Law too.
http://dgit.in/mrrslaw



Review: Microsoft Surface 3
Wired likes it's lovely, clean design and according to them the type cover is a really smart, useful accessory. The best part is that it runs full Windows but can it really replace both your laptop and your tablet? Wired seems to think so:
http://dgit.in/Surface3W



Aww overload
The internet is ruled by animals that mesmerise us with their cute antics in GIFs, photos, and videos. But it's hard to find them. Here's how you can find the cutest, most amazing animals on the web:
http://dgit.in/cuterrr

Interactive page

SHORTS

THE ROFL UNIVERSE

Five years ago close to 1,000 people gathered on the campus of MIT to attend a sold-out conference devoted to the question "What is awesome on the Internet?" The event included presenters from many prestigious institutions but what they had gathered to examine, is what might be called the ROFL universe.
http://dgit.in/roflllld

THE MAN WITH THE GOLDEN BLOOD



What if someone seemed to be lacking Rh antigens all together? That would make this blood type one of the rarest in the world. Meet the donors, patients, doctors and scientists involved in the complex global network of rare – and very rare – blood.
http://dgit.in/gldnbld

HOSTILE TAKE OVER



What's it like to have Google and Amazon try to kill your startup? Is it a David vs. Goliath story? Fusion magazine speaks to Marco Zappacosta whose company Thumbtack finds itself in this tricky situation. Should he hold his ground? Find out what he plans to do:
http://dgit.in/dvsgol

OUT OF THE ASHES



It took a lot of fossil fuels to forge our industrial world. Now they're almost gone. Could we do it again without them? Lewis Dartnell, a UK Space Agency research fellow at the University of Leicester examines all possible angles in this long but worthwhile read:
http://dgit.in/humanity2

So, what's the deal with net neutrality?

You've probably seen the AIB video, but there's more to net neutrality than just that.

– By Nikhil Pradhan

If you've been plugged in to social networks over the past month or so, you must have spotted some of your friends share or talk about articles on net neutrality. And while I assume many of you understand the concept in question and have already formed opinions, there will also be some of you out there who have got no idea what everybody's on about. If you fall in the latter category, then I'd also assume you must have a few questions. So, to help you better understand the ins and outs of net neutrality, let's tackle a few basic questions one by one.

What is net neutrality?

If net neutrality was to be defined in a single line it would go like this:

"The premise of net neutrality is that all data on the Internet should be treated equally."

Expanding on the above, a more comprehensive definition would be:

"Net neutrality means that Internet Service Providers (companies like Airtel, Reliance etc., who are responsible for your broadband and mobile Internet connections) shouldn't be allowed to give preferential treatment to select websites, online services or apps. These ISPs should also not be allowed to discriminate against any website, online service or application."

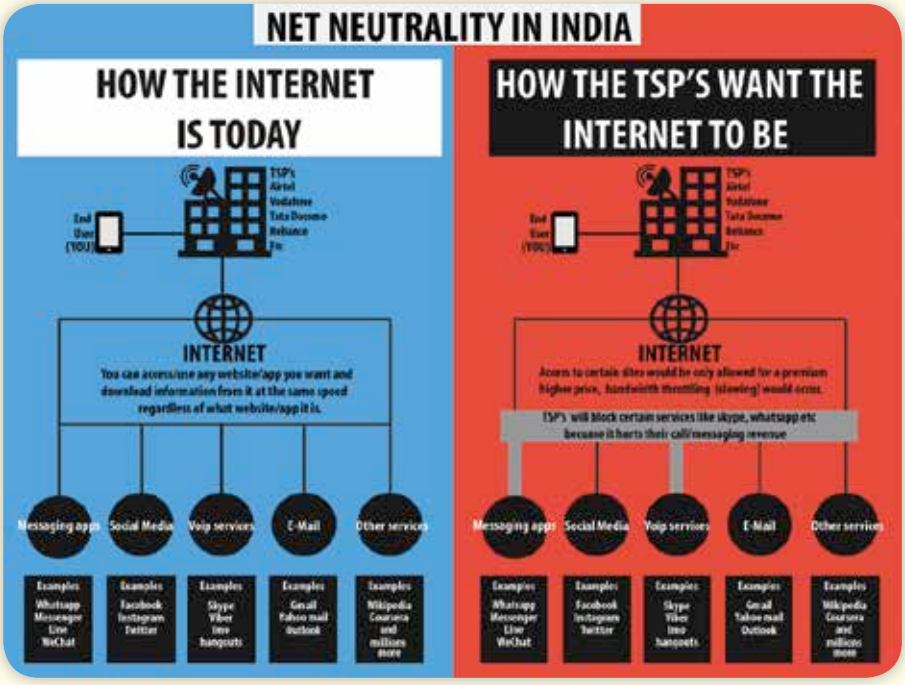
Let's now break up the above definition for the sake of clarification.

Preferential treatment: This means that ISPs can't ask some websites, online services or apps to pay extra in order to make it easier for consumers to access them. For instance, Airtel shouldn't be allowed to take money from Flipkart and then let Airtel broadband and mobile Internet customers load the Flipkart website faster, or scrap all data charges when the Flipkart app is being used.

Discrimination: Conversely, an ISP shouldn't be allowed to penalise websites, online services or apps because they haven't paid extra charges. Continuing the same example from above, Airtel shouldn't be allowed to put competing e-commerce websites like Snapdeal or Amazon at a disadvantage by giving Flipkart a boost just because Flipkart paid up.

Why should I care/know about net neutrality?

If you use the Internet in any shape or form today, net neutrality affects you directly. If the Telecom Regulatory Authority of India (TRAI) takes the side of telcos and ISPs in this matter then you will see a considerable change in the way you visit websites or use apps. One of the darkest possible future scenarios in this timeline would be to have the Internet divided up into slices of websites and services, similar to how your DTH provider offers channels. According to this timeline, you would have to pay extra on top of your recurring



Interactive page

HIDDEN WIKI MAGIC



We usually don't dish out life hacks in this section but this one has to be let out. This simple trick will help you move out of your Wikipedia comfort zone allowing you to explore more deep into Wikipedia's dark core. It's all about utilising Wikipedia's Special:Random page. Find out more here:
http://dgit.in/randminf

SQUATTER RESURGENCE?

The body that regulates Internet addresses is checking to see if it can crack down on a Canadian company accused of using the new ".sucks" domain name to extract exorbitant sums from celebrities and companies seeking to protect their public brands.
http://dgit.in/suks

IN SCIENCE WE DON'T TRUST



We live in an age when scientific knowledge from climate change to vaccinations – faces furious opposition. Is it because scientific truths that are less than self-evident, often mind-blowing, sometimes hard to swallow? Read on:
http://dgit.in/inscivtrst

WHY C DRIVE FOR YOUR HDD?



For nearly as long as hard disk drives have been placed in personal computers running certain popular operating systems (notably MS-DOS/Windows), the primary hard disk has been designated with the letter "C". But why? After following this link it won't be hard for you to C why.
http://dgit.in/cdrivez

Internet plan to access certain websites or services.

On the other hand, if we are to take an optimistic (albeit unrealistic) view of the intents of the ISPs and telcos, then in a country without net neutrality we could see the most common and popular apps being completely free to use with respect to data charges and the overall cost of data use falling because ISPs no longer have to only rely on the end user for revenue. As I said, it sounds unrealistic.

Nevertheless, wherever you stand on the debate, it's clear that net neutrality does directly affect you and as a result, you should know and care about it.

Everybody and their grandmother supports net neutrality, is there a contrarian viewpoint?

As it always happens in a debate, net neutrality is being both derided and defended by different parties. And even though it may appear like net neutrality has received universal support, it is important to understand the other side of the debate as well.

But first, let's take a quick look at why net neutrality is being defended:

1. Without net neutrality, it would be very easy for ISPs to mould the browsing habits of its users with the help of pricing slabs, different speeds for different sites and other methods. So, if Airtel wanted its users to visit Flipkart, it would make it exceedingly easy and advantageous to do so and put competing sites on the back foot which would clearly be an anti-competition move.
2. Net neutrality also ensures that small, new companies can compete against established big names on the Internet fairly. If net neutrality did not exist then big companies would shackle their competition with the implicit ability to be able pay more to the ISPs to ensure better service, something that most start-ups wouldn't be able to do.
3. Now, this scenario may lie at the furthest end of the slippery slope, but here it is: since the absence of net neutrality could mean that an ISP will get money from companies, that relationship may be enough to compel the ISP to mute online criticism against one of its paying partners.
4. Another scenario that exists without net neutrality is that the Internet becomes a stratified mess and you'll be forced to choose packages of websites and services like you do with your DTH subscription. If you want unrestricted access to the Internet, the ISPs could force you to pay through the nose.
5. The anti-net neutrality arguments become even more vociferous when it comes to VoIP and messaging apps like WhatsApp and Viber. Since these services directly affect the telcos' bottom-line, there is the significant possibility that the companies behind these apps will have to register for licenses in order to conduct operations in India. This means that unless the companies behind messaging and VoIP apps decide to pay the government for licenses, you won't be able to use them.

These are only a few of the many arguments that net neutrality proponents put forward in defence of keeping the Internet neutral. However, when we get to the debate against net neutrality, the focus of the arguments is essentially different. While the pro net neutrality talking points almost always have the consumer as their focal point, the other side of the debate seems to be focused on the telecom operators and how a 'neutral' Internet ensures financial doom. In fact, TRAI recently published a consultation paper that almost exclusively focuses on how many VoIP services, apps and websites are taking undue advantage of the infrastructure set up by telcos who spent bucketloads of money setting it all up.

There is, however, one aspect of the telcos services, which goes against net neutrality, that appears worth considering, especially in a country like India. I am specifically talking about a service like Internet.org which could work as a great tool to increase Internet penetration in rural areas and places where Internet use is often looked at as a luxury. Do I wish services like Internet.org offered more choice or even let users pick the websites that they'd want to access for free? Yes, that would be ideal but I'm also aware of the economic realities. If the scope of services like Internet.org is focused towards increasing rural Internet penetration and awareness, then I can't really argue against it, not when I have easy access to the Internet at relatively decent speeds while many others don't.

With the recent revelation about Airtel Zero, and how it would make certain websites freely accessible, the debate has become even more important. Indian Internet policy is still young and malleable and this is a very important time to help shape it so that it continues to be open and democratic.

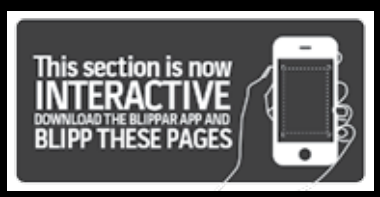
Digit stands for net neutrality and we hope we've helped you understand both sides of the debate in order to help you make up your mind on where you stand. The net neutrality debate is integral to the policy framework that will govern the Internet in India and it's very important that we help it manifest in a form that's fair to everyone currently on the Internet and those aspiring to be so. Read the full article at the following link http://dgit.in/NetNeutrality101

BARNACULES NERDGASM

He calls himself a professional nerd. He specializes in 3D printing, programming, technology reviews, gaming and



anything else with electrons flowing through it! What more do you want?
http://dgit.in/bnerdgasm



For a list of all the links from this section, head over to
http://dgit.in/WVMay2015

(PRODUCT LAUNCHES)

MICROSOFT SURFACE 3



Sporting a 10.8 inch screen, the Surface 3 features a Quad Core Intel Atom x7 processor, and a full HD display. It's supposed to be the most affordable Surface – one that's supposed to be the perfect balance of performance and value. Starts at $499 (Approx Rs. 32,000).

JAWBONE UP4



It's got heart rate monitoring, sleep analytics, and everything that it's predecessor had with the addition of an NFC chip that lets you pay on the go. Just tap your wrist at a compatible NDC terminal and your AmEx card gets debited.
Price: Approx. Rs. 12,700

LETV LE ONE MAX



The phone features a massive 6.33-inch Quad HD bezel-less display, running on the Snapdragon 810 SoC with 4 GB of RAM and 64/128 GB of internal storage. The One Max and it's siblings are the first phones to sport the USB Type-C connectors.
Price: TBA

PICTURE PUZZLE

ABSOLUTE TIMEPASS





Top 3 YouTube Picks

Make sure your boss doesn't catch you goofing off with one of these videos playing on your screen



Killer bots
Duration: 28 min 39 seconds
Meet DARPA's six-foot-tall bipedal humanoid robots in this must watch documentary.
http://dgit.in/kilbots



Flash and it's gone
Duration: 0 min 7 seconds
Maglev trains are incredibly fast. But how fast? Before this girl knew what was happening it was already over.
http://dgit.in/trainzs



Fingerprint gun
Duration: 7 min 40 seconds
This 19-year old inventor believes he has the solution to the problem of the misuse of firearms.
http://dgit.in/safegun

Vulkan, the Future of Open Graphics APIs

>>Why have some of the biggest players in the industry decided to create entirely new graphics APIs all of a sudden? Is this an unlikely coincidence or does it signify some kind of a larger shift in the industry?> by Kshitij Sobti

Apple's Metal, AMD's Mantle, Microsoft's DirectX 12, Khronos' glNext and now Vulkan, the world of graphics computing seems to have exploded with new APIs, standards and frameworks of late. One has to wonder what exactly is going on.

If we look at what all of these have in common, it becomes clear that it is the latter, a growing consensus in the industry about what the future of graphics development should look like.

This common base that all the above technologies share, is a focus on making a graphics API that gives developers more direct access to the hardware, with fewer layers of abstraction and code between the hardware a developer writes, and software a developer writes.

To understand why this is important for the future of graphics processing, let us first look at a brief history of GPU technology, and graphics APIs.

A Brief History of the GPU

What we would today call a GPU – the term was coined after the technology had already existed for many years – has been around for over two decades now, and it has not been immune to Moore's law.

In many ways the advancement of GPUs has been even more substantial than that of the CPU. The architecture of GPU and the approach to graphical software development have changed substantially. One of the biggest such changes has been the move from a fixed-function pipeline to the shader-based pipeline that exists today.

*coding matters

*Stack Overflow's 2015 Developer Survey

>>Stack Overflow's latest developer survey managed to get as many as 26,086 responses. Did you know the average age of an Indian developer is 25? Surprised? More to follow.

http://dgit.in/StkOverflowDev

*Quodos FTW!

>>Quodos aims to collect the best of development tools in one place, with a collection curated and prioritised by the community. Hit the link below and witness all the good stuff. It's a great new coder's destination for sure.

https://www.qudos.io

*CodeCakes

>>If you're a beginner trying to get into programming, CodeCakes aims to be just the destination for all your needs. Ton of helpful tools and resources at your beginner's mind's disposal. Go on, check it out.

http://dgit.in/Codecakes

The very first GPUs offered what is called a fixed-function pipeline, where the graphics hardware implemented a set of common graphics functions for performing transformations and applying graphical effects. This was the model used till DirectX 7, and OpenGL 1.5 and was the only system supported by the earliest NVIDIA cards.

In the early 2000s, GPU began opening up, allowing more and more of their functionality to be programmed by software developers using small bits of code called shaders rather than using a fixed set of functions in the graphics hardware.

OpenGL 2.0 and DirectX 8.0 facilitated the use of this new found flexibility in GPU hardware by including their own shader languages, GLSL (OpenGL Shading Language) for OpenGL and HLSL (High Level Shader Language) for DirectX. Code could be written in these languages and then deployed to be run in the GPU.

GPUs continued opening up to the point that modern GPUs are in essence highly-parallel CPUs. Today you have frameworks such as CUDA and OpenCL that allow a developer to utilise the power of a GPU to perform tasks that would traditionally be performed by a CPU.

To give you an idea, currently the latest NVIDIA GPU architecture is Maxwell, which powers its current top of the line GTX 980 GPU. This GPU has 16 streaming multiprocessors, each of which has 4 warp schedulers, which in turn have 32 CUDA cores. Leave the confusing technology aside, and think of this as equivalent to a 16-core CPU, where each CPU has the equivalent of Intel's HyperThreading, but instead of making a single core appear as 2, it allows for a single core to appear as 128!

In the meantime we have seen the release of OpenGL 3.x and 4.x, and the release of DirectX 9.x, 10.x and 11.x. While graphics APIs continued to evolve, they also abstracted away the true power of modern GPUs in order to provide an API that was designed for old hardware. They also add an overhead, in terms of CPU usage that limits what is possible through the use of these APIs.

The Growing Consensus

The uniformity and simplicity of old OpenGL and DirectX comes with an overhead that can sometimes be limiting.

This is more true perhaps of mobile platforms such as Apple's iOS, where the CPU and GPU are both limited, and every bit of inefficiency means lower battery life, or less optimum use of the available hardware. Imagine a powerful GPU that is capable of brilliant graphical fidelity, but is let down by the slower CPU of a mobile device.

The developer is using the GPU through a layer of software (OpenGL 4.x or DirectX 11.x) that need to process each command sent to the GPU using those APIs. However these commands themselves use up the CPU to the point where we just can't send instructions to the GPU fast enough to make full use of it.

It is for this reason that Apple created their Metal API for iOS, giving game developers for iOS devices more direct control over the graphics hardware, and the capability for better performance, or better visuals with the same hardware.

In fact console developers creating games for the Sony PlayStation and the Microsoft XBox have had access to low-level APIs because of which you can see such hardware achieve levels of graphical fidelity that are just not possible with desktop computers with much better specifications.

Both Mantle, by AMD, and DirectX 12 by Microsoft, which preceded Apple's Metal are built around the same principles. Think of them as a reboot of the graphics APIs which were designed for another time period and are now showing their age.

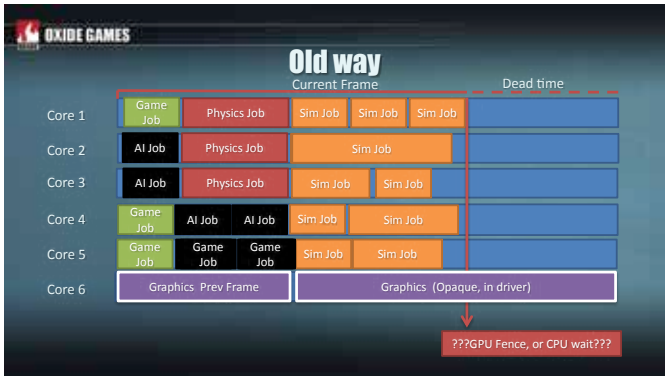
This was also a little unfortunate, since Mantle (when announced) was an AMD-only technology and would only work on AMD hardware, that too only on Windows. DirectX 12 is a Microsoft-only technology that would only work with Microsoft platforms such as Windows, Windows Phone and the XBox. Metal was an Apple-only API that would only run on Apple platforms, and currently is only available for iOS.

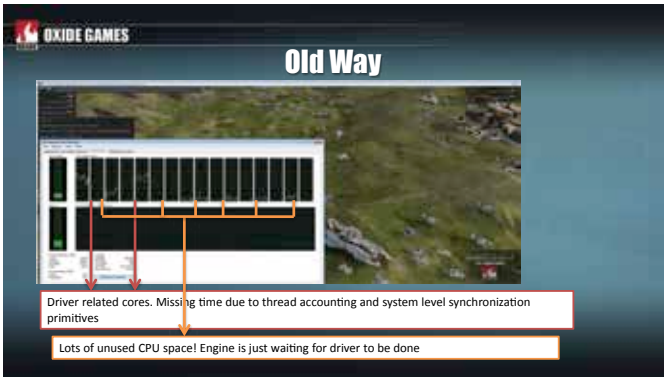
What about a standard graphics API that could work on all operating systems, whether it is OSX, Linux, Windows, iOS or Android, and on all kinds of hardware whether by AMD, NVIDIA, or Intel. OpenGL had always been the solution that could go anywhere due to its open nature, but it hasn't suddenly disappeared in a puff of smoke now that these newer APIs are available. It will continue to be possible to use OpenGL to create games and other applications needing hardware acceleration.

The Future of OpenGL

The obvious solution then is to simply create a new version of OpenGL with the same design goals as these newer closer-to-the-metal APIs, while remaining vendor and platform-neutral as it is now.

Many developers working with OpenGL have talked about the many issues faced by them in OpenGL, and the need for a clean break, an entirely new graphics API developed using the same open approach as OpenGL, but built for modern graphics chipset architectures, and with modern graphics development in mind.





Vulkan is better at spreading load across multiple cores

This is exactly what was happening under the umbrella of the glNext project.

Also revealed was the fact that while Vulkan was to be the successor to OpenGL, it does not share its legacy. In fact Vulkan is to a large extent based on AMD's Mantle graphics API, which AMD graciously contributed to the Khronos Group. This is rather a generous move of AMD given how it will now become a vendor-neutral and platform-neutral framework under Khronos, thus eliminating any competitive advantage they had through a vendor-locked framework. To be honest though Mantle was unlikely to succeed as an AMD-only Windows-only technology, especially given the similar goals of DirectX 12.

So while Vulkan is a successor to OpenGL, it is also the successor to AMD Mantle. Given the existence of Vulkan, Mantle will no longer exist in its current form since it has essentially been superseded. The landscape of graphics API has suddenly cleared a lot, it is now down to three, Metal by Apple, DirectX 12 by Microsoft, and Vulkan by the Khronos Group.

Unlike Microsoft and Apple, the Khronos Group is a non-profit consortium that is focused entirely on creating open graphics standards. Apple and Microsoft are member of Khronos as well though among other major game development and hardware companies such as AMD, Intel, NVIDIA, Valve, Unity, EPIC Games, Blizzard, EA, Google, Mozilla, Oxide, PIXAR, and Oculus VR and many others.

If you think it odd that a new major standard API is based on a technology created by a single corporation for its own use, perish the thought. This is exactly how OpenGL started in the first place. OpenGL was a successor to IRISGL (Integrated Raster Imaging System Graphics Library), which was a creation of Silicon Graphics (SGI) designed for their own workstations. It was eventually open sourced and standardised as OpenGL.

What Vulkan Brings to the Table

One of the biggest advantage that Vulkan has over other graphics APIs is the fact that it is designed to work on all platforms, desktop or mobile, and operating systems. It can work with NVIDIA hardware, AMD hardware, and Intel hardware, and other graphics hardware available on mobile platforms such as Adreno.

This, of course, is something OpenGL already does, and very important for Vulkan being a fresh API. Where Vulkan is intended to excel, is where some of the biggest drawbacks lie in OpenGL currently. It is designed to take advantage of the current generations' architectures, and trends in hardware architectures that are here to stay. When OpenGL was designed, both CPUs and GPUs were single-core affairs.

The trend these days is towards higher core counts at lower speeds. Octa-core mobile processors are increasingly common and are getting cheaper. Desktop and laptop core counts are also on the rise. We've already mentioned how the number of GPU cores had been on the rise, and is now in the territory of 16 physical cores and hundreds or even thousands of virtual cores.

Multi-threaded design

These trends do not play well with the way OpenGL is designed. While OpenGL-based games and applications can take advantage of multiple cores, all OpenGL interactions only run in a single thread. What this means is that even if the rest of the application code is spread across multiple processors, the speed of a single core defines how fast OpenGL can process graphics commands and pass them to the GPU.

Vulkan is explicitly designed to take advantage of multiple cores. It supports receiving commands from multiple threads at the same time allowing for better utilisation of multi-core hardware.

This is a design that has been proven to show performance gains since EA's Frostbite 3 engine (which powers all their modern games such as the newest Dragon Age: Inquisition and Battlefield 4) was ported to use Mantle, and showed real world improvements in performance to as much as 45%.

Lower driver overhead

Current graphics drivers do a lot, too much if you ask the developers of Vulkan. One of the goals of Vulkan then is to reduce how much management OpenGL does, and leave all that for the engine developer to handle.

Vulkan gives developers explicit control over the GPU, and removes everything but the most necessary components between the GPU and the software using it.

This increase in power, also brings with an increase in responsibility. Low-level features such as memory management, error validation and CPU-GPU synchronization are now the responsibility of the developer.

Vulkan even removes run-time error checking that was done by OpenGL. The idea behind this being that all the testing should be done beforehand, so error-checking need not run in production code. Also, despite error checking, GPU crashes are known to happen, so why pay with the overhead?

*pointers

>>Interesting developer videos



*Python for Humans

A great talk by the creator of the popular Requests library for Python about good API design.

http://dgit.in/PyForHumans



*glNext: The Future of High Performance Graphics (Presented by Valve)

This GDC talk presents the new Vulkan API for the first time with talks by various people involved in its development.

http://www.gdcvault.com/play/1022018/



*Wearable Electronics with Becky Stern

If you are interested in wearable electronics, especially the DIY-king, this great live video series by Adafruit Indrustries is one to watch.

http://dgit.in/WearElec-Becky



*Docker Tutorials

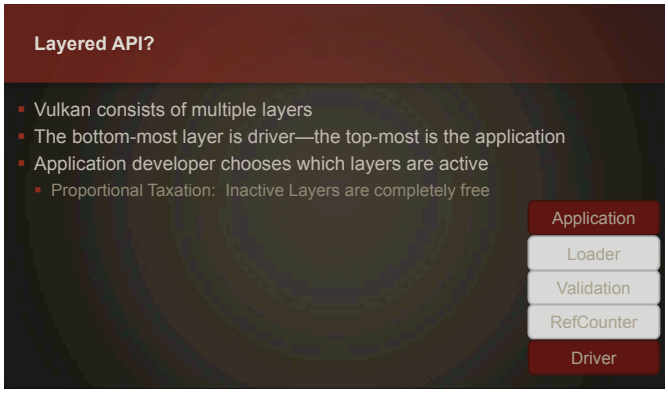
The Docker team has started a new series of video tutorials that showcase different aspects of Docker at a very basic introductory level.

http://dgit.in/DockerTut

To help developers ship error-free code, Vulkan will ship with good tools to properly test the application during development. Vulkan, unlike OpenGL will ship with a full SDK.

Layered design

Some of the OpenGL features that have been removed in Vulkan are now available as additional layers over the core driver. For instance, there are layers available for validation, reference counting, debugging, checking for thread safety, trace capture and replay, and performance linting.



In Vulkan, disabled layers do not use up any CPU or GPU

Developers can create their own layers, and enable / disable any layer if needed. Third parties can create their own layers. For instance Steam's overlay that shows game information can be implemented as a Vulkan layer.

Bytecode Shaders

Shaders are one of the most important bits of GPU code while developing games but their current design leaves a lot to be desired. Currently there are two main languages to create shaders GLSL (for OpenGL) and HLSL (for DirectX).

Developers wanting to target both OpenGL and DirectX need to create the same shader code in both languages and ship them with the game. This leads to a duplication of effort in keeping two versions of the same code in sync. Or use automated code-conversion tools to output code in these languages.

Game developers also need to ship the source code of their shaders, which are then compiled by the graphics drivers at run time before being sent to the GPU. Not only does this cost in performance, it also causes issues for companies that want to keep their code private.

With Vulkan comes a new binary shader format called SPIR-V. This is a bytecode format that can be compiled to run on any GPU. Since it is a bytecode format, it removes the need for a full compiler in the driver, and reduces the performance impact of compiling shaders at run time. Also companies that want to keep their shaders private can now do so.

Of course developers wont directly write shaders in this binary format. Rather the idea is to support multiple source languages, which can all be compiled to the SPIR-V format.

Game developers can use the language of their choice, GLSL, HLSL, or some other language entirely – such as Apple's new Metal shader language. As long as there is a compiler for it that outputs SPIR-V.

Conclusion

Thanks to AMD's donation of Mantle, Vulkan is well on its way to becoming a reality soon. EA's Frostbite 3 engine, already supports Mantle, and EA has committed to port it to Vulkan. Valve's Source 2 engine already supports Vulkan alpha, and their Steam Machines will also support Vulkan. Valve has also (in partnership with LunarG) developed a driver for Intel GPUs that supports Vulkan and will be kept in sync with the latest Vulkan specifications. This driver will be open sourced.

The Vulkan spec and drivers should be available this year itself, and the spec for SPIR-V is already available. A compiler for GLSL to SPIR-V is also available, and SPIR-V is supported by the newest OpenCL.

It will be interesting to see how major game companies, platform-holders and vendors get behind Vulkan and (if at all) current-generation consoles also take to Vulkan, but in the words of Valve's John McDonald, "Outlook good?". >>

*Multi-threads to look up

*Khronos Group

>>If you want to keep abreast of all developments in Vulkan, SPIR-V and other related technology, Khronos' website is where you should keep an eye on. Just forget everything and head over there.

https://www.khronos.org

*Mantle Programming Guide from AMD

>>While the Vulkan team works on a spec, the Mantle programming guide should serve as a good look at what's to come. We don't know, but can you foresee any surprises?

http://dgit.in/MantleProg

*Metal for Developers

>>Metal is the only complete low-level graphics API you can use today, albeit only for Apple devices. For developers trying to unlock the new iPhones' chip-level goodness, waste no time.

http://dgit.in/MetalApple

BLUESTACKS APP PLAYER

Emulators and virtual machines make it possible to run Android on desktops. While there are lots of options to do so, we choose BlueStacks App Player – one of the most stable and neat Android virtualisers available. Whether you're an existing user or a new user, go through these tips and tricks to enhance your Android experience on a desktop.



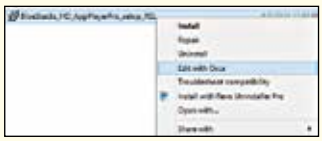
BlueStacks App Player 17
UC Browser 18
Fitness Apps 20

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.

Bypass installation Error: 25000 on Windows 8.1

While installing BlueStacks on Windows 8/8.1, you may sometimes get an error. If you're using the split installer, the error message will be "Error 25000. BlueStacks currently doesn't recognise your graphics card." The offline installer might show "BlueStacks currently doesn't recognise your graphics card".

In the latter case, update your driver and see if it works. If not, try this trick. Download the offline installer (.msi) from BlueStacks website but don't install it. Then, download and install 'Orca' , a Microsoft database table editor for editing .msi files from http://dgit.in/OrcaDownload.



Edit the installation file to change the parameters

Right-click on the BlueStacks setup file (.msi) and select "Edit with Orca". After the Orca editor opens, **navigate to** `Launch Conditions` (located on the left section under Tables) > Click on "Installed or Physical memory >= 1024" > Hit [Delete] > OK. Then, navigate to "InstallExecuteSequence" > Click on "CheckMsiSignature" > Hit [Delete] > OK. Lastly, navigate to `Property` > Double-click on "GLMODE" > Change the value to "FALSE" > Hit [Enter]. Save the file before quitting Orca. Run the BlueStacks set-up and you'll successfully have bypassed the error.

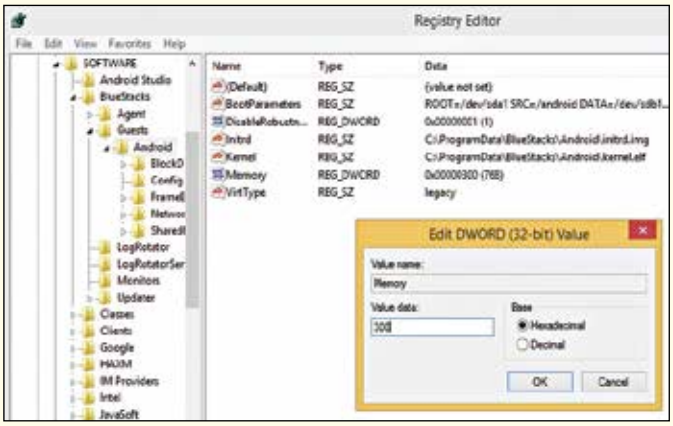
Install BlueStacks on a PC without a graphics card

If you have an old PC without a graphics card, BlueStacks installation will fail and show you an unrecognised graphics card error. However, if the on-board graphics is moderately powerful, you can still install and use BlueStacks. All you have to do is repeat the steps from the previous tip to easily bypass the error.

Increase BlueStacks RAM size

If you're experiencing lag with your BlueStacks virtual system or want to install a memory-hungry application, we'd recommend increasing the RAM size of your virtual machine. To do it, navigate to the folder where BlueStacks is installed (`C:\ProgramData\BlueStacks\`) and run "HD-Quit.exe" program. This step will close all the BlueStacks processes running in the foreground. Next, open Registry Editor by hitting the Windows logo key + [R] and typing "regedit" in the Run dialog box. In the Registry Editor , navigate to `HKEY_LOCAL_MACHINE\SOFTWARE\BlueStacks\Guests\Android` > Double-click on "Memory" located on the right side) > Change the base option to "Decimal" > Change the value of the "Value data" to the amount of RAM you want to use (in megabytes) > "OK" > Exit Registry Editor. That's it! The RAM size will be increased.

Note: The size of the virtual machine RAM depends on your computer's RAM, so make sure that the RAM size you enter in the Registry Editor doesn't exceed the maximum size of your RAM. It's highly advised to keep BlueStacks' RAM at least 1GB lesser than the total RAM to keep the Windows system stable.



Change value data to the amount of RAM you want

Increase SD card capacity

If you're out of storage space in the virtual machine, you can increase the SD card capacity. However, BlueStacks doesn't provide any straightforward option to do this, so this tip is a bit arduous. To do it, download and install 'DATA.IMG Maker' tool from http://dgit.in/DATAIMG-Maker and 'OSFMount' tool from http://dgit.in/OSFMount

Extract the DATA.IMG Maker file and run "Resize SD.bat". This will launch the "TopoResize" utility. Select "create new" and choose the location to save your file. Hold

and drag the slider to set the size of the SD card (in megabytes). Click on "Create file" > "None" > "OK" > "Quit".

To use the image as SD card, you'll need to mount it and format it. Open the OSFMount utility that you downloaded and click on "Mount new". In the mount drive dialog, select "Image file" as source > Browse the image file > Assign any drive letter > Set Drive type as "Auto" > Uncheck "Read only" drive > "OK".



Make the mount image with necessary settings

These steps will mount the SD card, which will now be visible under "My Computer" with the drive letter you assigned it. Right-click on the drive and format it with FAT32 file system. Then, launch OSFMount again and click on "Dismount all & Exit".

To add the SD card to BlueStacks, navigate to the BlueStacks folder and run "HDQuit.exe". Open Registry Editor (regedit) and navigate to HKEY_LOCAL_MACHINE\SOFTWARE\BlueStacks\Guests\Android\BlockDevice\2. Double-click on the Path string and replace the value field with the path of the image file. Launch BlueStacks and you'll get upgraded storage.

Access BlueStacks' local files in Windows

To get BlueStacks local files in Windows, firstly, download and install a file manager in BlueStacks – preferably ES File Explorer. Open the file explorer, search for the file/folder you want and copy it to "windows/BstSharedFolder/".

In Windows OS you'll find the copied folder at C:\Program Files\BlueStacks\UserData\SharedFolder.

Optimise BlueStack's performance

BlueStacks needs lots of computer resources (graphics, RAM and computing power) to run. Sometimes, your operating system may not be able to provide the required amount, resulting in a sluggish BlueStacks experience. If you face this issue, try these tricks to optimise the performance.

Make sure BlueStacks is running. Go to task manager. Under "Processes", find "BlueStacks Frontend" process and right-click on it. Select "Go to details". In the Details tab, right-click on HD-Frontend.exe > Set priority > "High".

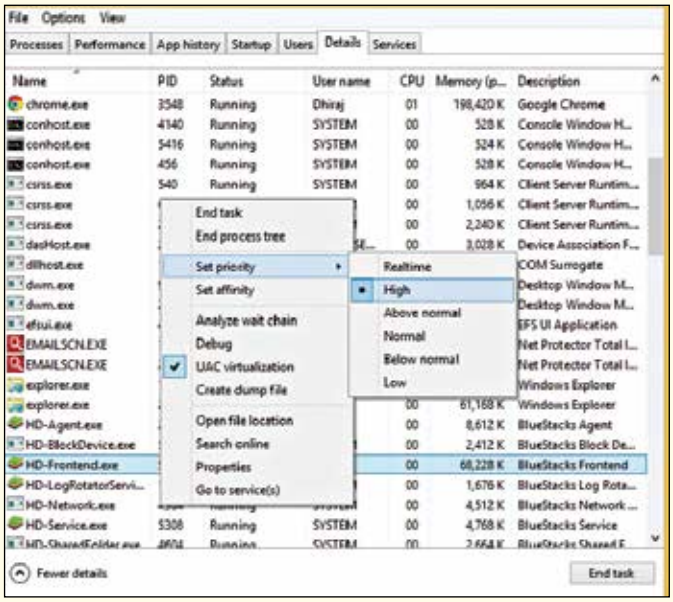
Note: Don't set the priority to "Real-time", as it could make your operating system unstable.

Another way to improve the performance is by increasing BlueStacks' RAM size. Follow the previous trick in this section.

UCWEB PC BROWSER

Among the most popular web browsers for mobiles, UC Browser, has made its way to PCs. Based on Google Chromium, UC Browser is the newest, feature-rich browser available for Windows.

The browser brings all the features from the mobile platform to Windows. Here are some tips and tricks to introduce you to this powerful novice browser and help you master it.



Set the priority to "high" to make BlueStacks run without lag

Save webpage as an image

Unlike other desktop web browsers, UC Browser for Windows lets you save a webpage as an image. It captures the entire webpage, not just the visible portion and saves it in PNG or JPEG format. To save a webpage as an image, browse the webpage > Click on the UC orb (located at the top-left corner of the browser) > Save page as > Save as image. Alternatively, you can also use hot keys [Ctrl] + [Shift] + [S] to do the same.

You can use hot keys to quickly perform other operations as well. UC Browser provides a glut of hot keys to perform a range of operations such as starting a new tab or locating the taskbar or muting a webpage. To find settings for hot keys, navigate to UC Orb > Settings > Hotkey.

Use mouse wheel to switch between tabs

Besides the [Ctrl] + [Tab] hotkeys, UC Browser offers a neat alternative to switch between tabs. It lets you to do this by using your mouse wheel. It isn't enabled by default, so click on UC Orb > Settings > Tabs > Check "Use mouse wheel to switch between tabs".

Optimise browser to speed up browsing

UC Browser enhances your browsing experience by giving you a few options to speed up browsing speed. To enable them, click on UC Orb > Settings > Speed up > check "Enable link preloading", "Enable next page preloading" and "Enable auto page scroll". The "Enable link preloading" option preloads the webpage just by pointing to the link. This saves time that would otherwise be wasted waiting for a web page to load.

The "Enable next page preloading" option preloads the next page (if available), so that the proceeding webpage is opened immediately on clicking "next".

The "Enable auto page scroll" option automatically scrolls to the next page once

you've reached the end of the page, offering a seamless browsing experience.

Use the built-in Ad Blocker

UC Browser for Windows has the Ad Blocker plug-in built into it. It blocks all unnecessary ads and provides clutter-free browsing. It's enabled by default, so to configure its settings, navigate to `UC Orb > Settings > Ad Block`. Here, you can enable blocking, customise ad blocking rules and manage exceptions.

Synchronise bookmarks with your phone and tablet

UC Browser has its dedicated cloud service called 'UC Cloud'. It works across all devices that support UC Browser and stores bookmarks on the cloud. To synchronise bookmarks from your smartphone to desktop, log in to Cloud Sync on your phone and it will automatically synchronise all your bookmarks. On your PC, log in to Cloud Sync using the same account and all the bookmarks that were synchronised will be imported in UC Browser for Windows.

All your mobile bookmarks will be found under the "Mobile bookmarks" tab located at the top corner of the browsing area.

Make use of the mouse gestures

One of the special features of UC Browser is the set of gestures that allow you to control webpages. With mouse gestures, you can perform actions such as move forward/backward, refresh and even restore a recently closed tab. Additionally, there are a few unassigned gestures which you can use to replace actions.

To configure mouse gestures, navigate to `UC Orb > Settings > Mouse gestures`. Change the gesture action by clicking on the operation name and choosing another operation from the list.

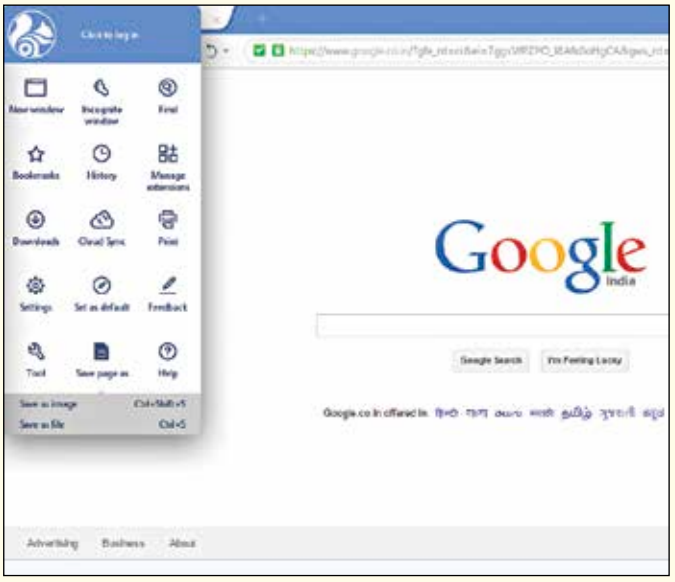
Download files off UC servers without data usage

Besides synchronising bookmarks, you can also upload files to the UC Cloud. Files stored here can be accessed from any device running UC Browser. In addition to this, UC Browser claims that files stored on UC Cloud can be downloaded without any data charge. This means you can upload files to the cloud storage service without the need to be online.

To upload files to UC Cloud, `click on the fruit icon located at the bottom -right corner > UC Cloud > Enter username and password > Upload your file there.`



Click on the fruit icon to quickly access UC Cloud



"Save as image" option saves in PNG format by default

Try Indian version of UC Browser

UC Browser also has an Indian version. What distinguishes it from the general version is the integrated cricket add-on. Keeping Indian cricket fans in mind, UC Browser developed this version so that you don't miss cricket scores while you're surfing. You can download the Indian version from http://dgit.in/IndianUCBrowser

Install your favourite Google Chrome extensions

All Google Chrome extensions are compatible with UC Browser. This compatibility is due to the fact that UC Browser's engine is based on Google Chromium.

To manage extensions, `click on UC Orb > Manage extensions > Click on "Get more extensions"` and you'll be redirected to Chrome Web Store.

Some of the best Google Chrome extensions that work with UC Browser are Pushbullet, Momentum, Taco, Hola Better Internet, Disconnect, Readability, Feedly and Grammarly.

Customise browser's layout

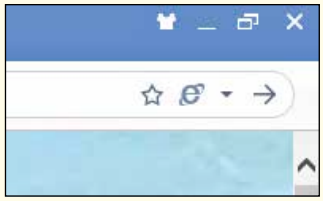
By default, UC Browser's layout has the Search bar, the Extensions bar and the Bookmark bar. Although these toolbars barely occupy any space on the screen, if you think they're causing clutter you can hide them. Navigate to `UC Orb > Settings > General > Uncheck "Search bar", "Extensions bar" and "Bookmark bar" to hide them.`

Use IE mode for Internet Explorer-only sites

Some websites are only compatible with Internet Explorer – this includes some Indian government websites that are best viewed in Internet Explorer. If you happen to visit any such website, UC engine won't be able to render it properly. However, UC Browser

provides an Internet Explorer mode. This mode works due to an emulator built within UC Browser. It changes the rendering and processing engine of the current webpage from Webkit to Trident.

To switch to IE mode, open an Internet Explorer-only site. Once the site has loaded, click on the small lightning button located in the address bar, next to the Favourites button. The browser mode changes on clicking it. The lightning icon is then changed into an Internet Explorer icon.



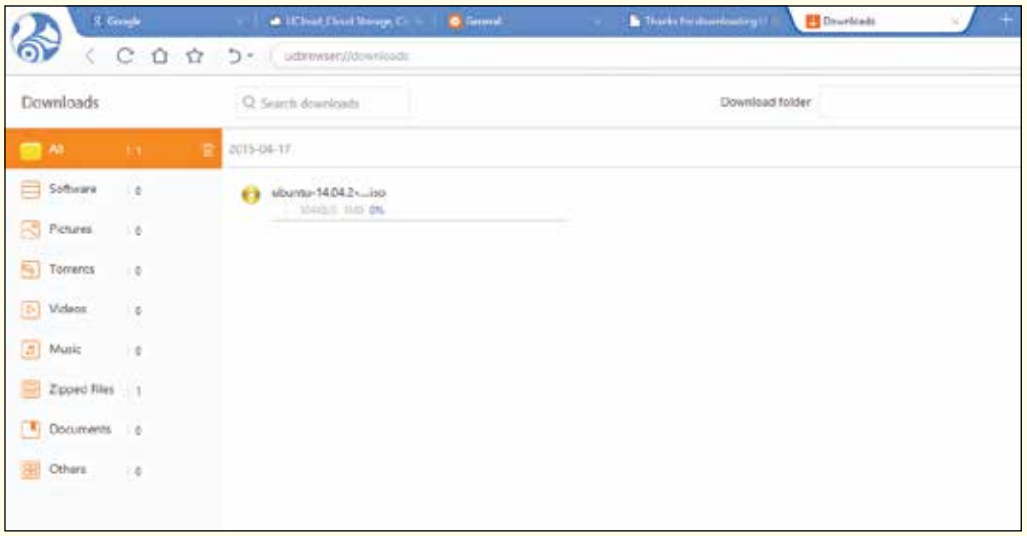
The Internet Explorer icon is visible next to the address bar

provides shortcuts to access similar types of files.

In addition to this, downloads can be safely paused and resumed at any point making it easy to add files to the queue. Removing multiple files from the download list is easy as well – simply select the files using [Ctrl] or [Shift] and [Delete].

FITNESS APPS

Summer is here and there can't be a better time to start off your fitness regimen. You might have joined the gym briefly at one point of your life, but procrastination got the best of you and eventually you stopped exercising. Staying fit is essential and even your cat would agree that sitting in front of your PC through the seasons isn't quite healthy. In this section, we'll give you several options to try to motivate you to move closer to your goal of healthy living using apps on your smartphone (there's an app for everything).



Browser automatically categorises all the downloaded files

Make use of the smart download manager

The integrated download manager in UC Browser is a powerful alternative to any third-party download manager. Unlike other browsers, the download manager in UC Browser automatically organises files by type. The clean and easy-to-use UI of the download centre makes it easy to find any previously downloaded file. Besides organising downloads by file type, the browser also

Simple running, walking & biking

To keep you motivated and on top of self-imposed goals, it's important to keep track of your fitness or workout sessions. However, if you're too lazy to track your walking, running and biking sessions, 'Google Fit', a minimalistic fitness tracking app, will do that for you. The app will track your activity on its own as you walk, run or travel. You can add your daily goal of the amount of time you want to either walk, run or bike, and it will track your progress every day, notifying you whether the goal has been achieved. You should note that Google Fit will always be tracking your movement in the background. If you want to set a custom training session, you can add an individual activity type along with the starting time and duration. It's available on the Android platform.

Get it here: http://dgit.in/1xHvVbt

Track only your footsteps

Very few pedometers out there are accurate, and we might have found the best one – 'Noom Walk'. In their pursuit of staying fit, some people prefer only walking either early in the morning or in the evening. If you've decided that running or cycling is not for you and only long walks will help you achieve a healthy body, Noom Walk is a great stand-alone pedometer app that's very easy to use.

Get it here: http://dgit.in/1DHkKx1 (iOS), http://dgit.in/1N4SWrA (Android)



Quick workouts, here we come!

View your complete health and fitness data

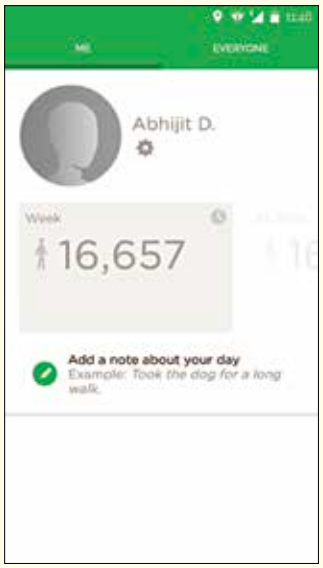
If you ever wanted to collect and store everything there is in regards to your health and fitness, 'Apple's Health' does a commendable job. Aimed at iOS users, it gives you a complete dashboard of your health and makes the data about your heart rate, calories burned, blood sugar, cholesterol, all available with a simple tap. The Dashboard gives you this information for the day, week, month and even the whole year. Everything that you eat, can be added into Health, that lets you track your calorie intake. You can also create an emergency card that will store your medical conditions and allergies, in case you need medical assistance in any given time.

Apple's Health is available on iPhone 4s or later and iPod touch (5th generation).

Get six pack abs

If you've ever aimed for six pack abs and failed miserably, don't lose hope, because now there's an app for that. 'Runtastic Six Pack' gives you workout programs for 10 days initially, that will extend to a month as you progress further. All the exercises are demonstrated by your virtual trainer, so that you do them right. You won't just be developing rock-hard abs, but will also be strengthening your core in an easier and organised way.

Get it here: http://dgit.in/1IQudGH (Android), http://dgit.in/1DjX4hB (iOS)



How far did you walk this week?



Connect with other fitness enthusiasts

Work out at home

If you can't find time to dedicate to a complete workout session everyday, 'Sworkit' can help you get the basic exercises done in just five minutes. Within the four different categories of Strength, Cardio, Yoga and Stretching, you can further choose workout types. All the exercises have a timer and are accompanied by short, high-quality videos. You can also create your own custom workout, where you can select exercises from more than 170 workout types. Workout sessions can be between five minutes to an hour. Available for iOS and Android.

Get it here: http://sworkit.com/



Google Fit tracks your steps

Run away from zombies

Don't be alarmed, there hasn't been a zombie outbreak yet, but we sure know who amongst our friends is more likely to survive if such a situation were to occur in the near future. While listening to music while running or jogging helps some get in the zone, others need a different kind of motivation. *Zombies, Run!* is an amazing game that makes running to stay fit as exciting as it sounds. This running game provides an immersive experience thanks to audio and voice recordings playing through your headphones. As you run, you'll be collecting supplies and tools, to build and grow your base. So if you've always been thinking of going out running, now you can, under the guise of playing a really good game.

Available for iOS and Android.

Get it here: http://dgit.in/1rjbrRl



Jogging has never been so fun

Capture portals

You love playing games on your smartphone, and here's another one that also makes you move around, eventually keeping you healthy. 'Ingress' is an augmented reality massively multiplayer online role playing game (MMORPG) that uses your smartphone's GPS. In the game, you open up portals at different places using the actual map and go around defending them from the other faction. You can also hack into the portals captured by the other faction to increase your influence over that area. Once you get the hang of the game, you might even head out on weekends to physically go around the city, capturing and hacking into enemy portals. While having fun spreading your faction's influence, you'll also have worked out.

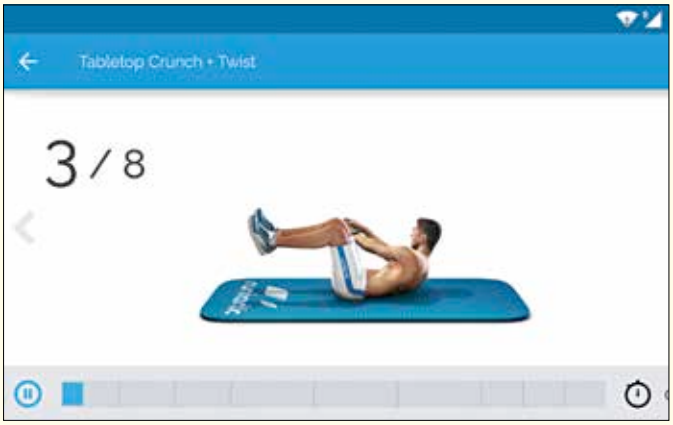
Available for iOS and Android.

Get it here: https://www.ingress.com/

Create your custom running routes

'Runkeeper' is a great app that tracks your running session using GPS. The voice assistant intermittently tells you about the progress you've made in every session and also guides you on your pace. Its website lets you create custom routes to run on so that you can plan your running sessions before you leave. This handy little feature proves useful when you want to run a certain amount of distance. The app also lets you pick among the other routes listed by fellow runners. Available for Android and iOS.

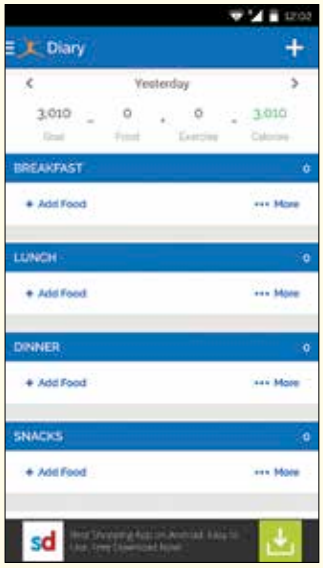
Get it here: http://dgit.in/1Jl4Ekg



Strengthen your core and build six pack abs in Runtastic Six Pack

Track your calories

While exercising is important, it's equally essential to be aware of your calorie intake. If you're looking for an app that lets you



Track your calorie intake in MyFitnessPal

comprehensively track your calorie consumption, you definitely need to check out 'MyFitnessPal'. You can search for endless types of food and also input the recipe of a dish to get its estimated nutritional value. Over time, as you keep adding more food, the app will learn your diet and throw up a list of your favourite food that can be added to your daily intake later. Get it at: http://dgit.in/1Enx2PJ

Have a daily 30-minute workout plan

You burn calories not only during a short sprint around the neighbourhood but also when you're moving around in the house and working. To also track your movements in the house, get an app named 'Human'. It passively monitors your activity, provided you're carrying your phone with you. The basic goal of Human is to make you move and keep you in activity for 30 minutes daily and that's all. The main advantage of the app is that you don't need to launch the app every time since it runs in the background and sends you notifications if you haven't completed your daily goal. It keeps motivating you by notifying you on your remaining goal. Available for iOS. Get it here: http://human.co/

Get some sound sleep

Your body isn't sufficiently healthy if you aren't getting a good night's sleep. It's especially difficult to sleep well if you live close to a street with constantly honking horns and vehicles zooming by late at night. 'Sleep Bug' offers you ambient noise, that helps you fall asleep sooner, also giving you a sound sleep. You can pick from various white noises that will make you feel like you're in a beach, zen garden, jungle or even underwater, thus making you fall asleep. The app lets you choose the duration of the noise to play and gives you options of adding more noises in the middle of the existing ones.

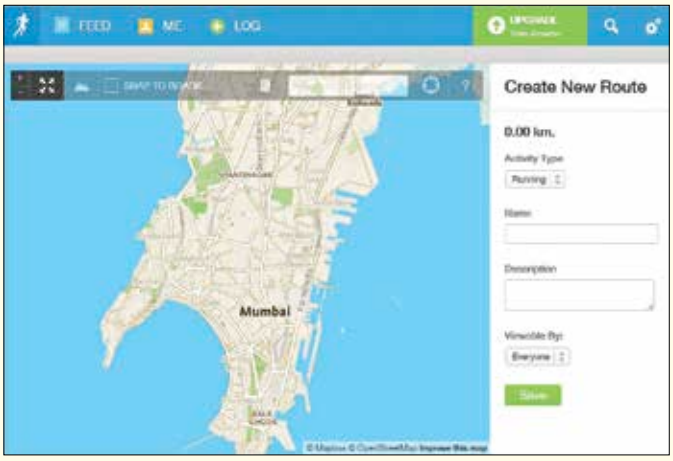
Get it here: http://dgit.in/1DrTd3r



Sleep Bug lets you choose from a variety of ambient sounds

Wake up fresh in the morning

No one likes the sound of an alarm going off early in the morning, and many a times, it leaves you in a grumpy mood. This particularly happens if you wake up during a deep sleep phase which is responsible for making you feel tired even though you've slept long enough. 'Sleep Cycle' is an app that analyses and monitors your sleep pattern and wakes you up in your lightest sleep phase. The app takes advantage of the highly sensitive accelerometer in your smartphone and detects movement on your bed (you must place the phone on your bed before sleeping) which determines your current sleep phase. When the app detects any kind of movement, it wakes you up in a window of 30 minutes from your set alarm time when you're in your lightest sleep phase.



Use existing routes created by other runners in Runkeeper



Apple's Health app tracks your entire health data right from calories burned to consumed

Get it at: http://www.sleepcycle.com/

Connect with other fitness enthusiasts

Posting images of your biceps and your high-intensity workout sessions on Facebook won't be taken very well by your friends on Facebook or even on Instagram because most of them don't care. However, sharing such pictures and the everyday progress of your disciplined training program will be well received on 'Pump Up'. Consider it a social platform for fitness freaks and enthusiasts, who love sharing their before and after photos from workouts, motivating like-minded people in the process. Users also post in healthy diets and exercises, that you can follow, to make your own. You can track a workout session by creating a training goal, that lets you customise the type of workout, duration and equipment that you'll be using. At the end of each training, you can post the results of the training session on Pump Up.

Get it here: http://pumpup.co/

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Fun Fact
It is believed that the first computer virus released in the world was a boot sector virus, which was created in the year 1986 by Farooq Alvi brothers.



Touchscreen scanner
Researchers might have come up with a new software that turns any touchscreen into a fingerprint scanner **http://dgit.in/TouchScan**

Failed overclocking attempts, updating firmware and the problem with space

We answer some common queries this month related to our primary weapons, our smartphones. People are clearly spending more time on their phones rather than going out for a walk in the park.

Q Overclocking woes

Hey guys, to start with, I know Radeon HD 5450 isn't a great GPU and it's not meant for gaming but it could handle a few good old games. My problem is that I have an XFX One HD 5450 1GB GDDR3 and its memory clock is set to 533 MHz. I've checked that the default memory clock speed for this card is 800 MHz but I can't get it over 625 MHz, above it the card crashes.

Is there any way to get it up to 800 MHz? I've already tried MSI Afterburner but it doesn't work. It's supposed to work at 800 MHz I guess :-/

I'm saying this because two of my friends have this GPU and their clocks are set at 800 MHz.

By the way, I could easily push my GPU Clock to a 845 MHz without any trouble but no such luck with my Memory clock. :(

Thanking you in advance :)

–Ayush Bagchi

A Hey Ayush, We noticed that the HD 5450 comes in two variants with one having DDR2 memory clocked at 400 MHz and the DDR3 variant running its memory chips at 800 MHz. Your card might be the DDR2 variant so if you've already managed to get it all the way up to 625 MHz then you must've already hit the ceiling. Also, if you aren't noticing any considerable gain in FPS then you might as well not push it any further. Say, if the gain between 600 to 625 wasn't significant then pushing it further will only give you diminished returns.



GPU-Z shows you the real clock speed figure and not the double data rate figure.

Another thing to note would be the software you're using to figure out the clock speed. In GPU-Z, you get to see the real clock speed figure and not the double data rate figure. This means 400 MHz in GPU-Z is actually 800 MHz and with GDDR5 memory the real clock speed has to be multiplied by four to get the actual data rate. So that's another explanation for your situation.

Q Update gone wrong

My friend bought an LG G3. He got the Lollipop update. But after the update, his memory card has stopped working. He did quite a lot of things to troubleshoot the issue. He inserted in a computer and formatted and again inserted in the phone but it didn't help. He even swapped the card which didn't do any good. Lastly, he Googled for some answers and had some success, but even if the problem goes away, it resurfaces after restarting his phone. He even tried factory resetting the phone, but it was of no help. He says that he is not for rooting the phone due to the risks. So you guys are his only hope. Please help him.

–Kangkan Talukdar

A Well Kangkan, your friend isn't the only one and this phone model isn't the only one to face this problem either. Often, firmware updates need to be followed by factory-resetting the phone and formatting the memory card. Your friend has taken care of the former but from what you've written it seems that he hasn't formatted the memory card using the phone itself. Using Windows to format a memory card gives you plenty of options and selecting the wrong one might throw up a few problems. So it is always best to use the phone to format the memory card.



Firmware updates need to be followed by a factory reset.

If that doesn't work then you might wish to get the ROM image and flash it as your last resort before heading over to your nearest LG service centre.

Q Quarantine or delete?

I am new to Ubuntu. Recently, I installed an antivirus called ClamTk from the Ubuntu Software Center. When I scanned



Why rebooting?

If you always wanted to know where and how did the term of "rebooting" the computer came from, read on to find out: **http://dgit.in/WhyReboot**



Fun Fact

The first computers weren't so fancy. In fact, one of the first computer was an abacus invented in Babylon in 500 B.C.



ClamTk is a pretty good Linux anti-virus

the home folder, it showed that there were 11 possible threats and gave me an option to quarantine or remove. Which option should I select? And there is no option to scan my usb flash drive. How to do that? And finally, people say that a linux distribution like Ubuntu cannot be affected by viruses. Is it true? In that case what is the use of an antivirus in Ubuntu? Thank you.

–Guna Nanthan

A You need to assess what these threats are. They could be simply tracking cookies or they might be malicious software. Quarantine lets you isolate the files from doing any thing and Delete removes it altogether. So if you are unsure then read up on the potential threat and Quarantine it. If any software of yours stops functioning after the quarantine you'll come to know whether to remove it from quarantine or not.

Linux has plenty of viruses but since it isn't as popular as Windows, it is far less targeted.

This link will help you figure out how to scan select partitions. http://dgit.in/HTClamtk

Q To dongle or not to dongle

I am a regular reader of your magazine. Soon enough, I am going to get a Wi-Fi connection for my home. But I am having a doubt, it's that some box-like Wi-Fi routers are available in market and at the same time USB Wi-Fi dongles are also available. So can you please tell me the difference between both in accordance to range and internet speed, and which one is better.

–Prashant Singh

A Hey Prashant, Wi-Fi dongles can also be routers. This depends on the model of the device but generally when you go for a Wi-Fi dongle, it's going to be a device that connects to a Wi-Fi access point and gives your computer Internet connectivity. However, of late, the Wi-Fi dongles available in the market are not limited in their functionality and often have GSM support so that you can not only connect to a mobile network but also switch the dongle to "Access point" mode. This way you don't even need to connect the dongle to a PC to enable it.

The key-difference in this age is that a box-type Wi-Fi router will have Ethernet or phone(RJ-11) ports which allows you to hook up to cable or DSL internet. So when setting up a Wi-Fi connection at home to make use of cable/DSL you will need those box-type routers. Moreover, depending upon what kind of connection it is you might also require a Wi-Fi router with a built-in modem. The dongles are what you'll attach to all individual machines in the house that do not have inbuilt Wi-Fi. Laptops, phones and tablets have Wi-Fi; desktop machines generally don't.

These box type routers are powered using adapters plugged into a wall socket. This ensures that they have more power at their disposal which in turn can be used to increase the transmit power of the antenna. This increases the range of the device.

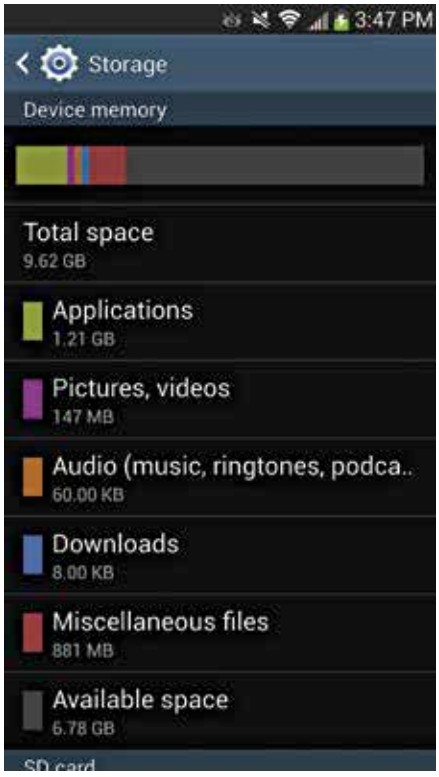
When it comes to data transfer speeds, the factors involved include the protocol (802.11 a/b/g/n/ac) and the antenna gain. This varies from device to device and the speed increases with each newer protocol revision. The latest protocol as of now is 802.11ac and that can give a theoretical throughput of up to 6.93 Gbps which most people don't need at the moment.

Q I need some space

Currently I am using a XOLO Q3000 running stock Kitkal 4.4.2. The main problem that I am facing is lack of App storage memory even though it has an internal memory of 16 GB and I have an SD card of 32 GB. There is only 1 GB to install apps. How could I increase my app storage without voiding warranty(root)? Any idea or tips. Is there any app for partitioning the memory.

–Vipul Patel

A The simplest way you can go about increasing space for your apps is by moving all your multimedia files from your internal storage to your memory card. Also, clearing the cache for less frequently used apps will free up plenty of space without being disruptive to the way you use your phone. Apps like Whatsapp and web browsers use up a lot of space

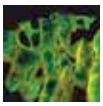


Check your storage distribution every now and then and remove unwanted files

owing to shared media and website cache data. Cleaning your cache isn't a difficult prospect, you can do this manually for each app or you can download apps that clean the cache of all apps installed on your phone. App Cache Cleaner is one such app.



Project Jarvis for home
Smarthomes are clearly the future, and someone has built a AI home automation and assistant
http://dgit.in/ProjJarvis



WiFi strength mapping
Check out this interesting DIY that lets you create 3D maps of your WiFi hotspots and its strength:
http://dgit.in/WiFiMapping

LED Infused Laptop Cover

Sandeep Kumar, a Digit reader came up with a nifty DIY to enhance your laptop's cover with nice, groovy lights

Mithun Mohandas
mithun.m@9dot9.in

We get plenty of letters from our readers and once in a blue moon we get something that really blows our minds. Sandeep Kumar from Gandhinagar, Gujarat, came up with this awesome DIY and sent us an image of his modded laptop cover. It's a collage that he's put together using magazine cover clippings and other elements which form the top surface. Underneath all of this lies an illuminated panel which is hooked up to the laptop's HDD and POWER status LEDs. Moreover, these panels have been incorporated with the cover elements to give the laptop a more groovy vibe. This DIY involves modifying the internals of the laptop, thereby voiding its warranty. Here's how Sandeep Kumar went about with this project.



Stuff you'll need

- Broken mobile phone LCD panels
- Multimeter
- Resistors - 2x 100 ohm, 2x 1k ohm
- Transistor - 2x BC478
- Laminated copper wires
- Lamination sheets
- Soldering Iron + Solder + Flux
- Nail polish remover
- Cutting blades
- Quick drying glue (Fevikwik)
- A4 Sheets, Metal ruler
- Screwdriver set
- Laptop disassembly manual

1 Ready the components

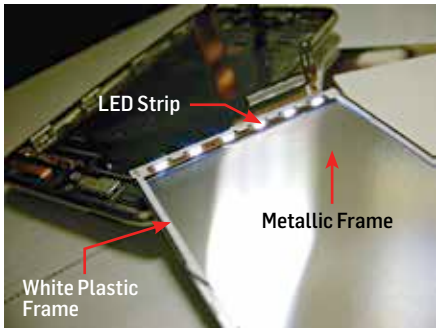
Begin with the LCD screen, you need to extract the display without damaging its internals. Along the inside of the rim, there are a bunch of SMD LEDs which you'll be repurposing later on. You need the LEDs and the polarised plastic sheets from the display panel.

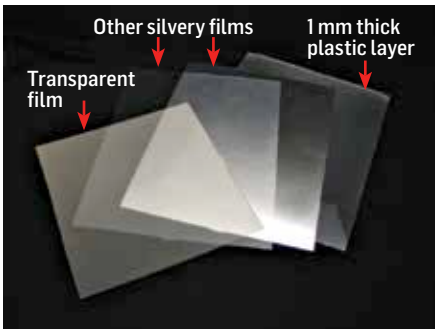
Once you've extracted the LEDs you'll need to figure out the polarity in case it isn't printed anywhere on the strip. Simply switch your multimeter to "Continuity Mode" and touch the multimeter leads to the LED strip's terminals. The LEDs will light up every so lightly if you've touched the proper terminals. The terminal connected to the red wire is the LED's positive terminal and the terminal hooked up to the black wire is the negative terminal. Often, the entire strip will already be wired properly with current limiting resistors and all you need to worry about will be the two main terminals at the end of the strip. In case the wiring seems confusing, wire each LED individually and connect them all in parallel or serial, using thin wires. You can come up with your own circuit using this website (http://dgit.in/DIYLapCov).

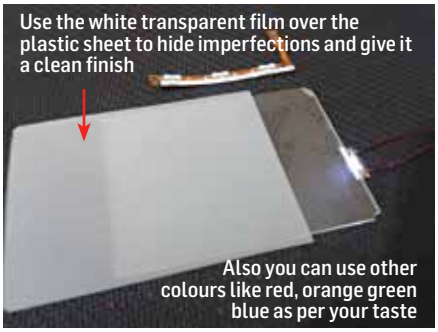
Now take the thickest plastic sheet you've extracted from the panel, this is generally a transparent plastic sheet that disperses light even across the entire panel. Attach the LED circuit on the rim of the plastic sheet and tape it down firmly.

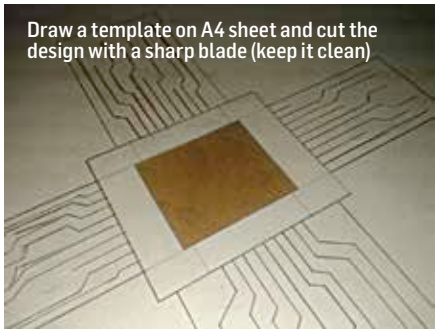
Now take one of the translucent plastic films you've extracted from the panel and



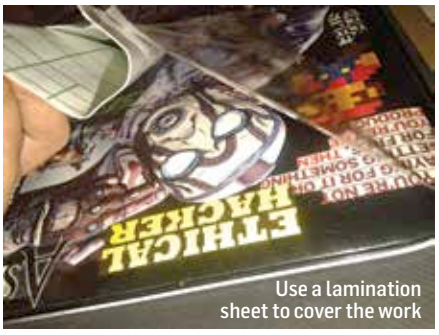


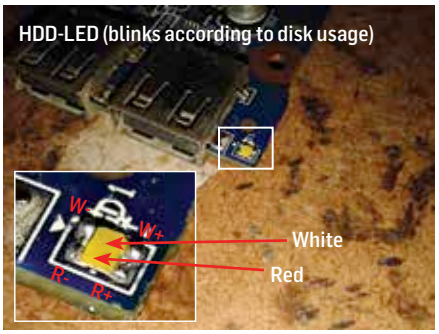


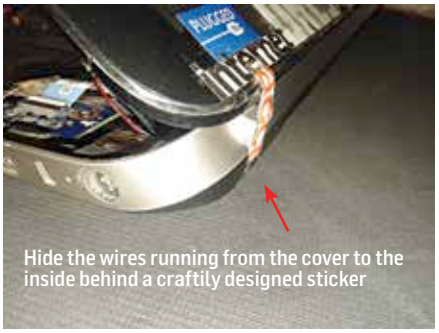












layer it onto the top of the thick plastic sheet. On the bottom, affix the silvery sheet which will reflect more light through the upper sheet. The size of this contraption should be a guiding factor for your cover design.

2 Prepare the cover

Grab a few A4 sized paper sheets and draw a pattern which you'll be cutting out. The dimensions of the section that is to be cut should be lesser than the light contraption we prepared in the previous section. Now you've reached the creative part where you design the cover using various magazine cutouts and what not. Once you've finalised the design you should go ahead and layer it over the illumination contraption. Check all the connections and glue it all together while maintaining an even thickness across the entire design. Once the glue dries off, laminate the entire setup (design+illuminated panel).

3 Hook up the wires

Open up your laptop and figure out where the status LEDs are. Check the voltage levels of the LEDs since you can't draw more than what it's currently drawing. Drawing more current will cause your entire setup to run dimmer than required. In such a scenario you'll need to use a transistor (BC478) as a switch (Forward-biased configuration) and source the current from a 5V source. Refer this site for instructions (http://dgit.in/DIYLapCov2). Hot wire your illumination panel's terminals to the status LEDs on the motherboard's laptop. Be careful about the polarity of the terminals.

4 Hide your wires

Laptops are built differently and the same approach might not work out for all. The last step is to route the wires in an inconspicuous manner. Take a look at how Sandeep has wired his cover in the last image and check if you can work out a similar solution.

5 That's it!

Let us know how this works out for you, we'd love to see more similar creative DIYs. Send in your creations to editor@digit.in. Meanwhile you can check out Sandeep's work over at http://dgit.in/DIYLapCov3.

Greatest unsolved problems in science

Mankind has achieved a lot, but some mysteries remain beyond our reach.

Ronak Gupta
readersletters@didgit.in



A meteor shower could have seeded life on earth, according to the panspermia theory

In the last two centuries, Science has answered many questions about nature and the laws that govern it. We've been able to research galaxies and the atoms that make up matter. We've built machines that can compute and solve problems that no human can work out. We've solved age-old problems in Mathematics and created theories that gave maths new problems. This article, however, is not about these achievements. It's about those problems in science that have left scientists scratching their heads, wondering if they'll ever yell, "Eureka!"

Turbulence

Turbulence isn't a new word. You're probably more familiar with it as the word that describes the sudden bumpiness on an aircraft's. However, turbulence in fluid mechanics is a whole different ball game. Flight turbulence, more technically referred to as 'clear-air turbulence', is caused due to the meeting of two bodies of air moving at different speeds. Physicists, however, have a much tougher time explaining this phenomena of turbulence in fluids. Mathematicians have nightmares about it.

Fluid turbulence is all around us. The jet from a tap that's turned on completely breaks into chaotic patches of fluid, different from the unified stream of jet we get when we only half open it. This is one of the classical examples of turbulence and is used to explain it to school students and graduates alike. Turbulence is ubiquitous in nature, occurring in various geophysical and oceanic flows. It's also of importance to engineers as it occurs frequently in flow over turbine blades, aerofoils and other bodies. Turbulence is characterised by random fluctuations in variables like velocity and pressure.

While there have been plenty of experiments and empirical data regarding turbulence, we're still far from a convincing theory about what precisely triggers turbulence in a fluid, how it is controlled, and what exactly lends it order through chaos. Making the problem even more difficult to tackle is the fact that the equations governing the motion of a fluid – namely the Navier-Stokes equations – are notoriously hard to analyse. Scientists resort to high performance computing techniques, along with experiments and theoretical simplifications to study the phenomena, but a complete theory of turbulence is still lacking, making fluid turbulence one of the most important unsolved problems in physics today. In fact, Nobel laureate, Richard Feynman, declared it as "the most important unsolved problem in classical physics." Quantum physicist Werner Heisenberg, when asked what he would ask God if given the opportunity, remarked: "I'll ask him two questions. Why relativity? And why turbulence? I really believe he will have an answer to the first."

We got a chance to speak to Padma Vibushan recipient, Prof. Roddam Narasimha and this is what he had to say: "To this day we are unable to predict the

simplest turbulent flows starting from the first principles of mechanics like Newton's laws, without ever appealing to experimental data about the flow itself. For example, it's not currently possible to predict the pressure loss in a pipe in which the flow is turbulent, but it's known thanks to clever use of data at some level obtained in experiments. The basic issue is that the turbulent flow problems we are interested in are almost always highly non-linear, and the mathematics for handling such highly non-linear problems does not seem to exist. There has been a widespread view among many physicists that whenever a new problem arises in their subject, it appears that somehow, like magic, the mathematics required for it is found to have already been invented. The problem of turbulence provides a counter-example to this rule. The laws governing the problem are well known and, for simple incompressible fluids under normal conditions, are embodied in the Navier-Stokes equations. But the solutions remain unknown. It is clear therefore that current mathematics is singularly ineffective in solving the problem of turbulence. As Richard Feynman put it, turbulence remains the greatest unsolved problem in classical Physics."

DID YOU KNOW?

Nobel laureate Werner Heisenberg made brilliant advancements in Quantum Mechanics and is most well known for "The Uncertainty Principle", but his doctoral thesis was on the topic of turbulence.

Such is the importance of turbulence studies that a whole new generation of computing techniques have spawned in its wake. Solving, or even coming close to a theory of turbulence will allow science to make better weather predictions, design power efficient automobiles and aircraft and have a better understanding of various natural phenomena.

The Origin of Life

We've always been obsessed with studying about the possibility of life on other planets, but another question that has baffled scientists even more is how exactly did life as we know it originate on Earth? Though answering this question will have little practical application, the path to the answer could lead to several interesting discoveries in fields varying from microbiology to astrophysics.



A graphic rendition of a black hole. A theory of quantum gravity can help understand black holes better

Scientists believe that the key to understanding the origin of life could be in finding out how two of life's characteristic features – reproduction and genetic transfer – could have begun as processes involving molecules that have the ability to replicate. This led to the formation of the popular 'primordial soup' theory, according to which the early Earth somehow had a mixture, a sort of broth of molecules, that were energised by solar energy and electrical storms. Over a long period of time, these molecules would have reacted to form the more complex organic structures that make up life. This theory was buoyed by the famous Miller-Urey experiment, wherein the duo succeeded in creating amino acid by passing electrical discharges through a blend of simpler elements such as methane, ammonia, water and hydrogen. The discovery of DNA and RNA, however, doused the initial excitement as it seemed impossible that the complex and elegant structure of DNA could have risen from a primitive soup of chemicals.

A school of thought exists that believes that the early world was an RNA world rather than a DNA one. RNA was found to have the ability to speed up reactions and remain unchanged and to replicate and store genetic material. But in order for RNA to be hailed as the original replicator of life instead of DNA, scientists would have to find evidence of elements that could form nucleotides – the building blocks of the RNA molecule. The glitch is that nucleotides are extremely difficult to produce, even in a lab's controlled environment. Again, a primordial soup seems incapable of creating these molecules. This conundrum led to another school of thought that believed that the essential organic molecules present in primitive life have an extra-terrestrial origin and were shipped to Earth from outer space via comets, leading to the development of the 'panspermia' theory. Another possible explanation could be the 'Iron-Sulphur world' theory that proposes that life on earth has a deep sea origin, spawning from chemical reactions that occur in highly pressurised hot water found near hydrothermal vents with a volcanic nature.

It's quite remarkable that even after a good 200-odd years post industrialisation we're still not close to finding out how our Earth gave birth to life. There's been massive interest in this problem from research groups in interdisciplinary sciences, resulting in several initiatives to carry out directed research in solving one of science's biggest mysteries.

DID YOU KNOW?

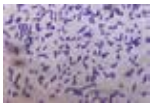
Discoverer of DNA's structure, Francis Crick, was the proponent of a theory known as 'directed panspermia', which hypothesised that advanced extraterrestrial civilisations deliberately seeded Earth with life.

Protein Folding

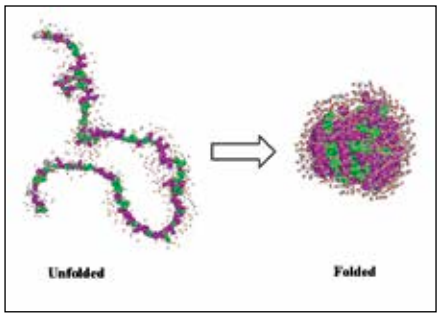
A trip down memory lane will take us back to high school chemistry/physics class where we all learnt (mostly by rote) that proteins are extremely important molecules and are the building blocks of life. Protein molecules are made up of amino acid sequences that influence their structure and, in turn, determine



Car turns into motorcycles
The Lane Splitter concept car can be split into a pair of motorcycles and also function together as a car. **http://dgit.in/LaneSplitCar**



Fun Fact
The strongest creatures on Earth are gonorrhea bacteria. They can pull 100,000 times their own body weight.



A simple schematic of a protein in a folded and unfolded state

the specific action of the protein. How a protein folds and assumes a specific functional shape is a long-standing problem in science. It's even been declared by Science magazine as one of the biggest unsolved problems in science. The problem in essence includes three parts: 1. How exactly does a protein evolve into its final native structure? 2. Can we come up with a computational algorithm to predict the structure of a protein given its amino acid sequence? 3. Given the large number of possible conformations how exactly does a protein fold so quickly? Over the past few decades, significant progress has been made on all three fronts however, scientists are still to completely decode the driving mechanisms and underlying principles governing protein folding.

During the process of folding, a large number of forces and interactions are at play, driving a protein to reach a state of lowest free energy possible which lends it stability. Due to the sheer complexity of the structure and the large number of force fields involved, it's difficult to understand the precise physics of a folding process beyond small proteins. The problem of structure prediction has been attacked by a combination of physics and powerful computers. While they've achieved success with small and relatively simple proteins, scientists still struggle with accurately predicting the folded shape of more complex multidomain proteins from its amino acid sequence, known as a 'priori'.

To understand the process, imagine being at a crossroad with a 1,000 different roads going to the same destination and you choosing the path that took the least amount of time to get there. A similar, but larger scale problem is the kinetic mechanism of a protein folding to a specific state amidst many possible structures. It has been figured out that random thermal motions play a major role in the rapid nature of folding and that the protein 'zips' through conformations locally, avoiding unfavourable structures, the physical route is an open question – solving which could also lead to faster algorithms for protein structure prediction.

The protein folding problem is arguably the hottest topic today in biochemical and biophysics research. The physics and computing algorithms developed for protein folding have led to the development of new man-made polymeric materials. Besides contributing to the growth of scientific computing, the problem has resulted in a better understanding of diseases like Type II Diabetes, Alzheimer's, Parkinson's and Huntington's – diseases in which protein misfolding plays a part. A better physical understanding of protein folding could not only lead to several breakthroughs in materials and biological sciences but could also revolutionise medicine.

DID YOU KNOW?

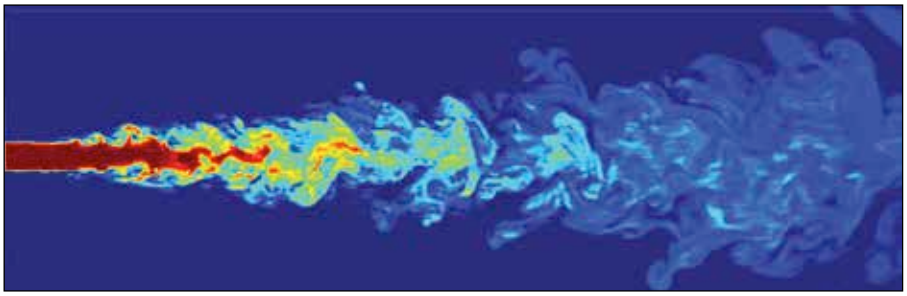
Investment management firm D.E Shaw's founder, David Shaw, also founded D.E Shaw Research, the company that built a computer called 'Anton'. The computer is one of the most advanced resources for running high fidelity simulations for protein physics.

A Quantum Theory of Gravity

We all know that an apple supposedly fell on Newton's head and led to the discovery of gravity. Suffice to say, the world wasn't the same anymore. Then came along Albert Einstein with his celebrated theory of general relativity. He re-imagined gravity as the distortion of space-time, the fabric that makes up the universe. Imagine a heavy ball on a stretched bedsheet and another smaller ball a little further away from it. The big ball would press down on the sheet depressing it, causing the smaller ball to be drawn towards it. Einstein's theory of gravity worked wonders and even explained the bending of light. However, when it came to sub-atomic particles governed by the law of quantum mechanics, the theory threw up all sorts of weird results. Developing a theory of gravity that can unify quantum mechanics and relativity, two of 20th century's most successful theories, has become the biggest research topic ever since.

This problem has birthed some new and exciting areas in physics and mathematics. The area that has gained the most traction is 'String theory'. String theory replaces the notion of particles with tiny vibrating strings that can assume various shapes. Each string can vibrate in a particular mode lending it a specific mass and spin. String theory is incredibly complicated and mathematically deals with ten dimensions in space-time – six more than what humans can physically perceive. The theory has been successful in explaining many of the oddities of gravity's marriage with quantum mechanics and has been hailed as one of the top contenders for a 'theory of everything'.

Another theory for formulating quantum gravity is 'loop quantum gravity' (LQG). LQG is relatively less ambitious, in the sense that it primarily aims to be a consistent theory of gravity without trying to achieve any grand unification of sorts.



SOURCE: TASC.LLNL.GOV

A simulation snapshot showing turbulence in a jet

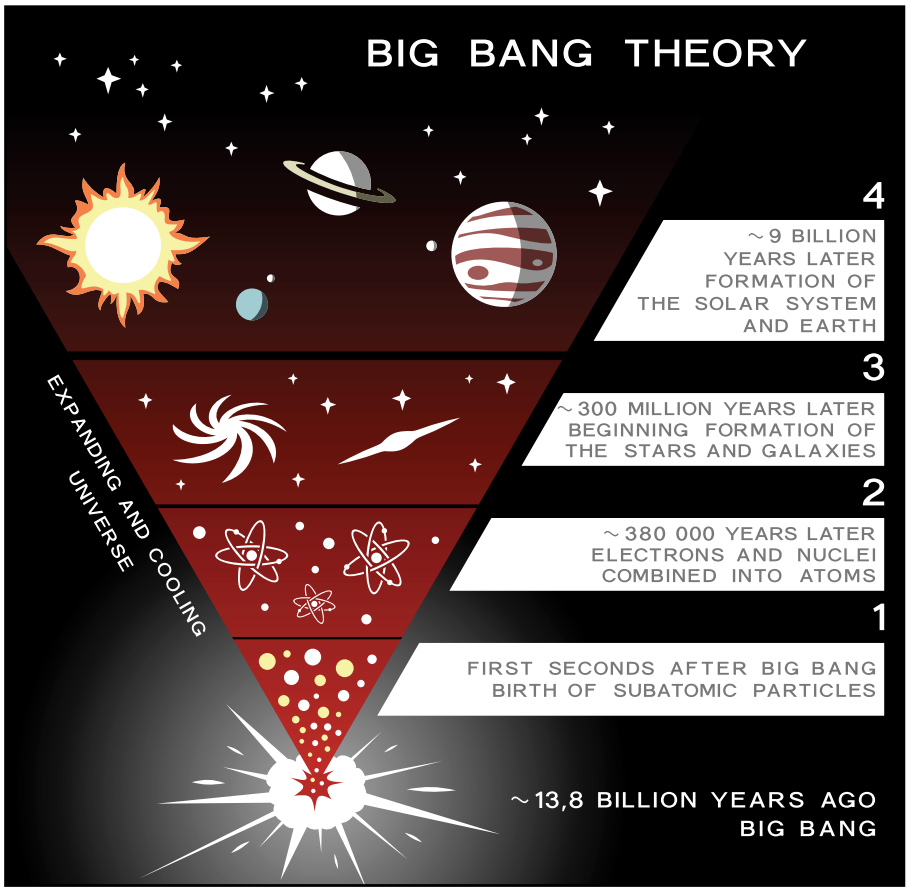
LQG imagines space time to be comprised of fine fabric stitched from tiny loops, hence the name. Unlike string theory, LQG doesn't involve added dimensions.

While both the theories have their own upsides and flaws, the theory of quantum of gravity remains an unresolved question because neither of the two has been proved experimentally. Validating any of the above mentioned theories is a major challenge in experimental physics.

The theory of quantum gravity might not have any noticeable effect in our daily lives, but it will be a true testament of how far we've progressed in science and allow us to make leaps in fascinating futuristic areas such as black hole physics, time travel and wormholes.

DID YOU KNOW?

Recently, scientists found that quantum gravity effects could alter the rate of electron production in the Large Hadron Collider (LHC) and this effect would occur at energies well within the range of LHC's operation. The existence of large extra dimensions would, however, have to be assumed.



A schematic of the Big bang event. A reverse big bang type event (Big Crunch) could lead to the end of the universe due to excess dark matter

Riemann Hypothesis

In an interview, distinguished number theorist, Terence Tao referred to prime numbers as the atomic elements of number theory, which of course is a spot-on characterisation. Prime numbers have no factors besides 1 and themselves and as such are the simplest construction elements of numbers. Prime numbers are also extremely erratic and follow no set pattern. A large number (product of two primes) is used to encrypt the millions of secure transactions processed online. The prime factorisation of this number currently takes practically forever. However, if we were somehow able to tame the seemingly random nature of primes and better understand how they work, we could allegedly come close to actually breaking the internet. Solving the 'Riemann Hypothesis' could bring us ten steps closer to understanding primes and could have major implications on banking, commerce and security.

As mentioned, primes aren't exactly known for being well behaved. What Bernhard Riemann did in 1859 was find out the number of primes that are less than a given number. Riemann's solution is related to a function called the 'Riemann Zeta' function and the related distribution of points on the integer number line for which the function becomes 0. The hypothesis is concerned with a special set of such points called 'non trivial zeros', which are supposed to lie on a critical line. This hypothesis has been verified for more than a billion such zeros and could unlock the mystery surrounding the distribution of prime numbers.

Anyone in the mathematics circle will be aware that the Riemann Hypothesis is one of the biggest unanswered problems there is. Not only will the solution have a huge impact on science and society, it will also guarantee the solver a million dollar prize. The Riemann hypothesis has been listed by the Clay Mathematics Institute (a private philanthropic foundation dedicated to mathematics) as one of the seven Millennium prize problems. The internet is rife with attempted proofs of the hypothesis, all of which have been rejected as valid proofs by the mathematics community. Rest assured, the internet is safe, for now.

DID YOU KNOW?

So far, only one millennium problem has been solved. In 2010, it was announced that Russian mathematician Grigori Perelman had proved the 'Poincare Conjecture'. Perelman refused to accept the million dollar prize.

The Survival Mechanisms of the Tardigrades

Tardigrades are a class of microorganisms found abundantly in nature in regions spanning most climatic zones and altitudes across our seven continents. But these are not your common microorganisms, they're creatures with such extreme survival skills that all those



We're Hungry
More than 25% of all ice-free land on this Earth is taken up by livestock. Those are some really hungry creatures indeed.



It's really windy today
Did you know that winds on Neptune can touch 2,200km/hr? Imagine wind surfing in that lot!



PHOTO BY: SPL/EAST NEWS

A tardigrade specimen, commonly known as a water bear

survival reality TV shows seem dull in comparison. Let's start with a fun fact – tardigrades are the first animals that could survive the dangerous vacuum of space. A bunch of these creatures orbited in outer space on the outside of a FOTON-M3 rocket. They were bombarded with all sorts of cosmic radiations and plenty of them made the trip back home to tell us their story!

DID YOU KNOW?

The superpowers of the tardigrade family were discovered way back in 1770's. In 1995, dried tardigrades were brought back to life, after eight years of water deprivation!

Not only are these organisms surprisingly suited for life in space, they can also withstand temperatures ranging from just above absolute zero to way above the boiling point of water. Also, sample this: they can survive vacuum as well as the pressure at Mariana Trench – 11 kilometres deep in the Pacific Ocean.

Studies have attributed some of these amazing powers to the tardigrades' ability to practice forms of cryptobiosis – a state in which metabolic activity is severely slowed down. This state, called desiccation, allows the creature to lose water and almost arrest all metabolism. When blessed with water, the tardigrade simply regains its rest state and moves on in life as if nothing happened. Sure, this ability can help it survive deserts and droughts, but how does it help this water bear survive in space or extreme temperatures?

In its desiccated form, the tardigrade performs some life-saving functions. A sugar molecule prohibits cellular expansion and anti-oxidants produced neutralise the threat posed by oxygen-reacting molecules present in outer space radiation. The anti-oxidants can help repair damaged DNA and this ability could explain the tardigrades' knack for surviving extreme pressures. While all these functions present clues to the secret of the tardigrade's superpowers, we understand very little about how the tardigrade functions on a molecular level. There's little evidence about its evolutionary history as well. Does its flair for outer space survival point to an extraterrestrial origin?

Research about tardigrades can have exciting implications. If cryonics became feasible, think of the applications! Medicines and tablets could be stored at room temperature and perhaps, we could design a super-suit designed for extreme exploration. Astrobiologists will be able to stretch their parameters to search for life outside Earth. If a microorganism on Earth could test nature's limit to such an extent, maybe there are such organisms on places like Jupiter's moons, lying in an unactivated state, just waiting to be discovered.

Dark energy and Dark matter

The study of matter on Earth is an all-encompassing field. It's a pity that all matter known to us makes up just about 5% of the known universe! The rest of the universe is "dark" and its major constituents are aptly named 'dark matter' (~27%) and 'dark energy' (~68%).

Any list of unsolved problems in science is incomplete without the mention of the mystery of dark matter and dark energy. Dark energy is the proposed reason for the acceleration of the universe. In 1998, when two different research teams confirmed that the expansion of the universe was accelerating, it debunked the then popular notion of gravity slowing down the universe's expansion. Theorists had, and still have, a headache explaining this, and in grand fashion named the possible explanation as dark energy. So far, no real contender has emerged for a correct explanation of the form dark energy takes. Current solutions state that dark energy could be a property of space and lend empty space energy, or it could be a sort of space-filling fluid that somehow leads to the acceleration of the universe, in the way that 'normal' energy cannot.

DID YOU KNOW?

A hypothetical form of dark energy called 'phantom dark energy' exists, which can cause such rapid expansion of the universe that everything will disintegrate into its elementary constituents and radiation. The event has been aptly named "Big Rip".

Dark matter is weird. It interacts with almost nothing, not even light, making its detection very difficult. Dark matter was discovered when researchers found oddities in the dynamics of certain galaxies. The known mass of the galaxy couldn't explain the deviations and they concluded that some form of invisible matter with gravitational pull existed throughout the universe. Dark matter has never been directly detected, but scientists have however observed the effects of dark matter via gravitational lensing (bending of light due to gravitational interaction with invisible matter). Thank god for dark matter's gravitational pull!

The constituent of dark matter is one of the biggest problems in particle physics and cosmology today. Scientists are of the opinion that dark matter is made up of certain exotic particles called 'WIMP' (or 'Weakly Interacting Massive Particles') that owe their existence to a theory called 'Supersymmetry'. Scientists also postulate that dark matter could be made up of baryons. Baryonic dark matter could be 'MACHOs' (or 'Massive Astrophysical Compact Halo Objects') like small black holes.

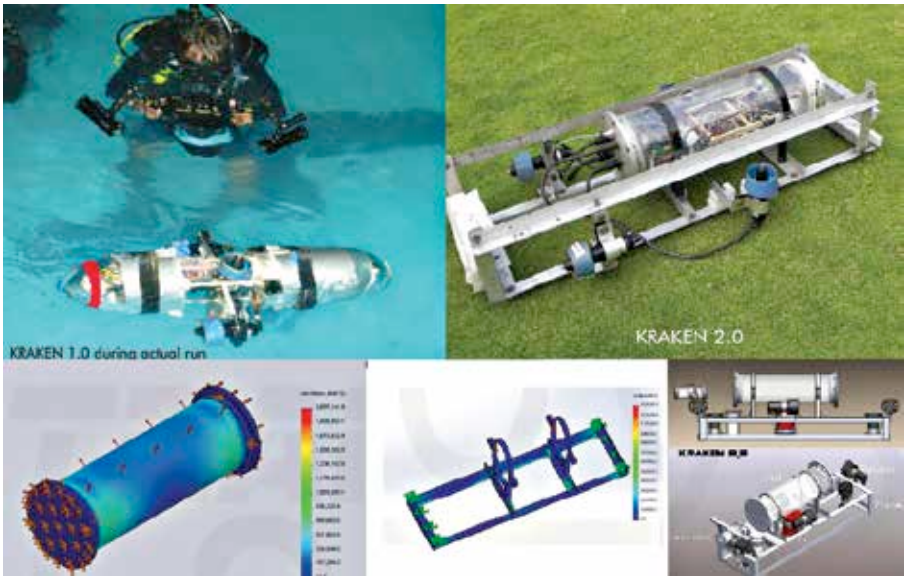
While both theories – dark matter and dark energy – arise from our inability to explain some observed features of the universe, they're in essence competing forces of the cosmos and both attract massive funding for large scale experiments. Dark energy repels and dark matter attracts. The dominance of either force will decide if the universe will expand forever or be drawn towards itself and ultimately implode in a rather interesting, Big Bang-type event, christened the "Big Crunch". For now, however, we're truly in the dark about both theories.

Creating impactful technology that actually matters

There's a lot cooking at West Bengal's premiere technical institute, as IIT Kharagpur's faculty-student research wing takes a crack at solving some of the biggest problems plaguing our time.

Team Digit
readersletters@digit.in

The Indian Institute of Technology needs no introduction for we're all aware of their notoriously difficult entrance exams and how they're the pinnacle of technical education in the country. With such a concentration of India's best young minds, it's only apt that they take on challenges head on and find support for their cause among both faculty and alumni. In the pages that follow, we take a close look at some of the interesting research projects currently underway at IIT Kharagpur and understand how these initiatives (in various stages of their incubation) can help alleviate some of India's (and the world's) problems with the help of new applications of technology.



Some of the creative contraptions on display at IIT Kharagpur

IIT KGP students refine AUV model, Kraken 3.0, to enter for RoboSub 2015

LOVE for BOTS – that is what has brought together a group of brilliant students from various undergraduate disciplines at IIT Kharagpur and formed "Team AUV". They have designed and built Autonomous Underwater Vehicles (AUVs) for research and competition purposes. The project is running under the Centre for Robotics, IIT Kharagpur and is being mentored by Prof. C.S. Kumar (Mechanical Eng. Dept.), Prof. Vishwanath Nagarajan (Ocean Engineering and Naval Architecture Dept.) and Prof. Vikranth Racherla (Mechanical Eng. Dept.). Team AUV is working towards participating in the International AUVSI RoboSub Competition. This annual competition, held at San Diego, California, is a platform for industries and students to display their skills in underwater robotics.

"We live in an age where we are trying to reduce as much human effort as possible, whether that's a good thing or a bad thing, is for you to decide but until you decide we'll try our best to make your lives as laid back as possible. Our lives are affected by Bots to an extent which is beyond our imaginations. From painting our cars to cleaning our houses they do everything without complaining. So we at Kharagpur Robosoccer Students' Group (KRSSG) thought of taking off their stress by making them play soccer.", says Abhay Kumar, (Fourth Year Undergraduate Student, Department of Ocean Engineering & Naval Architecture, Team Lead, Indian Institute of Technology, Kharagpur).

An autonomous underwater vehicle (AUV) is a robot which traverses and completes an assigned task /mission under the water surface. The team is developing the whole vehicle, including the control systems, hardware, sensor interfacing, manufacturing etc. that is building a platform by means of which the task is to be accomplished. Secondly the team needs to encode the mission/task efficiently in the vehicle so that it can effectively exploit the resources which the vehicle is offering and thus complete the given task. The applications of such a device are numerous and can forever change the way we look at the sea.

The team is yet again representing India by taking the Kraken 3.0 to the 18th AUVSI RoboSub. The team had previously cleared qualifying rounds when competing against over 30 international teams and has since worked really hard on developing this new version, working in the Hydrodynamics lab.

Cost effective dialysis

The kidney is essential to maintaining



Robobarista makes latte
Cornell University's PR2 is now fully capable of making a latte using a set of instructions from the Internet **http://dgit.in/Robobarista**



Singing and MRI
Researchers have mapped the muscles that are involved during singing **http://dgit.in/MRISinging**

our bodily fluids and any damage to this essential organ will lead to extremely expensive medical procedures like Hemodialysis, which is administered to patients suffering from various stages of kidney failure. Administering hemodialysis is a very expensive affair and for an average Indian, most of the times it is not affordable. Of all the instruments and consumables involved in dialysis, the cumulative expense is the highest for a hemodialyzer. It accounts for 58% of the dialysis costs incurred per session of dialysis.

The instruments are not manufactured in India and all hemodialyzers are imported from Germany, Korea or Japan. The challenge in manufacturing a hemodialyzer is in spinning the clinical grade hollow fiber membranes. India does not possess the technology to spin hollow fiber membranes of an inner diameter 180-220 microns and a thickness of 15-40 microns. Only 4-5 companies worldwide enjoy the monopoly in this business and all have their own patented technology. Due to this, each dialyzer costs `1000 - 1500 and ideally three such dialyzers are needed per week for each patient.



The present innovation is about a technology that has been designed to spin such clinical grade fibers in India. This technology does not use the conventional and expensive spinnerets which are employed by the companies abroad. Instead, simple, disposable syringe assemblies have been used to spin dialysis grade fibers having an internal diameter of 220 microns and thickness of 35 microns. The estimated manufacturing cost of such an indigenous dialyzer is expected to be around `200 - 300. High-cut off (HCO) membranes for treatment of myeloma patients are being developed as well. One such HCO membrane costs `50,000-70,000, but using this technology, it is expected to come down to `500. This is a project of national importance and was funded by the Department of Science and Technology, Govt. of India, and industrial partners of the technology are FORUS Health Pvt. Ltd and Renalyx, both companies based in Bangalore.

Dr. Shyam Vasudeva Rao and Dr. Lloyd Vincent (Senior Consultant Nephrologist, Narayana Hrudayalaya, and Bangalore) are the Directors of the two companies respectively and they are looking into the commercialization of the product. According to Dr. Lloyd Vincent, "The fibers match the clinical specifications of the market leaders and already reported biocompatible polymers have been used to minimize the chances of adverse effects during dialysis". Animal and clinical trials of the product are awaited, although in-vitro tests have been completed.

The product won the Runners up prize at the "5th National Award for Technology Innovation in various Field of Petrochemicals and Downstream Plastic Processing Industry" which was presented by the Chemicals and Fertilisers minister, Shri Ananth Kumar at Bangalore on the 21st of February 2015.

This product, once commercialized, can equip India with the technology to not only sustain itself in the field of dialysis, but also project itself as a major exporter of such hemodialyzers to South-East Asian countries, Africa and South America. Efforts are also on to make an end-to-end solution for dialysis by Renalyx and IIT Kharagpur.

Solar-powered cold storage

IIT-KGP engineers have developed a solar-powered cold storage system that works at zero running cost as a solution to the wastage of agricultural produce in India. The facility has been developed at the Science and Technology Entrepreneurship Park (STEP) of IIT-Kharagpur funded by TIETS, Govt. Of India, under the company banner, Ecofrost Technologies, by mechanical engineering graduates - Devendra Gupta, Prateek Singhal & Vivek Pandey. In the National University Competition 'DuPont: The Power of Shunya', this innovation has won a first prize.

The micro cold storage system has been tested and proven itself in a farmland in Karnataka. The first of its kind in the world, there is no running costs for this unit and it works on sustainable technology throughout the year. A patent for the technology has been applied for, Pandey said. A target to manufacture 20,000 cold storage units in the next five years has been set up from the Pune unit.

Using solar panels and a uniquely designed thermal storage methodology that controls compartment cooling in tandem with regular cooling this micro cold storage increases the shelf life of agricultural produce. The power generated is sent to the compressor, running at various speeds to adjust to the cooling demand. Instead of batteries, there is a thermal storage unit which can store power for more than 36 hours for cloudy or rainy weather.

Every year India loses around 30 per cent of food production due to wastage and contamination according to studies. This technology can drastically cut down on that.

"The cost of the solution depends on the commodity to be stored. Normally, a fruit farmer should be able to recover the cost within three years and earn at least twice of what he is currently earning," said Gupta. The team plans to sell unit directly to farmers and to create village-level entrepreneurs who will act as nodal points for cold storage in markets where a farmer can store his produce at a fixed cost. Website: http://www.ecofrost.in



By the Muse's Touch: Unusual Inspirations for Space Research

Be it an anachronistic apple or a stress relieving bath, inspiration can come from anywhere. We look at some innovations in space research that have come from unlikely sources

Samir Alam
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We weren't always like this - civilised, technologically advanced and socially responsible. There was a time when we were little more than tribal animals running through the lands with little hope for a future. But then something strange happened - we discovered uses for fire. Possibly the greatest discovery in human history. Memorialised in mythology and folklore, the discovery of fire has founded religions and nations. And all of it has led to that very fire thrusting our dreams towards the heavens, edging us further away from infinite ignorance. It was pure inspiration.

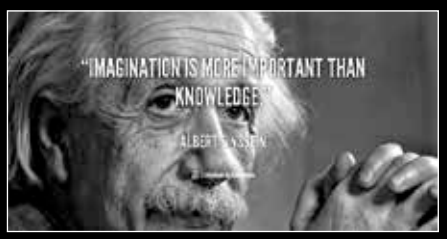
The sum total of history across the globe has recognised the importance of this divine tool. Inspiration comes from all types of places and has the power to transform us beyond our wildest dreams. We take a look at some of the unusual sources of inspiration that have defined and continue to define our approach to the final frontier.

Einstein's Dream

The story of how Albert Einstein worked as a patent clerk in Switzerland while devising his Nobel prize winning theories is known by all. But what isn't known is the source of inspiration for the man. As a child Einstein was not very remarkable, especially since the way he thought about the world wasn't considered normal. Even at the tender age of five he spent more time pondering the reasons behind a compass' function, than he did about anything else. So it isn't surprising that while only a teenager, Albert Einstein had already touched the inspiration that would give rise to one of his most astounding achievements. And it began with a dream about cows.

Einstein dreamt of cows. In this dream a herd of cows was lazily scattered and grazing in a field. The cows in the field were segmented into separate tracts with the help of electrified fences. But none of them were working, with cows trespassing freely, even Einstein knew that in his dream he was safe from electric shocks. But then he saw far in the distance a farmer approaching the fence, about to connect a new battery. And just as Einstein witnessed the battery being hooked up to the fence did he simultaneously observe all the cows jumping away in shock from the electric fence. This was of course normal and Einstein continued to move on towards the farmer and was soon in conversation with him. To his surprise Einstein learnt that the farmer's observations of the cows jumping away from the fence was rather different. The farmer claimed to have seen the cows jump away sequentially from closest to farthest, a moment after the battery was connected, not simultaneously as in Einstein's observations. Confused and mildly frustrated with the farmer, Einstein had an impulse to strangle him but just woke up in his bed instead. But the puzzle hadn't left his mind - not by a long shot.

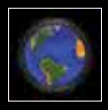
Over the years the problem pestered at Einstein until he was able to resolve a mathematical proof. He realised that light



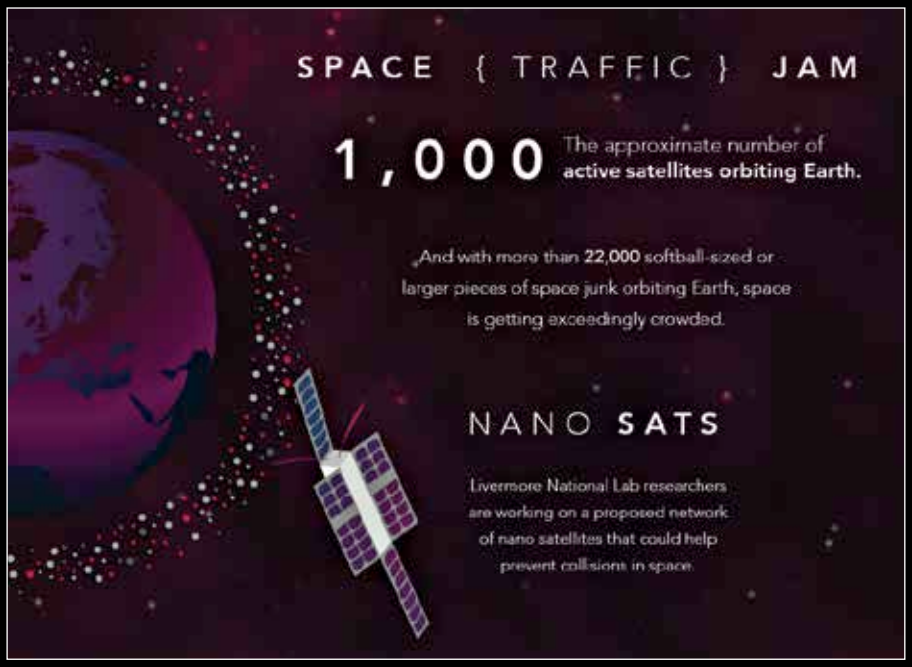
Einstein is the only name synonymous with "smart". We should listen to him



Fun Fact
If you drilled a tunnel straight through the Earth and jumped in, it would take you exactly 42 minutes and 12 seconds to get to the other side.



Lasering space junk
Japanese scientists are now proposing the use of lasers on the ISS to destroy space junk orbiting around the earth **http://dgit.in/SpaceLasers**



Space junk orbiting the earth is nearly impossible to track for possible collisions

as perceived by humans appears to be infinite in its velocity but in reality it wasn't. Einstein's perception that the activation of the current, the view of the farmer and the jumping of the cows only "appeared" to be simultaneous to him, in his own context and very different from the farmer's context. Neither were wrong, just relatively different in their observations. This explanation by Einstein demonstrated that the concept of time is relative to the observer and thus was born the acclaimed Theory of Relativity. The cows in his dream were just condensed examples of cosmic phenomenon. A discovery so profound that it now exists as a cornerstone in all our cosmic ventures; from global positioning satellites and the search for Earth like planets to finding the true age of the Universe. Industries such as computing and radio telescope wouldn't be possible without it. And to think - such an amazing discovery happened all because of a little inspiration from a dream about cows.



A typical 3U CubeSat in groups of 18 costs only USD 30 million

Traffic Jam Analysis

Another unlikely source for innovations in space research has come from observing mundane traffic jams. In the modern urban era, the problem of traffic has been a real pain. The issue of monitoring an ever increasing number of road vehicles in order to ensure safety and smooth operations has been a massive challenge. And even as the problem persists, many innovations have been utilised to combat the problem. Foremost of these solutions has been the use of traffic cameras. And it is this solution that has inspired space scientists to use the same concept in space.

As we all saw in the movie Gravity, space debris pose a massive risk to our well-being in space. Currently there are only 30 sensors in the Space Surveillance Network that track and monitor the 22,000 plus ball sized fragments orbiting Earth. This massive load of space junk is nearly impossible to track constantly and leads to over 10,000 false alarms of space collisions for every one genuine prediction. In order to improve the ability to track these objects more accurately, scientists from the United States Energy Department's Lawrence Livermore National Labs (LLNL) have designed a system called the Space-Based Telescopes for Actionable Refinement of Ephemeris or STARE. This new system was designed in 2010 and is currently showing promise in testing phases. The system is built using a large network of nano-satellites which are low cost and easy to produce. Each of these nano-satellites is intended to serve as a traffic camera in space that monitors the orbits of thousands of debris particles and correlates them using advanced algorithms for actionable intelligence.

Each of these nano-satellites is in a shape slightly larger than a Rubik's cube and works in units of threes. These units are called the 3U CubeSats and are to be deployed into Earth orbit at seven kilometers per second. But thanks to the software on-board, the satellites can use their relative positions from the Earth and Sun, along with the visual tracking of fixed star constellations to know exactly where they are in orbit. From their unique vantage point they are then able to track orbital debris and give predictive analysis up to 48 hours in advance with a 100 fold increase in accuracy. All this from adapting something as simple and boring as traffic cameras.

Pop Culture Inspiration

The history of our species is littered with stories. Fantastical accounts of amazing



The magic of fiction inspired Robert Goddard to make his imagination a reality



Solar-powered jet airliner
This futuristic three-storey solar powered jet is a concept airliner from designer Oscar Viñals
http://dgit.in/SolarPowJet

Corrigendum
The Space Age story "Ice Fishing on Europa" published in our March 2015 issue should have been credited to Samir Alam. We deeply regret the error.

and impossible events and things, which could have only been dreamed up or invented with pure thought. However, the need to achieve these impossible dreams and visions has many times defined the nature of science and technology. The sum total of popular culture; be it movies, books or even philosophy, has played a key role in innovations which are simply evidence of science catching up with imagination.

The biggest of these examples in space research is from science fiction stories in movies, television shows and books. While there are too many of these to list out, we shall hit upon the most profound influences that have shaped modern space research. The first of which is the impact of a fantastical 19th century story on the mind of one of history's finest scientific minds. Robert Goddard, the first American to build a liquid-fueled rocket, was inspired by H. G. Wells' novel War of the Worlds. The 1898 publication was a work of pure imagination that spoke of interplanetary travel. But to Goddard it was a goal worth pursuing, which he did when he successfully launched his rocket on 16 March 1926 paving the way for all future space flights.

Another critical technology - atomic power - was also inspired by H.G. Wells' plentiful imagination, and came from his novel The World Set Free. This story was written in 1914 and explored the idea of artificial atomic energy. The world of the story was set in 1933 and was almost prophetic since physicist Leo Szilard read the book and was inspired to solve the nuclear chain equation by 1933 giving birth to the nuclear age of energy manufacturing and war.



Astronaut Sunita Williams ran in the Boston Marathon from the ISS as imagined in the movie

However, the biggest impact on space research has most likely come from movies. The most influential of which has been the epic cinematic story written in 1968 by Arthur C. Clarke and directed by Stanley Kubrick – 2001: A Space Odyssey. In terms of real innovations, this movie has for many space scientists served as the inspiration of how practical space exploration might be in the near future. The visual story elements from the movie such as the manned orbiting station, were mainly responsible for giving birth to the International Space Station. The film shaped many of the realities that would soon come to pass as fact, such as low Earth orbits, permanent crews, flat screen displays, glass cockpits, entertainment media in orbit and human athletics in orbit.

In fact, this inspiration was commemorated on the 40th anniversary of the film, when in 2008 NASA sent a direct message from the International Space Station to a special screening of the film at the Academy of Motion Pictures Arts and Sciences in California.



An image from 2001: A Space Odyssey's international rotating wheel space station

Video Games. Really.

An unlikely source if ever there was one, but video games are now potentially becoming a source for inspiration for discovering innovations for space research. While institutions like NASA have always supported games, as in the case of the uber-realistic Moonbase Alpha and Mars Rover Landings, this has mostly been an educational outreach and marketing. But with 2013's Dark Side of the Jam and the Night Rover Challenge during the Centennial Challenges initiative, NASA is challenging game developers to address real problems and provide innovations. The Night Rover Challenge itself was used to explore innovations in energy storage technologies.

However, it must be said that the results of this radically new experience has yet to be released as something significant. After all, how can video game developers shed new light on something as niche as energy storage in space? But as history has shown – inspiration can come from anywhere – be it dreams of cows or traffic cameras, futuristic movies or fantastical story books, we must never underestimate the ability of the human mind to find an epiphany in the ether of life. And with it to further our own quest towards the stars.

68

Geek Life
Read on to find out the most annoying habits in the digital world.



Google Glass 2?
After pulling the plug from the Explorer Edition of Google Glass, the next version might be coming already **http://dgit.in/GoogGlass2**



Scosche boomBottle

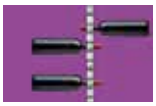
Imagine a bottle-shaped, wireless Bluetooth speaker that can slip inside any bottle cage to help you make your biking excursions musical and melodious? That's essentially what the BoomBottle is – a speaker fitted with two 40mm drivers and a passive subwoofer. Not only can this 8-inch device deliver sound output for up to 10 hours, it can also act as a speakerphone (if you hook it up to your smartphone). The speaker is IPX4 splash-proof. It has dedicated buttons for skipping, pausing and playing songs, and is just a great companion to have if you're going on a long cycling expedition.
Price: ₹8,288

Smart bells and whistles for your bike



BikeSpike

Sure, you secure your bike with a padlock. But what if a thief breaks past that easy barrier? This is where BikeSpike comes to the rescue. Nothing short of a spy gadget, the GPS device hides inside a custom-made bottle cage on your bike, tracking its movements all the time. And with a companion app, you can define custom perimeter ranges or shock sensitivity levels, and be alerted instantly if your bike leaves its pre-designated area or is subjected to severe shocks (both of which are signs of bike theft). It can collect, store and relay all this data in an easy-to-digest manner so that incriminating the culprit is just a piece of cake, once you get hold of your bike. Price: ₹8,227



Quirky wine rack
If you worry too much about running out of wine, this automated wine rack takes care of it. **http://dgit.in/PoppyReserveW**

Google Project Fi
What is Google Project Fi all about? Check out this article that tries to explain everything
http://dgit.in/GoogFiEn

Blaze Laserlight

Research suggests that close to 80% of bike accidents happen when a car upfront inadvertently turns into a biker's lane. To avoid such occurrences, and other potential mishaps, a USB pendrive-type device has been launched. It projects a laserlight image 5-6 metres ahead of the cyclist to alert anyone ahead that a cycle is coming through. Be it rain or shine, day or night, dimly-lit city streets, wide village roads or any other surface, the Blaze Laserlight can project a bright, attention-grabbing image of a cycle for anyone to see. It does so through a 300 lumen LED bulb, throwing a neon-green light up front. Easy to attach on any bike's handle and extremely light.
Price: ₹12,107





Hammerhead GPS

Cycling through heavy traffic to visit an unknown location on the map without turn-by-turn navigation can be quite cumbersome. But in the digital age, there's a solution to this problem as well. The Hammerhead GPS device sits atop your cycle's handlebar, and it has LED strips running along its length and breadth in a 'T' intersection. Pair it with a compatible navigation app on your smartphone, and the Hammerhead illuminates to signal whether you need to turn left, right or keep going straight at every crossroad. Pretty neat, huh?
Price: ₹5,421

ICEdot Crash Sensor

This helmet sensor is a must-have for any cycle enthusiast, purely from a safety point of view. At the time of extreme impact and sudden shock, which the sensor picks up, a signal is sent over Bluetooth to the sensor's companion app loaded on your smartphone. After this, a 30-second countdown timer is activated (giving you enough time to stop the alert in case of a false alarm), before emails and SMSes are sent to your emergency contacts with the GPS coordinates of the impact location. All this in the case of an accident, where every minute can be precious. Price: ₹9,566







Bulletproof clay
US Naval Research Laboratory has created a bulletproof material out of synthetic powerdered clay **http://dgit.in/BulletpfClay**



Garbage scanner
GeniCan makes throwing garbage useful, by scanning whatever you throw and adding it to your grocery list **http://dgit.in/GeniCan**

Save yourselves: The Most Annoying Digital Habits

Read to know if your habits feature among some of the most annoying habits in the digital world. And then, knock it off!



Avinash Kothuri
readersletters@digit.in

There are things that annoy all of us – road traffic, poor phone signal, long queues and slow restaurant service. We've been complaining about these for decades now. A new age is coming though, and a new age deserves new pet peeves. So guys, this is our #Digitrant. Remember, this is #just-forfun. We're not being #judgemental. But holy cow, these are #soannoying. #wearerunningoutofhashtagshere.

If you haven't gotten the drift yet, our first annoying digital habit on the list is...

Excessive hashtags

Hashtags were introduced as an easy way to give context to a particular statement/post. They allow web aggregators to compile all posts relevant to a certain story quickly and easily, and this in turn makes stories easier to spread. But that was before hashtags became the 'in-thing'. Today, your typical Instagram caption is 10% words and 90% hashtags, including such inane tags as #thiswholephrasecouldbeatag even though #theresnoway-thisgivescontexttoanything. Here's the thing: if your tag is so long and complicated that you're probably the only person using it, then it defeats the purpose of tags itself! This isn't as annoying as it is utterly pointless. What's even worse than this is the practice of #tagging #every #word #in #a #sentence. This can be extremely counterproductive as well, given that being sorted under #pirates, #of, #the, and #caribbean isn't quite the same as being sorted under #piratesofthecaribeean. Kids, this doesn't help spread the message and it doesn't make anything easier to read. Are you sure you want to be categorised by Twitter in the feed of the #the tag?
Annoyance Rating: *#two #stars*

Typng lyk diz

Leet speak became popular a long time ago, and until recently was still justified when SMSes had word limits per page. That's not a problem we face anymore in the day of the internet-based messenger. The usual argument by most people for continuing to use SMS lingo is that it saves time and effort. They don't realise, however, that the amount of effort it takes for the other person to understand what they're trying to say is twice as much as it would take for them to type that additional letter. Sometimes, even that claim doesn't stand true – "irrezyztyble" instead of "irresistible", for example. Now you're just eager to use more Y's, and it shows. It's imperative that if you're reading this and still communicate using SMS lingo, you switch before Facebook starts offering translations for every word you type.

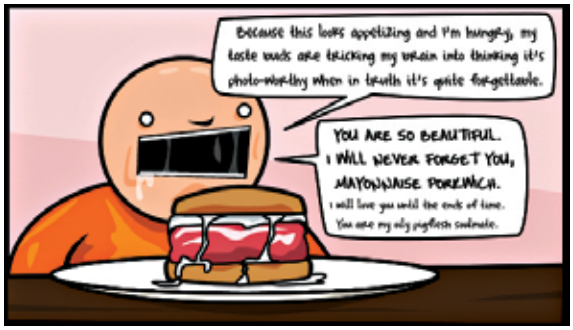


Hashtags, hastags everywhere

Anoync Rting: *dpndz n hw urgnt d msg yz btwn 3 strs n 5 strs.*

Food Pics

Everybody loves food. Even if the food is far beyond our means, there's great pleasure derived from looking at pictures of attractive food. This is entirely understandable and is the secret to the success of *Masterchef*, and more recently, movies like *Chef*. Food porn is a legitimate form of art, so what's the problem? Well, the problem is that all porn isn't equally good. Posting pictures of your meals regularly on online forums and captioning it with various onomatopoeias to describe your reaction to it is sort of the equivalent of amateur porn that nobody really enjoys. Your photography is substandard, your captions might be lacking, and the food itself may be ordinary, but a happy consumer who is satisfied with his meal is blind to all this, and won't think twice before posting his work online. We can't say we have much of an issue with the occasional dabbler, but a repeat offender who refuses to get any better at his job can often be quite grating on the newsfeed. Here's some advice, lads: leave it to the professionals.
Annoyance Rating: ✓✓✓



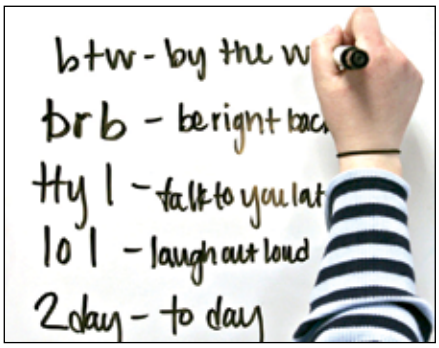
Tantalising food can trick us

Using your phone during a conversation

If we're talking about annoying digital habits, then it's safe to assume that texting on the phone while someone else is trying to talk to you is perhaps as annoying – bordering on rude – as it can get. When you're done with all your important chores in *Second Life*, and are finally ready to give this other world that you were born in a try, we encourage you to actually give it a fair shot. Don't be mistaken – we're all for you having a thriving digital life (We're called Digit, after all) – but getting lost in your gadget while spending time with other people is not only annoying for the other person, but is also very disrespectful. To give you an analogy you're probably more familiar with, imagine if in a game of *DOTA* you're being ganked in the bottom lane, and your teammate who is a whisker away is busy farming neutral creeps while you're feeding the opposition – that's what holding a conversation with someone who's texting someone else feels like.
Annoyance Rating: ✓✓✓✓

Pseudo fanboys/ Pseudo intellectuals

Two days into the FIFA World Cup and you'd be surprised how many people suddenly seem to know everything about the game. People would be so vocal on social media, you'd be forgiven for mistaking them to have not just switched sports, but also nationalities. There are the obvious 'Ronaldo+Robben+Ribery+Dhoni+... =Messi' arguments that are extremely polarising, and also pretty evidently show the expertise of the poster in the subject matter. And then, there are the more impressive impostors. They'll scour all the post-match reviews, pick up bits and pieces, and string them together to form intelligible and extremely safe opinions that no one can argue against, leading them to believe that the internet world has now recognised their proficiency in the subject matter – which couldn't be farther from the truth.



Abbreviations have become commonplace

This isn't limited to sports however, as the days following the release of Christopher Nolan's *Interstellar* showed us. Suddenly, everybody was an armchair astrophysicist and could speak quite intelligently about how feasible it is for a habitable planet to exist so close to a supermassive black hole. The Wikipedia page on 'spaghettification' received more hits in a few days than it had in years, and literally everybody on your newsfeed knew that ice clouds were the most unrealistic part of the movie. Maybe, we're being pseudo intellectuals ourselves by dividing people as "real" and "fake", but we're going to live in our little bubble and continue being pretentious while calling out the posers.
Annoyance Rating: ✓✓✓ *or* ✓✓✓✓ *depending on which side of the argument they're on – yours or against yours.*



Risking your life for a selfie isn't worth it



Overthinking anyone?
Researchers have found that thinking causes some of your cancerous brain tumours to grow faster **http://dgit.in/CancerBrain**



Fun Fact
If you open up the case of the original Macintosh, you will find 47 signatures, which is of each member of Apple's Macintosh division of 1982.

Selfies

You knew this was coming. There are some things that you know are bad for you, yet you indulge in them now and then just because you enjoy it – they're called guilty pleasures. That 'Death by Chocolate' you just can't resist, the daily 'I'm quitting after this one' cigarette, or the odd Honey Singh song you stop humming just as you realise someone is going to hear you – all fall into this category. Almost all of these are understandable (even the Honey Singh one), considering how often these songs are played. But then, there are things that are inexcusable – selfies. Sure, we've all indulged in them at some point of time – blame peer pressure – but just the fact that they make such an easy target for all the narcissism and self-objectivism allegations ensures that we'll all remain hypocrites and condemn selfies. The nature of selfies has advanced since its inception, and we've moved on from bathroom selfies to protest march selfies and road accident selfies. The gift of a selfie-stick today can be a genuinely thoughtful one, or an ironic jab, depending on who's doing the gifting. To make matters worse, there are now devices being made that can click selfies by just tapping them. Skynet is next, we're sure.
Annoyance Rating: ✓✓✓✓, *but* ✓ *if the subject is an attractive individual who comes up with better captions than that 'misfits' quote by Steve Jobs*

People who argue without reading the entire article

We're calling it right now – there'll be people reading this article who without having read the entirety of it would safely call the writer of this article pretentious and preachy without realising that this is a tongue-in-cheek article that's meant to be taken light-heartedly. They aren't reading this paragraph, so we took the liberty of saying it again. Combine this trait with the rise of clickbait titles, and you've got a recipe for hundreds of misguided comments under popular blogposts, explaining how everything is wrong and the writer is an idiot. He may still be one, sure, but at least do us the favour of reading our work before branding us.
Annoyance Rating: ✓✓✓✓✓

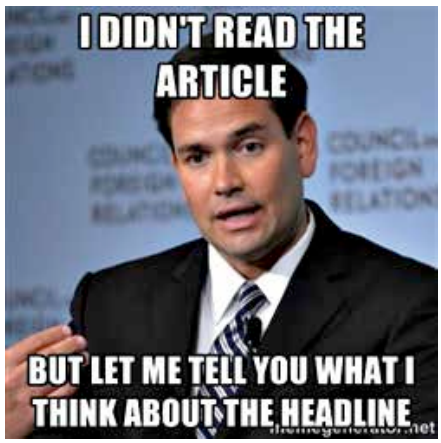
Listicles

One of the more recent phenomena that has completely taken over our feeds. Absolutely every Facebook timeline is filled with people posting listicles, tagging their friends and going "1, 5, and 33 are soooo YOU :D :D :D !!!"
We know it's frustrating, but you've got to pause for a second and admire whoever reintroduced listicles in pop culture, for s/he is a genius – an evil genius, but a genius nonetheless. Listicles toy with the human mind in more ways than one. Let's look at...err...a list citing why listicles are so effective:



Too many hashtags defeat the purpose

1. **Numbers:** The human mind loves things that pop out and catch our eye – and numbers do exactly that. They also make you feel in control of the subject, and give you a false sense of mastery.
2. **Images:** Just like with numbers, the human mind grasps images and retains them for a lot longer. Listicles – by reducing on the amount of content – leave a lot of space for images, thus making them very attractive to a human mind that likes to locate and digest information spatially.
3. **Makes you feel special:** By making a list of about 17 points, there are bound to be more than one that relates to more or less everyone, in turn indirectly making them feel more connected to the article.
4. **Appeal to curiosity:** "Number 14 will blow my mind? Really? What's so special about number 14? Well I guess I'll just have to see for myself." Note that the item that's supposed to blow your mind is never in the first half of the list, and therefore requires you to quickly traverse at least half the list if you want to see it.



Opinionated folks are a dime a dozen



Don't be insulting – put that phone away

However, listicles have adverse effects on the human mind. They don't exercise your brain at all, proven by the fact that the average attention span of a human being now is eight seconds – one second less than that of a goldfish! We're finding it tougher to go through a wall of text now than we did two years ago. Further, since all articles containing disparate points, a need for structure in thought has diminished. Despite knowing all of this, we're sure to click the next clickbait listicle title and spend a precious two minutes on it. It's really a surprise the word 'gullible' isn't in the Oxford dictionary.
Annoyance Rating: *"India's leading tech magazine gives rating on how annoying listicles are, and it will blow your mind!"*

So, this was our list of the most annoying digital habits that people have. If you indulge in two or more of these, we encourage you to rethink your digital habits. #justkidding

STEAL THIS MAG

OR BUY IT, EITHER WAY YOU'RE GOING TO SAVE A TON WITH ALL THE AWESOME **LOW BUDGET TECH** WE HAVE INSIDE THIS



Well, if you actually succeeded in stealing this magazine, great work. If you paid the full amount to get your hands on it, don't worry, as we have plenty of products to hit you with, something you can buy at virtually every price bracket – starting at ₹200 going all the way up to ₹10,000. And all of these products are the best at their respective price bands, available on a trusted online shopping portal for you to purchase from. Fingers crossed on respective stocks lasting, eh? By getting hold of this magazine you've done a great favour to yourself – let me explain how. If you are moved to purchase any of our inexpensive product recommendations under ₹200, you've effectively nullified the cost of this magazine. Similarly, if you're inspired to purchase a gadget mentioned in the next seven pages, you are effectively purchasing goods equivalent to 1 year, 3 years and 6 years of Digit subscription – hint hint. And don't miss the feature on the best cheap product upgrades!

INDEX:

72 BEST PRODUCTS TO BUY UNDER ₹999, ₹4,999 AND ₹10,000
Easy on your wallet. Guaranteed.

79 TOP 10 TECHNOLOGY FIXES UNDER ₹5,000
Smart. Cheap. Sensible.

BEST PRODUCTS TO BUY ON A BUDGET

Here are a bunch of gadgets we think you should want so badly, that you could even consider giving up a subscription to your favourite magazine for. Or not...because we're a lot more valuable in the long run! Best under ₹999, ₹4999 and ₹10,000.

By Team Digit

AUDIO

Sennheiser CX 180 Street II

An upgrade to the popular old CX 180, the Sennheiser CX 180 Street II is a marked improvement above its predecessor that retains its nice design and build quality.



It comes with a long enough 1.2 metre symmetric cable that also has a cable binder. While you won't get an inbuilt microphone with it, the set doesn't disappoint when it comes to the sound quality. Add to that an impressive 2 years warranty, and you have a pretty good deal.

Price: ₹999

URL: http://dgit.in/CX180II

Zebronics Sigma Two

Smartphones and feature phones have long since replaced PMPs. However, at a really cheap price, and for specific tasks such as music while jogging, PMP are still decent buys. They're also great gifts for teenagers. The Sigma Two by Zebronics does just that as it's a simple MP3 player with support for MP3/WMA/ASF/WAV along with inbuilt FM radio and voice recorder. This is quite a loaded, yet cheap MP3 player to opt for.

Price: ₹999

URL: http://dgit.in/ZebSigma



Huawei Bluetooth Mini Speaker

Are you one of those people who just cannot do without music? Whether it's browsing the Internet, reading something, or even while you're in the shower? All you need is a trusty wireless bluetooth speaker that you can carry along with you wherever you go. And not just another clunky one but a small one that looks good and sounds alright as well. The Huawei Bluetooth Mini speaker is the one to go for as not only is it cheap, it also works as advertised, supports A2DP and can connect two devices simultaneously.

Price: ₹999

URL: http://dgit.in/Blue_Mini



Dell AX210CR

Music is best experienced in stereo and nothing will change that. This is why no matter what your budget, you should opt for a nice stereophonic set. If you're looking at USB powered 3.5mm speakers and space is one of your major concerns, then consider the Dell AX210CR as not only they're small enough to dump anywhere you please around your PC, but they don't cost a bomb and you don't need an extra plug point. Instant plug and play goodness for cheap.

Price: ₹900

URL:: http://dgit.in/DellSpeak



MOBILE

Vismiintrend Selfie stick

Come on now, you didn't think we'll exclude one of the things that (arguably) made to



TIME magazine's best inventions of the year list did you? Well, everyone including their grandmother loves taking selfies these days and it's the fad of the current generation. This can also be seen by the fact that smartphone manufacturers are improving the front camera quality of their new phones. But why take half measures while taking that duck faced selfie or groupfie when you can invest in a selfie stick with a wireless trigger?

Price: ₹820

URL: http://dgit.in/Stick_Selfie

Mi 10400 mAh Power Bank

Although smartphones and other devices are getting better by the day in terms of the sheer amount of computing power that they possess, where they still lack is their capability to keep themselves running for long. Courtesy, the current battery



technology of course which is yet to catch on. This is why you may have definitely experienced anxiety generated because of the lack of juice in your smartphone when you would've needed to use it the most.

Forget your worries and get yourself the Mi 10400 mAh power bank as this will literally last you more than a couple of full battery charges even if you have the best flagship smartphone out there. And at this price, it's a steal.

Price: ₹999

URL: http://dgit.in/MiCharger

Videocon V1393

It's good to own and use a smartphone but not everyone needs a smartphone and certain scenarios work out better when using old feature phones. Apart from the basic connectivity functions (calling and SMS) that you get with them, you don't have to worry even when you use them extremely roughly. Not to mention the longer lasting battery that would put any smartphone available today to shame. And when you get FM radio with recording, Dual SIM compatibility goodness coupled with support for SD cards upto 16GB in capacity for under 1K, no one can complain. Buying the Videocon V1393 for use as an alternate phone when you're out holidaying is also a plausible option.



Price: ₹999

URL: http://dgit.in/CheapPhone

SanDisk Ultra 16GB OTG MicroDrive

We can never have enough space when it comes to storing data these days. No matter how much storage capacity our phone/tablet has or the MicroSD card that we've put inside them adds, we always seem to run out of space sooner or later. This is where USB On-The-Go (OTG) comes to help as making use of OTG feature in Android devices, you can connect compatible USB devices to your Android device. This means that you can use external flash storage to instantly



connect and transfer data to and fro from your smartphone/tablet. This SanDisk Ultra Micro USB drive that features a Micro USB connector at one end and a regular full-size USB at the other end is an interesting and useful 2-in-1 pen drive.

Price: ₹999

URL: http://dgit.in/SanDiskOTG

PC & GAMING

Amigo 2.4GHz Wireless Gamepad

Game controllers are quite handy especially when you want to play RPG's, hack and slash, platformers and even use emulators for old consoles on your PC. This is why it's always good to have a controller at hand. When you can't afford to get the pricey wireless XBox or XBox One controller for Windows, don't fret as you can still get a decent controller that too in Rs.999. This bright red game controller in a transluscent plastic body from Amigo is wireless with an operating range of 7 metres and supports three platforms - PC, PS2 and PS3.



Price: ₹999

URL: http://dgit.in/AmigoPad

Dragon War Leviathan

Why buy just any other regular mouse when gaming mice are available for cheap these days. Not only do you get a cool



looking mouse with all the bling, but you also get something ergonomically designed. The Leviathan by Dragon War is one such popular mouse that's made for right-handed gamers. With a 3200 DPI laser sensor and a total of nine programmable control buttons, the Leviathan is no slouch in terms of features and even has four pre-set DPI levels. What's nice about the Leviathan's package is that it even comes with a cloth based gaming mouse mat.

Price: ₹999

URL: http://dgit.in/DWarLev

Logitech M185 wireless mouse

If you're a laptop user who prefers using a mouse instead of the touchpad, you know how important it is to carry around a decent mouse. It's even better to have a wireless one with a mini receiver as it provides you more freedom of movement when it comes to using your laptop how you want. The Logitech M185 is a wireless mouse with 2.4GHz wireless connectivity and comes with an extremely small wireless receiver as well. Available for just Rs.950, the M185 comes in three colours to choose from namely Grey, Red and Blue and is a good ergonomically designed mouse to go for.



Price: ₹950

URL: http://dgit.in/LogiLap

Belkin 4 socket surge protector

We all need them and most of us use them. Surge protectors or spike guards as they're known by most of us are a godsend when you have to connect and power multiple devices together while also providing protection to your devices from sudden power surges. This 4-socket surge protector by Belkin can ground AC power with a 3-line protection that too for all the four sockets. This spike strip features a surge energy rating of 200 Joules with a maximum spike current limit of 6500 Amperes which should be more than enough. Apart from all this, you also get an amazing lifetime warranty. Need we say more?



Price: ₹999

URL: http://dgit.in/BelkinSur

HOME

Russell Hobbs RCM1 Coffee Maker

Coffee is like of the most amazing inventions of all time especially considering the fact that millions of people around the world drink a cup of coffee right after they wake up and do anything else. The early morning dose of caffeine has a place in our routine like that of oil in an engine.



Hell, even this article was written after having a huge mean cup of joe. This is why, a coffee machine can work wonders and give you the access to instant coffee anytime you want. The Russell Hobbs RCM1 is available for under a grand and features a removable filter as well. It'll make an indispensable addition to your kitchen for sure.

Price: ₹985

URL: http://dgit.in/CoffeeMak

Comfort URC-7130 Universal Remote



With the advent of technology, we now have multiple devices and appliances available for use at home and more often than not, all of these devices have to be controlled using a different remote. Yes, we humans are lazy and we've all annoyingly experienced the problem we face when we have to use two separate remotes for the T.V. and the set-top-box. This is just a short example of it but when it comes to controlling every remotely controllable device that we have, it's silly to go around in search for the remote for each device that we need to control. Enter universal remotes. The URC-7130 is a universal remote with 41 buttons and can be configured to control three AV devices at once. At a price below 1K, this is a must-have for any AV lover.

Price: ₹999

URL: http://dgit.in/UniRemote

Mama Atom A122-10KG Digital Weighing Scale

Weighing stuff can be a really important business at times like if you're in the jewellery or medical business and even when you're a stickler for using accurately



weighed ingredients when you make something in the kitchen. The Mama Atom A122 is a digital weighing scale which because of its size is quite portable. This weighing scale can weigh a maximum capacity of 10 Kg and is accurate to 1 g. This scale also features the useful "Tare" function and has a 1 inch digital display to show the weight of the object placed.

Price: ₹999

URL: http://dgit.in/MamaAtom

Active Feel Free Life CCTV Camera

There's an old saying that highlights far too many times that you shouldn't use a ₹500 lock to protect something



that costs ₹1,00,000. Yes, we know that securing stuff properly is costly but security is essential and should be given more thought. Thieves beware! For now anyone can afford improved a simple but efficient security solution for their home or anywhere they please thanks to the availability of low-cost CCTV cameras like this one. The Active Feel Free Life 0 channel CCTV camera features a 3.6mm fixed lens, F1.2 aperture diameter and an IR distance of 15 metres.

Price: ₹950

URL: http://dgit.in/CCTVCam

PERSONAL & OFFICE

Philips QT4001/15 Electric Trimmer



Shaving is a chore you have to go through with shaving every other day. This is why beard trimmers exist and every guy should have one. The Philips beard trimmer QT4001/15 is a cordless beard trimmer that's rechargeable and can work for 45 minutes on a full charge which is way more than enough. It also features 10 lock-in length settings a removable stubble comb attachment and a price that's reasonable enough to consider it.

Price: ₹999

URL: http://dgit.in/TrimTrim

Philips 8100/06 Hair Dryer

Apart from drying your fashionably styled locks, a hair dryer can do plenty of other stuff like help you remove stickers and price tags, remove stubborn candle wax residue, help instant dry clothes and a lot more. This hair dryer from Philips is available for cheap and is quite well made as well. Get one, you never know when you'll need it. Also, to check out some other unusual yet handy uses of a hair dryer, head to this link: http://dgit.in/HDryerUses



Price: ₹900

URL: http://dgit.in/DryDry

MXT 01 SNT90 Solar Charger

Why use power sockets on your vacation, use solar power instead. Use the MXT SNT90 solar power bank to harness the sun's energy and charge the batteries of all your portable devices. With the capability to store 5000mAh which is enough to charge most smartphones twice, this charger is quite powerful. The power bank is well built, water-proof and has a robust rubberised outer body along with a space to connect a metal carabiner for hooking up the charger on your backpack.



Price: ₹999

URL: http://dgit.in/SolarBank

Motex E-5500 Plus Tape Writer

Ever felt that everything that you own, just isn't appealing? Well, there's only one solution to all your troubles which is spelled with two words - "Tape Writer".



Yes, a tape writer is the vital tool that all of us need but never give much thought to. Of course there are costly digital label makers out there but who needs them when you can attain Sheldon Cooper's organisational skills with Motex E-5500 Plus Tape Writer that can imprint on regular tapes in different colours.

Price: ₹700

URL: http://dgit.in/TapeWriter

ASUS No.1 in Quality and Services
FAST Networking Solutions FAST · EASY · STABLE
READERS' CHOICE 2014
"One of the best routers we've tested recently & gives no reason to disappoint"
RT-AC87U Wireless-AC2400 Dual-band Gigabit Router
FASTEST SPEED. FARTHEST COVERAGE. EASY SETUP.
*Conditions Apply. All Specifications are subject to change without prior notice.
For Detailed Specifications: http://www.asus.com/in/Networking/RTAC87U | Sales Enquiries: kishore_jethe@asus.com
www.asus.in | Toll Free No. 1800-2090-365 | For Feedback Email reachus@asus.com or info_india@asus.com
3 YEARS WARRANTY
3 Years Warranty

MISCELLANEOUS

Coido 3326 Portable Tyre Inflator

Driving a vehicle and maintaining it is a big deal actually and when you're on the road, anything about the vehicle can go wrong including having to deal with an flat tyre. If you're within city limits, you can easily get it fixed but what to do



when you're somewhere remote? This is precisely why electric tyre inflators were invented. The Coido 3326 is a portable electric tyre inflator with a 12Volts air compressor that lets you effortlessly inflate tyres apart from also having a flashlight, carry handle, and a pressure gauge as well. Get one and dump it in the boot of your car, you never know when you'll need it.

Price: ₹999

URL: http://dgit.in/Coido

Spartan Drill Machine 10Mm

For those times when you just need to drill holes in your walls! Want to hang art, want to piss off locals? Whatever may be the case, a drill machine is always helpful and can be a saviour when you can't get hold of a carpenter or an electrician and drilling holes is really urgent. Move over costly machines from the likes of Bosch,



Black & Decker and more since you can easily get hold of a decent enough drilling machine for under Rs.999 now. The Spartan Drill machine comes with a box of various sized drill bits and if you're looking for a machine just for regular home use once in a while, this will work out just fine.

Price: ₹999

URL: http://dgit.in/SpartanDrill

TP-LINK TL-WR740N Wireless Router

In this digital age, it's considered crazy to not be always connected and this is why every device that we own or will own later will have some or the other way to connect to the Internet. Routers have been around for a long time now and we all love to use them. If you are in need of a basic wireless



router, look no further than the TP-LINK TL-WR740N which provides 150Mbps wireless N connectivity. Apart from being extremely easy to setup and use, the TL-WR740N has all the necessary features like WPS, WPA/WPA2, IP QoS.

Price: ₹999

Product Link: http://dgit.in/TPLink_WR

Black & Decker A7073

Everyone of us might've used or came in a contact with a screw driver at least once in our lives and we don't need to point out their usefulness. Although regular screw drivers do the job well, automatic



screw drivers decrease the effort involved and make the job quicker. The Black & Decker A7073 is an automatic cordless screwdriver that runs on 4 alkaline batteries and can be used for quick screwing or unscrewing courtesy of its forward and reverse switches. The screw driver features a spindle locking mechanism and also comes with 14 bits and batteries included as well.

Price: ₹999

URL: http://dgit.in/BlackDeckScrew

UNDER 10K

Martin Logan Mikros 70

Coming from a company that's popular for manufacturing high-quality electrostatic speakers, we were genuinely surprised with the quality of the Mikros 70 because it's their first ever hand at making IEMs. For the price,



this set offers unbeatable performance as the audio is on the brighter side and everything sounds perfectly balanced. Although some people might find the bass a bit lacking on this, but the set makes up for it by ticking all the right boxes in the other departments. We compared the Mikros 70 with the best IEMs out there and it was on par with them especially considering the fact that the other sets costed more than twice the price of this one.

Price: ₹9,700

URL: http://dgit.in/Mikros_70

Dell Venue 7

Tablets are amazing to use for certain scenarios such as browsing the web, reading books, watching video content and a lot more. Somehow, tablets with 7" screen size or form factor are easier to use and carry around as compared to the bigger ones. The Venue 7 from Dell is powered by a 1.6GHz Intel Atom Z2560 dual core processor coupled with 2GB of RAM and built-in Intel HD graphics. As its name suggests, the Venue 7 has a 7" IPS display



which has a resolution of 1280 x 800. For the price, the Venue 7 is a really good option to go for when going for a budget 7" tablet for regular use.

Price: ₹8,490

URL: http://www.flipkart.com/dell-venue-7-tablet/p/itmdsqhzjgyagxwk

Dell S2240L

This might just be a "small" 21.5" monitor, but the S2240L from Dell is among the very best monitors available in the market today. This IPS panel runs at 1080p and its colour quality is exemplary. The display is a glossy one and very reflective, which might turn some of you off, but if you take care of your room's lighting, there's a very pleasurable experience in store for you. How do we know this? We've had this monitor in our test centre for over a year and there is literally no



way that Dell can pry that monitor (and its 27" bigger brother) from our bony fingers.

Price: ₹8,499

URL: http://dgit.in/1GtukaU

TOSHIBA DT01ACA300 3TB

Space is always at a premium these days. All media is slowly going 4K, HD is already the norm, phone cameras don't shoot at anything less than a dozen megapixels and games are easily hitting the 50GB mark. One TB HDDs are just not going to cut it anymore and so, it's now time to think big. Really big. The Toshiba DT101ACA300 is a monster of a 3TB drive that runs at a full, 7200rpm, boasts of a 64MB cache and a latency of 4ms. Why this drive and not any other? ₹7,000 for a 3TB drive is an absolute steal whichever way you cut it and you'll be



hard pressed to find better value anywhere else!

Price: ₹7,363

URL: http://dgit.in/1DwswdG

D-Link DIR 868L

Speaking of space, higher resolution files means that you'll need a much higher bandwidth to be able to stream those files to and from a media centre, if you so desire. A high resolution 1080p movie will need a bandwidth of over 25MBps and 4K will only be happy with some-



thing that's closer to 100MBps. How do you get around it? By getting the DIR 868L from D-Link of course! A bandwidth of 1750MBps is quite excellent and should be enough to let you stream high-resolution content to more than a handful of devices.

Price: ₹8,300

URL: http://dgit.in/1zOIv7a

JBL Pulse

Portable speakers need not just be functional and boring. Get yourself a JBL Pulse and get some fun (and colour) back into your life! Available under 10k, this excellent little Bluetooth speaker is portable, will deliver a psychedelic light show on demand, comes bundled with a





Lithium-Ion battery that'll last you 5hrs with the light show (10 without) and can be controlled wirelessly via the JBL app. Truly, this is an all-in-one entertainment device. If 10k is too high a budget for you and you'd rather have a less colourful musical experience, get yourself the JBL Charge. It's cheaper, lasts longer and can also double as a portable charger.

Price: ₹9,499

URL: http://dgit.in/1b1wdjF

Audio Technica ATH-M50X

Audio Technica is a very well-known name among audiophiles and their M50 is the Holy Grail. Popular the world over, the M50 is often regarded as the best value-for-money studio monitor set out there. It's claimed to offer sound quality that is unmatched even by some sets that cost twice as much. But Audio Technica went a step further;



they upgraded the M50 and unleashed the M50X on the world. Audio Technica claim to have taken great pains to maintain the audio quality in the upgrade and thus, the most significant difference that you might notice is that now you get the headphones with three sets of detachable cables. Whether you get the M50X or the M50, you're in for a treat.

Price: ₹9,299

URL: http://dgit.in/1Ia77ww

Nikon AF-S DX Nikkor 35mm f/1.8G

That mouthful of a name belies a lens that's one of Nikon's best. The Nikkor 35mm f/1.8G boasts of a 35mm equivalent focal length of about 50mm, which is absolutely ideal for almost any kind of portrait photography. A wide aperture of f/1.8 means that you get a lot of depth-of-field options and can easily take your backgrounds from sharply in focus to artistically blotchy at will. Another advantage of that massive aperture is that there is that much more light coming into your



lens and thus, you can shoot at a much lower ISO, translating to lower noise and cleaner images in light that most other lenses will struggle in.

Price: ₹8,147

URL: http://dgit.in/1JFa9q0

DEALS UNDER ₹4,999

ASUS Xonar DX 7.1

For some unknown reason, most of us seem satisfied with the onboard audio from our motherboards. Unfortunately, those of us who have not seriously



considered a sound card have probably not heard the difference that even a half-decent sound card makes to the audio output. if you're a gamer or a movie enthusiast and are lucky enough to own a 5.1 or 7.1 surround sound setup, you owe it to yourself to get yourself at least the ASUS Xonar DX 7.1. It's a PCIe sound card that features a signal to noise ratio of 116dB, an output THD of >0.00056% and a frequency response of 10Hz to 48KHz. If that's not enough, the output/input full-scale voltage is 2Vrms, which is more than enough to drive even the most demanding of headphones and take your speakers to ungodly volume levels!

Price: ₹5,565

URL: http://dgit.in/1bsu7tD

Steelseries Siberia V2:

What can we say about the headset that's been a king-of-the-hill and a favourite of professional and amatuer gamers alike around the world for all these years right from its inception. The Siberia V2 oozes quality because it's really well made and designed quite nicely too. A gaming headset should provide great aural



feedback especially in games and should let you pin-point your enemy in hiding while also providing that natural feel and comfort. Steelseries' Siberia V2 performs brilliantly and if you want a good gaming headset, this is the one to go for.

Price: ₹4,999

Product Link: http://dgit.in/V2Siberia

IT'S HAMMER TIME!

Fixing your tech woes is not as hard as you might imagine. Here are a handful of quick-fixes that will give you some much needed relief without leaving much of a dent in your wallet.

By Anirudh Regidi

QUICK FIXES

Streaming Audio

We all know just how much we hate wires and all that clutter that accompanies it. But what if you could change all that and enjoy the pleasures of the analogue world with the wireless comfort of the digital one?



It's quite easy really. You just need to get yourself a Bluetooth audio streamer (around ₹1,000) and attach it to any device that you want to stream your audio to. It's that simple. Buy the device, pair it with your phone or iPod or whatever and attach it to your amp or other output device (usually via a 3.5mm jack) and stream audio to the device as you would to any other Bluetooth headset. Voila! You can now stream your music wirelessly to any corner of the house, just as long as you are within range that is.

What was that?

If you're perpetually straining to make out what your phone is trying to stream to your fancy pair of headphones, maybe it's time you got yourself a headphone amp. These amps can be as small or as large as you want, ditto the price.

If all you're really interested in is boosted volume, a simple amp that costs around ₹1,000 should be fine. It'll boost the volume and should be powerful enough to drive most headphones just shy of ridiculously high impedance sets such as the Sennheiser HD800.

It's important to note that a headphone amp is not going to dramatically improve the audio quality that's coming out of your source (in this case, let's assume that it's your phone). The amp will only boost volume, absolutely nothing else. Also remember that some amps are exceptionally powerful and if you boost the volume too high, there's a good chance that you'll damage not only your headset, but also your ear drums as well.



No audio? No problem.

It's quite common for older PCs, particularly laptops, to suffer from audio issues. Either the 3.5 mm jacks get rusted or something breaks or even a circuit might get fried. The solution, again, is quite simple. You can pick up a USB sound card for as little as ₹600 and partake of the joys of audio once again.



Spend a little more and get a good quality USB audio card for a better experience. The audio quality from these sound cards is usually way better than your motherboard's onboard audio solution and that should be enough for most users.

Let there be light

Playing games or watching movies in the middle of the night can be a strain on the eyes, especially if you play with the lights off. And what if you don't have a backlit keyboard? Get yourself a simple USB LED lamp (they're available for as little as ₹100) and a cheap USB extension cable. Or you can also pick up USB-powered LED strips and attach them to the back of your TV, which, by the way, will usually

have a USB port on the back anyway. Another quick tip, in the event of a power failure, plug that USB lamp into a portable power bank and you've got a handy-dandy emergency lamp. Sure, you can use your phone's LED as well, but now you can save it for something more useful, like playing Candy Crush.



To the cloud!

Data black out is a vaguely persistent thorn in everyone's side. You know you have to do it, but you also know that it's going to be expensive and the archiving process is going to be dreadfully dull. Well, here's a quick fix for you, get yourself a Microsoft Office 365 Home subscription. Why? You pay ₹499 a month, or a lump sum fee of ₹4,199 for the whole year and you get a licensed version of Microsoft Office (the first step to going legit) and 1TB of cloud storage each to five separate accounts. So you can have original Office installations on all of your personal computers. If that's not a steal we don't know what is.

With OneDrive, you get to access your data from anywhere, be it your phone, tablet, PC, etc. Uploading is also as easy as drag-and-drop so backing up your pictures for example, is simply a matter of dragging your pictures folder from its current location to the OneDrive folder on your PC. A quick and simple solution.

Just remember to keep illegal content away from your OneDrive folder and your data should be safe and accessible to you for as long as you're willing to pay for the subscription.

Power struggle

Fighting over USB chargers must be the norm in most households by now, what with everyone carrying multiple devices and all that. Fear not! You needn't worry about power ever again if all you do is take the trouble to pick up a few wall sockets with USB adapters. These things come dirt cheap and all you have to do is replace your regular wall socket with one of these. You get USB power without the hassle of a charger and you can place them all over the house at minimal cost.



Do remember that these USB chargers will only be as good as your electrical connection and the manufacturer so try to pick up only good quality sockets or your precious devices will be fried before you're even aware that something's not right.

INTELLIGENT IDIOT BOX

Smart TVs haven't really caught on as well as we expected, but that's also probably because smartening up a dumb TV is really as simple as purchasing a dongle. You get small and cheap Android dongles by the dozens now and all that you need to do is to plug one into your TV and suddenly you have all the power that and freedom that Android has to offer on a 60-inch screen (we charitably assume that you're that well off).

If it's only movies, videos, photos and YouTube that you want to experience on your TV however, a cheap Miracast streaming dongle or Chromecast should fit the bill perfectly. These little dongles can be had for as little as ₹2,500 and will let you stream content to your TV directly from your home.



Taking this idea a step further, you can actually attach these dongles to something like an old LCD with HDMI support for example, and place it anywhere you like. Want a larger screen in the bathroom? How about the kitchen, or the bedroom? It's a brilliantly simple solution to a problem that you didn't even know you had!

WOEFUL WIRELESS

Electronic gadgets are so much a part of our lives that they might as well be embedded into our body and at the same time, those very same gadgets without high-speed Internet access will be like you trying to breathe in an oxygen-free environment.

A good wireless setup in your house (assuming that you have an adequately fast Internet connection) will go a long way in alleviating this burden.

Routers

The simplest solution is to get yourself a decent 802.11ac router with dual band support (which should be available for under ₹5,000). 802.11ac means the newer devices will have access to high-speed wireless transfer speeds. Dual band support will



also mean that if your airwaves are overly cluttered, you'll have a higher chance of receiving a stronger signal in the 5GHz band, if your device supports it.

You can also pick up some wireless repeaters for around ₹2,000, and these should be able to amplify the source signal strength to acceptable levels, great for a large house or one with very thick walls.

802.11ac support might seem like an indulgence, but do consider the bandwidth required for the data that you consume, especially if you're running a home server. A single, high-quality 1080p movie alone will easily consume about 100MBps bandwidth and you're not going to be the only one trying to stream a movie to your device. In the long run, this makes a lot of sense, especially when you won't be able to tolerate anything below 4K, and there's really no point in taking a wireless 802.11n ready router when a wireless 802.11ac router will cost just a little bit more. Don't scrimp on the things that matter, or will matter for that matter.

Sharing on-the-go

We've all had hell with Hotel Wi-Fi and Internet at some time or the other. Why should you pay extra for wireless Internet access when the wired version is free? Simply purchase a portable Wi-Fi router (costing anything between ₹1,500-₹3,000) and you're set. Plug the Ethernet cable into the device and set it up right and you will now have Wi-Fi access.



Adapt

It's frustrating to have to use a dedicated digital camera at times, if only because it lacks that convenience of instantly sharing your images and videos on social media or wherever else. Free yourself from the shackles of the laptop and endless supply of SD cards and adapters and get yourself an SD card streamer and/or a Wi-Fi ready SD card.



Either of these devices will stream data from your camera's SD card directly to your phone or tablet, leaving you to partake of the comforts of a wireless world.

Also, you'll never run out of space at the last moment simply because you can use your own phone/tablet as a backup device.

You also do get portable HDDs with SD card readers, USB otg cables, etc. All these are also viable alternatives of course, but there's something far more convenient about a purely wireless world.

LAPTOP AND DESKTOP FIXES

Upgrade your RAM

If you find your PC to be stuttering a lot or your browser crashes regularly, it's highly probable that your system is running out of RAM. This shouldn't be a problem on systems with a bare minimum of 4GB of RAM and if you have such issues, it's indicative of a deeper problem.

A 4GB RAM stick will set you back by only about ₹2,000-4,000 depending on the type of RAM that you'll need, but the improvement in performance will be quite significant.

A word of caution though, ensure that you're taking a RAM module that's compatible with your motherboard and if you want to pair up your old module with the new one, try to get a module with identical specs because otherwise, both modules will function at the speed of the slowest one.

You need, at a minimum, to keep the following in mind:

- **Operating voltage:** This varies from 1.35V to 1.65V so check your motherboard/laptop manual.
- **Operating speed:** This is the speed at which your RAM operates. The most common frequencies are 1333-1600 MHz, though you can get modules that go to 2400 MHz and beyond.



Faster RAM is always better, but for a low-end system, quantity will matter more. Check your motherboard or laptop manual for supported speeds and also, the sticker on your existing RAM module, which should have all the specs.

- **Timing:** Again, Google the numbers printed on the sticker attached to your existing memory module to know the exact timing. This is another important factor that will determine your RAM module's performance. It's usually designated by a set of numbers like 999-12 or CL9, etc. The exact style will depend on your RAM module, so if you don't know what you're doing, cross-check with someone who does or research a little on your own.

Get an SSD

An SSD might sound like a really expensive indulgence, but prices have steadily declined over the years and you can get a 128 GB drive for under ₹5,000 very easily.



Why would you want an SSD? For one thing, the response time will improve dramatically, especially if you dedicate your SSD as an OS drive (i.e. the drive on which you've installed your primary OS). An SSD has a response time that is at least 15-20 times greater than that of your HDD and the difference in startup times and responsiveness of programs installed on the SSD will be noticeable.

If you're a laptop user, you should also see a definite improvement to your battery life and as a bonus, you can rest assured that your data is more secure because an SSD is not as fragile as a HDD. The improvement to transfer rates is also an added bonus.

Heating issues

Laptops and Desktops tend to overheat if you've not bothered to take care of your airflow or your heatsinks are covered in dust and gunk. Here's what you can do to fix that.

Get a new CPU cooler for your PC. A decent one will set you back by about ₹2,000, but you should see a dramatic reduction in operating temperature, sometimes by as much as 40 degrees. Your PC will operate cooler and faster for longer, and also help the longevity (in the long run).

Simple 120mm fans don't cost anything. Buy a handful from your local hardware store and intelligently place



them in your PC to improve airflow. Remember, the placement of the fans is very important and you have to plan with airflow in mind.

For laptops, the best thing to do is to get yourself a decent laptop cooler. It will add some bulk to your bag, but the improvements in cooling should directly translate to better performance and less stress on the components.

REVELING IN THE PAST

It's a little rarer now, but there are sure to be a great many of you who've still got an ageing collection of precious VHS tapes and LP records. It's high-time that you moved into the digital world, if only for archiving all that precious data.

You could take the easier, but more expensive route of paying for a professional service that will digitize and archive that collection for you. Or, you could do it yourself.



You will, of course, need a large enough HDD to store all that data and a PC. You can then purchase a cheap, USB capture device that will accept the RCA, S-Video and any other vintage input that your player might use and directly stream that data to your PC for easy recording and capture. This works for cassette tapes too.

DEALS UNDER ₹200

LED Lamp (₹185): You can get USB LED lamps for as little as ₹99 and they're an excellent little tool with a great many applications. You can use them to light up your keyboard be it on a desktop or a laptop, use it as an emergency lamp and more. http://dgit.in/1HCFPzV

4-Port USB Hub (₹179): This is a brilliant little device to have. A 4-port USB hub with switches to control each individual port. It's a nice accessory to have in your backpack. http://dgit.in/1QsPdJ1

GIVE THE LITTLE ONES A CHANCE

Get yourself a Raspberry Pi or an Arduino; these are in effect, tiny little computers that'll set you back by about ₹3,000, but can be a one-stop-shop for quite a lot of issues you never knew of.



- **Torrent box:** Torrenting is second nature to us and almost all our bandwidth requirements are defined by this need. Load up a Linux OS of your choice, install a torrent client like Transmission and configure the Pi and/or transmission for remote access and you've got a tiny little device that only sips electricity and works as a torrent box!
- **Media Centre:** A Raspberry Pi in particular can make for a great media centre or media server. Coupled with automated torrenting, it's possible to setup a Pi to stream your media to your TV or any other device you choose.
- **Misc**: Enterprising users have gone on to automate just about any task they could think off with these devices. These include cat feeders, home security cameras, web servers, FM radio transmitters, and thousands more.

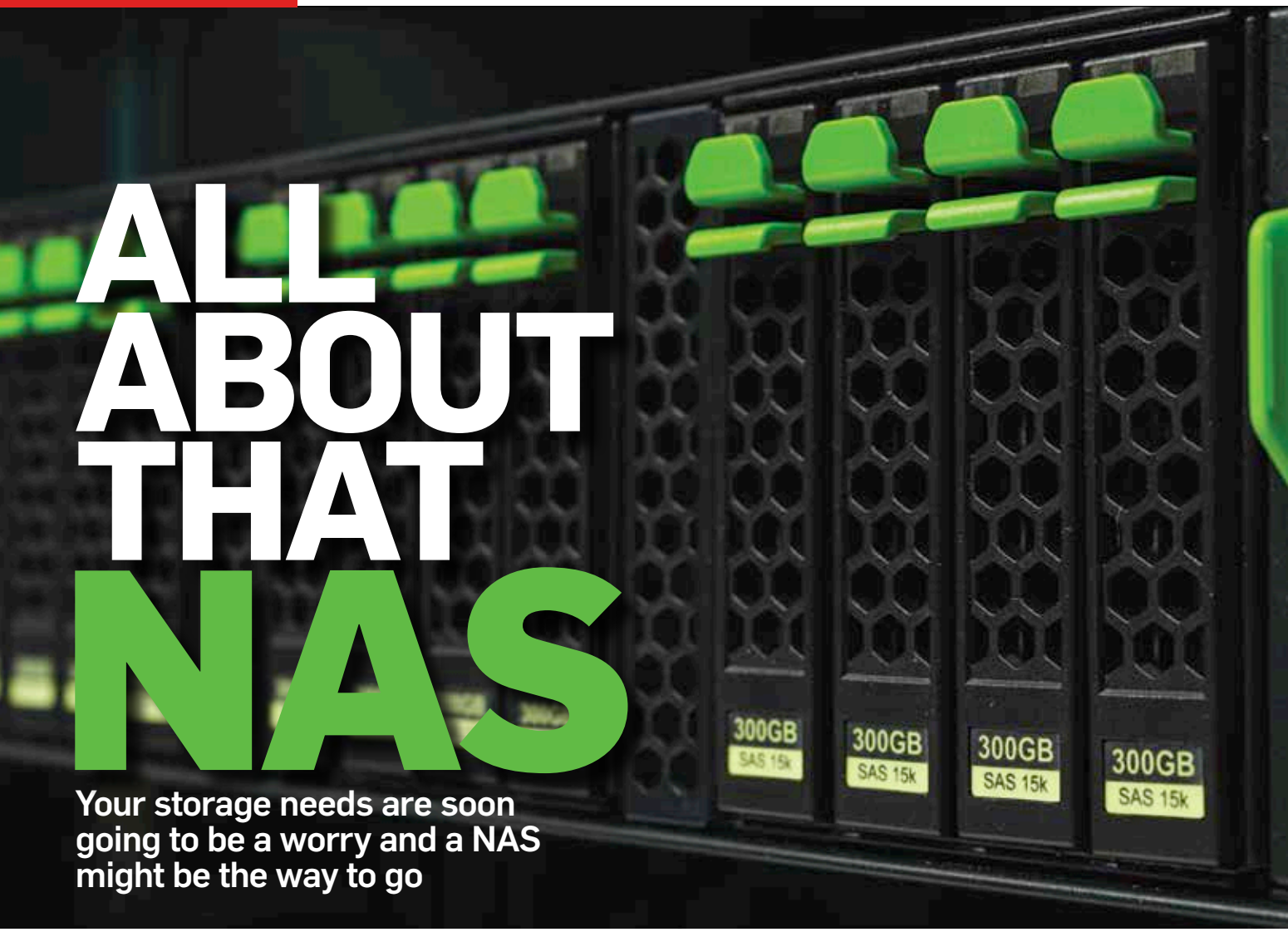
88

Bazaar
This month we have quite a few heavy duty PC components. Enjoy!



7,800mAh power bank
Quantum-Hi Tech has brought a huge 7,800mAh power bank at just Rs. 1,490, with 6 months warranty.

ALL ABOUT THAT NAS



Your storage needs are soon going to be a worry and a NAS might be the way to go

Mithun Mohandas
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There was a time when we thought Google was absolutely nuts for offering Gmail with a gigabyte of space. Moreover, there was a ticker right in your inbox that kept on increasing. So you'd never have to worry about deleting emails, ever! A decade has nearly passed since then and there are plenty of us who worry about overflowing inboxes. We started branching out and opting for multiple services - Flickr for photos, YouTube for videos, Dropbox for miscellaneous files etc. Like a meerkat you're ever on the lookout for every opportunity that could end up adding a few GBs to your online storage capacity. It wasn't long before enterprise storage solutions like NAS came to mind. Well, they aren't enterprise anymore.

If you're a little techsavvy then you can put together your own NAS using an old computer and FreeNAS but for everyone else there are plenty of off-the-shelf NAS devices available on the market. We'd have preferred to get a lot more than four devices for this test, unfortunately, this is all that we could gather in a short time. Hopefully, more NAS devices will come our way in the future.

FOR THE FIRST TIMER

Every single NAS device out there supports basic tasks like having multiple user accounts/groups, auto backup of folders periodically and support multiple filesystems. Budget friendly NAS devices have a CLI (Command Line Interface) but dropping a little extra cash will give you a GUI (Graphical User Interface) which is more suited for the average guy who has been using Windows, OS X or one of Linux's more popular desktop environments.

The next important thing to keep in mind is that your network configuration goes a long way into making the most out of your NAS device, investing heavily in one while ignoring the other wouldn't be prudent. NAS devices do a lot more than storage these days and more and more manufacturers are offering downloadable packages that extend the functionality of your device. So you could have a simple file sharing setup or you can host an entire website on your NAS. Configuring your NAS to be a web, media, print

Fun Fact
It took the radio 38 years, & the television a short 13 years, it took the World Wide Web only 4 years to reach 50 million.



Exoplanet shining
At 50 light years away, visible light from an exoplanet, 51 Pegasi b has been detected for the first time
http://dgit.in/ExoLight



NETGEAR RN104

or FTP server is accomplished with just a few clicks. However, this level of simplicity does come at a price. It isn't unreasonable to expect NAS devices with flexible functionalities to be priced in the high 30s to the mid 40s.

Most devices do have low-power consuming hardware which work just fine for tasks generally seen in a SOHO environment. These are generally equipped with Celeron/Atom processors and quite a lot of them even have SoCs designed specifically for NAS devices. And almost all of them now have Gigabit Ethernet connectivity with higher models having more than one ethernet port. Add to that support for link aggregation and you're pretty much worry-free when it comes to bandwidth. The average household doesn't have multiple machines running RAID setups so hitting the bandwidth cap is a notion that most of us need not entertain. Memory matters for file transfers and helps when you are running a lot of processes on the NAS. Most manufacturers do provide enough RAM based on what all features the NAS has to offer, and the ones that have a lot of apps to offer can be upgraded since these use SO-DIMMs for most models.

Most NAS devices come with USB ports with which you can take a one button backup. It's a convenient feature, however, if case your NAS comes with just one USB port and you need to make use of the UPS link functionality then you might have to forgo either the UPS or the backup functionality or get a USB hub. USB 3.0 ports are a much desired option and if you do get USB 3.0 you need not worry about other interfaces since the bandwidth provided by USB 3.0 is at par with what older protocols like eSATA and Firewire could provide.

If you're looking towards getting a NAS and all of the above are the same between two models and you just can't seem to make up your mind then you might want to look at the file system. Generally, you'd just see EXT4 but there are instances where you might end up with a NAS that supports Btrfs. Pronounced as 'Butter FS', 'Better FS', 'B-Tree FS' or simply as 'Butterface', this new file system has been coded from scratch and adds features that were found to be lacking in EXT4. One of the most talked of feature is that a lot of operations can be performed on this filesystem without unmounting the drive. So increasing and decreasing volumes and defragmenting can be performed while the drive is online. Future updates even include support for encryption and online verification of the file system. If you've used FreeNAS and found ZFS to be optimal then Btrfs aims to achieve a similar feature set.

One last point that we'd like to elaborate upon is that these devices are all running on very low powered processors and are specialised for home / SOHO environments. So expecting performance akin to an enterprise file server is unrealistic. They are primarily suited for storing documents, photos and media files and the specifications of the SoCs used in these devices reflect the same. These are just some of the things that you need to bother with when deciding over a NAS device. Let's take a look at the contenders we have for the test with regards to how well they're built.

BUILD QUALITY
SYNOLOGY DS214PLAY

The Synology DS214play at first glance seems a little deceiving. It's exterior is made out of plastic but once you pick it up and have a peak inside you start to see how well it is put together. The glossy front panel is held in place by four rubber disks which lock into the crevices between the drive bays which are in turn kept in place by two locking tabs at the top. So there is no worrying about the bays coming out when you pull the cover off. The front also has an SD card slot right next a USB 2.0 port. Both can be used with the one-button backup feature. Lastly, there are LED indicators on the front. The sides are emblazoned with the Synology logo and a closer inspection reveals that the engraving have ventilation slits. Air is channelled into the device from the rear via a 90mm fan which run quite smoothly and makes no noise. Underneath the fan you find two USB



Thecus N2310



First and oldest
The very first and the oldest domain name to be registered was www.symbolics.com, on the 15th March, 1985.

Who came first?
Scientists finally concluded that the chicken came first, not the egg, because the protein which makes egg shells is only produced by hens.

HOW WE TESTED

Since these were NAS devices made for home use and SOHO environments it didn't make sense to set up an array of 20-40 clients in virtual machines bombarding the device simultaneously. The average usage scenario for these devices would involve 1-2 clients performing a high intensity data transfer process at any given time. So with this in mind we went with the following process.

Setup

Some of the NAS devices did come pre-loaded with the operating system installed on a set of hard drives. We updated the OS to the latest version and had a look at the features for tabulation. Each NAS device was interfaced with a router which was then connected to a client testing computer. The network links were ensured to be regular from the NAS device to the client computer. CAT 6 cables were used and the router which acted as the intermediary was also Gigabit capable.

For the performance test, only one volume was created on each NAS device. We went with RAID 0 to maximise performance. In a work environment, RAID 1 or RAID 5 would be preferred for data protection but we weren't bothered with data protection in this scenario. After creating the volume we went on with disabling any features that would hamper performance, for example, most devices have the ability to spin down the hard drives when they are not in use. This would've drastically affected seek times and subsequently performance metrics.

NASPT

Intel's NAS Performance Toolkit is a well rounded benchmark for NAS devices since it makes use of traces that were generated from real world operations. These mimic conditions and operations that are most likely to have occurred over time with NAS devices. There are traces that emulate the following

- Copying files to the NAS
- Copying files from the NAS
- Copying directories to the NAS
- Copying directories from the NAS
- Content creation involving multiple content sources across multiple file types
- Office productivity simulated using applications handling spreadsheets, documents, etc
- HD video playback simulated using single playback, 2x playback of the same video, 4x playback of the same video, playback and recording, single file recording etc.
- Photo album browser test which has multiple image files being accessed from a large and deep directory structure

These tests were run over and over again and the average transfer rates are recorded.

Backup Feature

Since each NAS has its own backup feature we plug in a USB 3.0 drive to test the data transfer rates during a backup operation.

Media Playback

We run multiple instances of high bit-rate video files and we look at the seek times and if the client has to buffer. This test is performed over a wired connection.

Finally all products were scored on the basis of all scores recorded across four different heads – performance, features, value for money and build quality.

3.0 ports, an eSATA port, the Gigabit Ethernet port and a Kensington lock slot. The interior drive cage is made of metal but the bay trays are plastic. The trays have clamps on the sides to prevent the hard drive from accidentally popping out when being serviced.

THECUS N2310/ N4310

The N2310 and the N4310 look quite similar from the front. The placement of all the components are the same but one crucial thing that is lacking is that there is no USB port on the front of the devices. Both have support for one-button backup and two USB 3.0 ports but the ports are on the rear and the button is on the front. This is a minor inconvenience for those who'd have to make use of this particular feature regularly. The drive trays are spring loaded but there are no clamps to hold the drives onto the trays. There are small projections on the bottom of each tray which slot into the screw holes on hard drives and this prevents the drives from sliding on the tray. The N4310 has a 90mm fan while the N2310 has to make do with a 60mm fan. Both devices have vents on the front of the drive trays and the N4310 has one wide vent on the chassis itself.

The chassis of the N2310 is primarily plastic, even the Kensington slot is seated in the plastic body while the N4310 opts for metal on the sides and the rear. Both devices make use of power connectors which look similar to the ones used with laptops. We can see why Thecus has decided to vary the two devices so vastly, the N4310 costs ₹32,456 which is a little over twice at which the N2310 is priced at.

NETGEAR RN104

NETGEAR's RN104 carries a price tag of ₹32,500 but you can get it from about ₹18,755 at multiple online retailers. It may be priced way lesser than the Synology but when it comes to build quality, the RN104 has a much sturdier build. Aside from the front panel, everything else is made of metal. The rear even has a handle to grab onto and even without drives installed, this NAS unit is quite heavy so the handle is a nice touch. A 90mm fan on the rear is what drives cool air into the device which exits via vents that are situated towards the front of the device on the sides and the top. Being



Thecus N4310



Apple's secret facility
Head over to the link below for a glimpse of Apple's secret Apple Watch fitness lab
http://dgit.in/AppleSmartFac



Your life was a lie
The English word for red panda is 'Firefox' where the browser gets its name from. The Firefox logo is actually a red panda, not a fox!

	BEST PERFORMER digit MAY 2015	EDITOR'S PICK digit MAY 2015	BEST BUY digit MAY 2015	
Brand	**Synology**	**Netgear**	**Thecus**	**Thecus**
Model	DS214play	RN104	N2310	N4310
Price (₹)	44,000	32,500	15,400	32,456
Performance	90.00	47.32	66.01	70.27
Value for money	37.88	41.67	90.00	49.15
Build quality	71.47	90.00	63.53	79.41
Warranty	2 Years	3 Years	2 Years	2 Years
Specifications				
Processor	Intel Atom CE5335	Marvell Armada 370	AMCC APM 86491	AMCC APM86491RDK
Freq	1.6 GHz	1.2 GHz	800 MHz	1 GHz
Cores	2	1	1	1
RAM	1 GB DDR3	512 MB DDR3	512 MB DDR3	1 GB DDR3
HDD Bays	2	4	2	4
Max. Capacity (TB)	16	16	12	24
Hot Swap	Y	Y	Y	Y
SSD Support	Y	Y	Y	Y
SSD TRIM Support	Y	NA	NA	NA
N/W Ports (GbE)	1	2	1	1
Link Aggregation	NA	Y	NA	NA
USB 3.0 (Front/Rear)	0/2	0/2	0/1	0/2
USB 2.0 (Front/Rear)	1/0	1/0	0/1	0/0
Card Reader	SD	NA	NA	NA
eSATA	1	1	NA	NA
Cooling Fans	1x 92 mm	1x 92 mm	1x 60 mm	1x 92 mm
Features				
Internal File System	EXT4	Btrfs	EXT4	EXT4
File Systems for USB	EXT4/EXT3/FAT32/ NTFS/HFS+	EXT4/EXT3/FAT32/ NTFS/HFS+	EXT4/EXT3/ FAT32/NTFS	EXT4/EXT3/FAT32/ NTFS
One Button Backup	Y	Y	Y	Y
UPS Support	Y	Y	Y	Y
Firewall	Y	Y	N	N
Antivirus	Y	Y	Y	Y
No. of Apps available	75	49	69	69
Performance				
HD Video Playback (MB/s)	86.8	39.1	86.8	90.3
4x HD Playback (MB/s)	92.8	38.5	109.3	106.2
HD Video Record (MB/s)	1047.2	1189.2	103.4	163
HD Playback and Record (MB/s)	90.5	32.7	75.3	80.9
Content Creation (MB/s)	12.4	4.5	6	7.6
Office Productivity (MB/s)	58.4	46.8	53.3	56.3
File Copy to NAS (MB/s)	1475	1001.7	577.7	714.6
File Copy from NAS (MB/s)	76.4	34	71.1	76.8
Dir Copy to NAS (MB/s)	22.1	3.3	9.6	9.9
Dir Copy from NAS (MB/s)	26	12.2	20.1	19.8

a 4-bay NAS this device needs all the cooling it can get and the entire chassis being made of metal acts as one huge heat sink. Another benefit of being a 4-bay device is that it has an LCD display on the front which isn't hidden if you close the front cover. Right above the cover you can find all the LED indicators along with a USB port and the backup button. Moreover, the RN104 has two Gigabit Ethernet ports that can be aggregated to increase the bandwidth and it's the only device in our test to have link aggregation.

The power connector uses a latch mechanism so you won't see the power cord flying off if tugged at. All the drive trays are made of metal with plastic clamps to keep the drives in place. And if that wasn't enough then each drive bay has a slide lock aside from the normal snapping mechanism. Even the Kensington lock slot is situated on a metal sheet on the rear. NETGEAR has definitely put a lot of thought into the construction of the device to come up with one of the most well built NAS devices we've seen for the price.

USER INTERFACE

Since these devices are targeted towards home and SOHO users, it is essential that the UI be as simple as possible. Not every household has someone fluent with networking terminology and protocols are on an entirely different plane altogether. Paying a little extra can mean the difference between staring at a CLI (Command Line Interface) or getting to work with a GUI that seems the same as the OS that you've been using your entire life.

SYNOLOGY DS214PLAY

Synology's Disk Station Manager is one of the most well

designed user interfaces that we've come across. There are upteen number of options for the user to fiddle with and there are explanations listed for each option. Moreover, the interface guides the user through processes. For example, let's say you wish to create a new share folder then the almost all devices will produce an error message but few will actually open up the folder creation panel in the control panel and let you know that this is how you go about a process and this is where you start from. However, Synology's lineup is comparatively expensive which explains the amount of effort expended in the UI.

With about 75 apps available for the DSM, Synology is quite the versatile NAS device. Setting up

THECUS N2310/ N4310

Both the N2310 and the N4310 are more budget friendly models. This doesn't mean that they don't offer good performance. We'll get to the performance bit later. The interface looks exactly the same with the only difference being the missing icons for features that are present in the N4310 and not on the N2310. Compared to the N2310 the N4310 has nine extra features. The overly simplistic interface works just fine but the lack of helpful explanations for different configuration settings might make configuring these units a daunting task. What makes things a little more irksome is that the support forums hardly show any activity with certain sections having no moderators at all. So if you do run into problems that can't be found on the forums then talking to support is the only way to go. The good thing about their products are the sheer number of third party applications available. Out of a portfolio of 720 apps these two models support 69 each at the time of writing this article. One caveat is that you can't install all of these apps from the UI, rather you have to go to Thecus' website to get the third-party apps, and third party apps form the majority of their portfolio.

NETGEAR RN104

NETGEAR's user interface is quite similar to Synology's. It is quite simple to follow and is akin to an HTML page rather than the OS-like interface that Synology has. The overly simplistic interface can end up being a little too simple. So a power user might actually feel that the device is lacking but power users can always SSH into it to get more control. However, NETGEAR mentions explicitly that enabling root over SSH can be used as a reason to deny the user technical support. Like the other two brands, even NETGEAR makes available a well rounded portfolio of apps for you to extend the functionality of the NAS and you can install these apps straight from the UI itself.

WINNERS
BEST PERFORMER

We chose RAID 0 in order to maximise the performance scores across the board and in our tests Synology's DS214play took the lead despite being a 2-bay NAS. This is why it wins the Best Performer Award in our test. It comes with a high price tag but going by what we've seen, it sure does give you your money's worth. It was followed by Thecus' N4310, N2310 and NETGEAR's RN104 came last. The DS214play was consistent in performance throughout the test, only NETGEAR's RN104 could trump it in one of the 14 tests. In fact, the RN104 scored quite high when data was being written to it. The drop in performance can be attributed to the SoC which didn't match up to the offerings from Intel and AMCC.

Thecus' N4310 did certainly perform consistently and scored higher than it's li'l sibling, however, this can be attributed to the extra two HDDs being in RAID 0. The N2310 isn't great but it isn't bad either. It was behind by only a few points and it costs less than half of when compared to the N4310. Keeping that in mind, it's a pretty good choice overall.



Synology DS214play

BEST BUY

When considering products for the best buy award we look at every single parameter and it is then weighed against the price tag. Since this test deals with storage devices, the net capacity on offer was weighed heavily in our final score. Needless to say, often the cheapest device on offer ends up bagging this award. Thecus' N2310 may have a bland interface but it has a feature set similar to the N4310 and even its performance scores were closeby. Moreover, the fact that a device priced at ₹15,400 offers a capacity of 12TB led it to winning the Best Buy Award.

EDITOR'S PICK

For our Editor's Pick Award, we went with NETGEAR's RN104. While it might not have scored high in performance, it wasn't bad either. For a SOHO / home environment, this device not only provides a large storage pool but it also remarkably simple to setup. It was the only device to offer dual GbE ports with link aggregation. And need we go over its excellent build quality again? Having a massive feature set just doesn't cut it, ensuring that the average guy can easily make the most of those features is also crucial and NETGEAR's polished interface does just that. Then there is the fact that they offer a 3-year warranty program gives the RN104 an edge over its competitors.

Granted than we didn't have a lot of products in this comparison test, we did get some much needed insight into a product category that's on the rise. We'd like to hear your thoughts on the same and you can write in to us at editor@digit.in

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

10 to 30	**Extremely poor product.** Keep away!
31 to 50	**Strictly OK.** Not recommended
51 to 70	**Decent product.** Go for it, but there may be better products out there.
71 to 90	**Very good product.** Highly recommended.
91 to 100	**Ground-breaking product.** We've never seen anything like it before. A definite must buy!



INSIDE


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ASUS PB279Q


▲ Page **95**
Xiaomi Mi Pad


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Google Nexus 6

& MORE...

INTERACTIVE REVIEWS INSIDE!
KEEP AN EYE OUT FOR THE BLIPPAR ICON





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Free HTC Vive
As promised, HTC and Valve are going to distribute free HTC Vive headsets, only if you're a convincing developer **http://dgit.in/HTCViveDev**



Fun Fact
According to scientists, in around 5 billion years, a day on Earth will be 48 hours long and somewhere during that time the Sun will explode.

Motorola Moto Turbo

Say hello to the "beast"

We, especially us geeks, have been waiting for this phone for a long time. We've read everything there is to read about it and watched every video that the Internet has to offer. There's hardly a bad word that anyone's said about it. So will we?

Take a brief look at the smartphone market and you'll find two words that dominate — metal and thin. These are also two words that Motorola has stayed away from, intentionally if we may say so. The Turbo is not a slim phone and at 169 grams, it's not light either. Now we don't know about you, but we would readily trade both of these for better battery life. Let's face it, making phones slim as paper is no good if you can't deliver performance and battery life.



Interactive review

Price ₹41,999

The Turbo is 8.3 mm thick, but despite weighing 169 grams on paper, it feels lighter than what we expected. This is because of how well it fits in your hand. Motorola's slightly curved back takes the shape of your hand and makes the phone fit right in, overruling both the thickness and lightness quotients.

It's not a design that looks very good, it's a design that's practical, fresh and just simply works.

At 5.2-inch, a 2K display doesn't make much difference. In fact, we found the Turbo's display to be somewhat dimmer than many others in its category. The Honor 6 Plus, which we had alongside this, has a much brighter display.

You won't be complaining though. A pixel density of 565 ppi makes this one of the sharpest displays you can find today and the 5.2-inch display coupled with Motorola's design language makes for a compact beast in a world of phablets. It was a nightmare to use the Nexus 6 after this.

There's a reason they call this phone the beast. The Moto Turbo performs better than any phone we've tested in terms of benchmarks and this translates to the real word as well. As hard as we tried, we couldn't get this phone to stutter even once. The only time it did so was when the 3G speeds dropped while playing Marvel: Contest of Champions (the game is heavily dependent on data).

Having used the Turbo and Nexus 6 side-by-side, it seems like the Turbo is a smaller version of the Nexus in terms of performance. It's just more compact, while performing at the same level, sometimes even better.

The performance that the Turbo gives is better than the Note 4 and closer to the iPhone than perhaps any other Android phone has achieved, except the Galaxy S6.

I'm not talking about just the benchmarks scores here. Android Lollipop takes a lot of cues from Apple's iOS, but the fragmentation in Android results in lack of fluidity in the UI, unlike iPhones. The Turbo achieves this fluidity to a higher degree than any other smartphone.

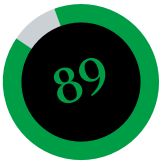
If there's one area where the Turbo is weak, its the battery. While Motorola has got the spec sheet covered, with a 20.7 MP camera, this isn't anywhere close to what you can get in Sony or Samsung's devices. The Moto Turbo's camera is the best amongst Motorola devices right now, but it can't provide the white balance and sharpness that the Xperia Z3 and Galaxy Note 4 are capable of. Also, low-light capabilities aren't anywhere close to the Z3 or the Note 3.

What surprised us the most about the Moto Turbo was the battery life. The kind of performance it delivers is usually achieved by compromising on battery life. That's where the trade-off in the build pays off. The Turbo's 3900 mAh battery excels like no other. With over two hours of gaming, more than three hours of music streaming and then browsing, calls, texts, social networking etc, the Moto Turbo lasted for a good 21 hours.

If the phone can do this with a QHD display, then a 1080p would perhaps have made it run for over two days. And the testing conditions that we mentioned above isn't regular usage, it is very heavy usage, but the Turbo handled it like a boss. On regular usage, you can easily get a day and a half out of this device.

Here's who should buy a Moto Turbo. If you want a battery or a performance beast, then this is the best that you can get today. On the other hand, if a good camera matters to you, then you would be better off with something else.

Prasid Banerjee



Features 94
Performance 90
Design 86
Value 98

Specifications

Display: 5.2-inch QHD; **Processor:** 2.5 GHz Qualcomm Snapdragon 801 quad-core; **RAM:** 3 GB; **Battery:** 3900 mAh; **Operating System:** Android 5.0; **Camera:** 20.7MP rear, 2MP front

Contact

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10,000 year old rhino
While out boating, two hunters in Siberia found a frozen body of a 10,000 year old baby woolly rhino **http://dgit.in/FroznBabyRhin**



Bad mistake
The World's oldest known creature, a mollusc, was 507 years old when scientists killed it by mistake.

Noctua NH-D9L

Small foot-print, decent performance



Price ₹4,050 (Approx.)

We get plenty of questions about small form-factor PCs using Micro-ATX or Mini-ITX motherboards and it seems like more people are opting for them these days. The NH-D9L is the latest 95 mm cooler from Noctua and like most of their other coolers, this one means business and is aimed at small form-factor system builders. There is a wealth of boxed accessories bundled with the NH-D9L including a tube of Noctua's popular NT-H1 thermal paste, low-noise adapters for the fan, a good quality screw driver and extra fan-mount clips. The cooler follows a twin-tower design approach with the fan residing between both towers.



Features 88
Build Quality 90
Performance 65
Value for money 50

Specifications

CPU Support: Intel Socket LGA 2011/1366/1156/1155/1150 AMD Socket FM1/FM2/ FM2+/AM3+/ AM3/AM2+/AM2; **Dimensions:** 110(H) x 95(D) x 95(W) mm; **Weight:** 531 grams; **Base:** Copper (Nickel plated); **Fan Speed:** 2000 RPM (+/-10%)

Contact

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As for the heatsink, it has four heat pipes which running through the nickel-plated copper base, which in turn has a mirror finish for better contact. Installation on our test system was fairly easy and we got it done quite quickly. Right off the bat, we noticed that the cooler was absolutely inaudible outside a closed case that too without using the low-noise adapters. We slightly underestimated its performance owing to its size and were pleasantly surprised that it was able to maintain a stable 62.5 degrees Celsius under full CPU load and 34 degrees Celsius when idle. Although it doesn't provide much overclocking headroom, we went ahead and strapped a second Noctua NF-A9 fan and noticed a slight drop of 1.5~2 degrees Celsius. All in all, this is a well packaged CPU cooler that looks dandy, can fit in a 3U chassis and performs good enough for a 95 mm cooler. But its brother – the NH-U9S performs better by a small margin and so it makes more sense to invest in the NH-U9S. But the NH-D9L isn't a bad option either.

Siddhant Sharma

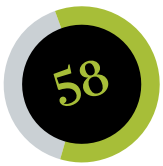
ASUS O!Play Mini V2

A member of a dying breed



Price ₹4,100 (+Tax)

Media players have come a long way in recent years, multi-format compatibility is not as big a concern as it used to be and extravagant setups are becoming more and more commonplace. And onto this scenario a host of newer devices has appeared, most of which are very economical so coming up with a competitive solution in this space is a very challenging task.



Features 50
Build 65

Specifications

Media Processor: RTL1185DD, **USB Ports:** 1x USB 2.0, 4-in-1 Card Reader, Remote Control included, Composite Audio/Video output, HDMI 1.3 with CEC, **Dimensions (WxDxH):** 152 x 107 x 29 mm.

Contact

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Website: www.asus.in

The O!Play Mini V2, as its name suggests is a refresh with a few additions/improvements. On the outside there seems to be absolutely nothing new with the device, however, on opening up the device we did notice a few changes. Notably, the O!Play Mini V2 now has the RTD1185DD media processor while the original O!Play Mini came with the RTD1055DD. The key difference with the newer media processor is that it supports more encode formats and streaming via Ethernet and WiFi. However, ASUS has not implemented the streaming features on the O!Play Mini V2. Both media processors are clocked at 500MHz so it's unlikely that compute performance would be different when they are pitted against each other.

Build quality wise the two are at pretty much the same level so the question arises as to why would anyone buy branded media players in the budget segment anymore? After all, TVs are smart anyways and alternatives like the Raspberry Pi can do a much better job with minimal effort.

Mithun Mohandas



Head banging
Every time a woodpecker's beak hits a tree, its head is subject to 1,000 times the force of gravity.



How about walking?
There is more CO2 (carbon dioxide) in the atmosphere today than at any point in the last 800,000 years.

NVIDIA GeForce GTX TITAN X

NVIDIA's latest and Maxwell's greatest has finally arrived

The Geforce GTX TITAN X is part of the elite TITAN family. For those who're looking at a TITAN for the first time, these cards make the most of each generation of NVIDIA's graphics architecture. The TITAN X is the fourth card after the TITAN, TITAN Black and the TITAN Z. The key difference is that the previous three cards were all based off the NVIDIA Kepler architecture while the TITAN X is based on Maxwell. And those who were hoping for the Maxwell pricing strategy to continue will be disappointed to know that the TITAN X was launched for $999 which is what NVIDIA flagships were priced at till the Kepler architecture was ruling the roost.



What's new?

We first heard of the TITAN X back when it was showcased at GDC a few months back. The specifications weren't revealed back then but there were rumours of the card sporting a massive chunk of RAM and surely enough, the TITAN X does have 12GB of VRAM.

Like every TITAN that has come before it, the TITAN X is the most that you can expect from the Maxwell architecture. There are rumours of a 980 Ti but it'll be slotted somewhere between the GTX 980 and the TITAN X. Looking at the specifications, we can see that the TITAN X has 8GB VRAM in excess of the 980. But at the core, it has 8 SMs more which translates to 1024 CUDA cores, 64 TMUs and 32 ROPs. Essentially, the TITAN X has 50 per cent more resources than the GTX 980 which is quite promising since 50 per cent more resources should provide a massive boost in performance.

Also, the stock card that we tested was clocked at 1000 MHz and the VRAM was clocked at 1753 MHz. The base clock is a step down from the GTX 980 but way higher than its predecessor, i.e. the TITAN. However, the extra resources will more than make up for it. The memory clock may be the same as that of the GTX 980 but the TITAN X now has a 384-bit bus width that will provide the much needed head room to access all of the 12GB that comes with this new GPU. With such increased processing power, one can also expect a bump when it comes to the TDP and rightly so, the TITAN X is rated at 250W which is the same as the TITAN Z and the TITAN.

The previous members of the TITAN family also focussed on compute performance but the TITAN X seems to have its focus down to gaming performance only. The extra SMs do produce an increment in compute performance but it's nowhere close to the bump that the original TITAN generated compared to the GTX 780. So when you are looking for compute/price then the TITAN takes the back seat compared to the R9 295X2.

Build

Other than the all black look there seems to be virtually no difference at all so we really can't say any more for the TITAN X than what was said for the TITAN and the GTX 980. The black-plate we saw on the GTX 980 is no more. It has two power connectors (8-pin + 6-pin) and support for 4-way SLI. The external dimensions remain the same. Even the cooling setup is the exact same, so basically NVIDIA has let the design be as it was.

Performance

We ran the benchmarks on Full HD, 2K and 4K resolution and repeated the entire process after overclocking the card. An increment of 236MHz over stock was what we managed to achieve on air cooling and the results were pretty great. At stock the card showed a 20 per cent improvement in FPS scores for Bioshock when compared to the GTX 980. This massive bump was indeed a sight for sore eyes given the dismal improvement that Maxwell brought to the table with the 960, 970 and the 980. For example, Bioshock Infinite ran at 124 FPS on the GTX 980 and 149 FPS on the TITAN X. After overclocking, this rose to 160 FPS. The increment was seen across the board with all other games as well.

On the other hand, compute performance showed an increment of 29.5 per cent increment in LuxMark. Whatever, they've done with this card, we'd like to see more of it.

Mithun Mohandas



Performance..... 80
Value 75
Build 60

Specifications

Chipset: GM200; **Base clock:** 1000 MHz; **Memory clock:** 1753 MHz; **Stream processors:** 3072; **Texture Units:** 192; **ROPs:** 96; **Manufacturing process:** 28nm, 5120 x 3200 digital resolution support, 12 GB Memory; **DirectX support:** 12; **OpenGL support**: 4.5; **Power Connectors:** 8Pin + 6Pin; **TDP:** 250W; **Warranty:** 3 years

Contact

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Hacking fingerprints
Researchers at FireEye have found flaws in certain Android phones that could allow hackers to steal your fingerprint data **http://dgit.in/FingPrntFlaw**

Free Raspberry Pi
Oracle and Raspberry Pi Foundation together are giving away 1,000 Pi units to encourage students into building **http://dgit.in/FreeRaspPi**

ASUS X99 SABERTOOTH

When enthusiast level features come together with excellent build quality

Getting straight to the point, this SABERTOOTH does not disappoint us and stays true to its legacy. It does cater to a niche segment of enthusiasts but the features on offer aren't available with the competition.

A difference that we noted compared to the previous Z97 SABERTOOTH was that this board comes with just one auxiliary fan over a heatsink seated near the rear I/O panel.



Price ₹27,750 (+Tax)

ASUS has included the OC socket on this board, and the ATX power connectors are now configured to accept an 8-pin + 4-pin connector to help spread the current load across more cables. This can be attributed to the OC socket which has more power pins that connect to the processor and the fact that the 5960X has a TDP of 140W compared to the 3960X and the 4960X which had a TDP of 130W.

Neither the Z97 SABERTOOTH nor the X99 SABERTOOTH boards have a debug LED panel but ASUS has introduced an app called TUF Detective that adds not only POST codes but allows you to monitor temperatures, voltage levels and even has a control panel (power/reset/clear CMOS etc). Another notable addition is that of two teal-blue USB 3.1 ports courtesy of an ASMedia ASM1142. And lastly, the board is compatible with NVMe storage options with the first NVMe devices having been announced just a few days back this addition is a welcome move.

Mithun Mohandas



Features 73
Build 80

Specifications

Chipset: Intel X99; **Memory support:** 4x2400MHz upto 64GB; **LAN:** 2x (Intel + Realtek) Gigabit Ethernet; **Audio:** ALC1150 7.1; **SATA:** 10x SATA III; **Expansion:** 3x PCIe X16(x16+x16+x8); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 5 years

Contact

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Noctua NH-U9S

A great but pricey choice for silent and small form-factor PC builds

Products from Noctua ooze quality and we're yet to see something from them to the contrary. The NH-U9S follows suit with the same build quality and the trademark Noctua design. This being a 95 mm cooler made primarily for Micro ATX or Mini-ITX systems, it has a small footprint. How small? Well, Noctua guarantees 100 per cent compatibility across all RAM modules so no matter what, you'll have enough room to mount memory modules even the ones with tall heat spreaders. Unlike the NH-D9L which is a twin tower based cooler, the NH-U9S has a single but thicker heatsink tower albeit with an extra heat pipe as compared to the NH-D9L. Both coolers are very similar and even come with the same NF-A9 cooling fan. Installation process for the NH-U9S is the same as the NH-D9L as well. What the NH-U9S differs in is its performance and even that difference isn't quite much. In fact, in our standard tests using the Intel Core i7 3770K, we noticed that the NH-U9S managed to keep it at 32 degrees Celsius when idle and the temperature under load never crossed 60 degrees. The NH-U9S edges past the NH-D9L (dual fan setup) with a difference of 2 degrees Celsius when idling as well as when under load which clearly makes it a better option. Adding another NF-A9 fan to the NH-U9S in a push-pull configuration will get you even more performance out of it and you'll be sorted. As far as the clearance between the cooler and the cabinet side panel is concerned, the U9S doesn't come in the way. But the asking price for the cooler is quite high and a major let-down.



Price ₹4,617

Siddhant Sharma



Features 88
Build Quality 90
Performance 68
Value for money 55

Specifications

CPU Support: Intel Socket LGA 2011 / 1366 / 1156 / 1155 / 1150 AMD Socket FM1 / AM3+ / AM3 / AM2+ / AM2; **Dimensions:** 125(H) x 95(D) x 95(W) mm; **Weight:** 618 grams; **Base:** Copper (Nickel plated); **Fan Speed:** 2000 RPM (+/-10 per cent)

Contact

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Lenovo Yoga 3 Pro

A unique, premium hybrid ultraportable

It's been three years since Lenovo unveiled the original Yoga back in 2012, and the machine continues to evolve. This latest 2015 avatar of the Yoga 3 Pro impresses at several levels, not just limited to its unique eye-popping design and exceptional build quality. The most notable change here is the new "wristband" hinge design on the Yoga 3 Pro, which looks far classier than the older, plain jane dual-hinges, and they do a great job of holding the screen and the rest of the chassis together. And this feat is especially significant given the 2-in-1 notebook has gotten slimmer and more lightweight – it's only 1.19 kg for a 13-inch notebook, which is quite something. The rubber stoppers on the Yoga 3's back panel prevent it from slipping on most surfaces, and houses the down-firing speaker grilles too.



Prop it open, and the Yoga 3 Pro reveals the otherwise magnesium deck covered with a soft surface textured with tiny dots that feel great under your palm and fingers. The slightly scalloped keys on the Yoga 3 Pro's keyboard are backlit are good for typing (not as great as the Yoga 2) primarily because they have lesser travel due to the unit's anorexic size. The single-slab trackpad is good to work on too. The Yoga 3's display looks and works



great as a touchscreen enabled tablet, thanks to its QHD+ IPS resolution screen with great multitouch support. Watching HD movies, 720p video calls, and better-than-average onboard audio (thanks to JBL-powered speakers), the Yoga 3 Pro blossoms under these tasks.

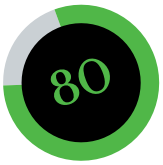
At the hardware level, the Yoga 3 Pro sports Intel's new 14nm Broadwell CPU – the dual-core 5Y71 clocked at 1.3 GHz. Naturally, it doesn't exactly perform with all guns blazing, but it doesn't feel slow for most daily tasks – primarily because its carefully paired with oodles of RAM and a fast SSD. While the overall battery life is not the best in its category, it's still good at 161 minutes – the Yoga 2 clocked 167 minutes – almost the same despite becoming a lot lighter! The operating temperature of the notebook has also fallen down a few notches, which is great for its usability. As a tablet, the glossy surface of the Yoga 3 Pro can be quite reflective, but not something you can't look past once you get used to working with it. And the display's performance is very good – it's very bright (257cd/m2), offers good contrast ratio, and handles both text and moving pictures very well.

Lenovo continues to pack the Yoga 3 with useful proprietary and third-party software – ranging from maintenance of the device, tuning its audio output, webcam apps, and more – no bloatware here. Also, the hybrid notebook's power brick is quite small, but not small enough – we wish for it to be even tinier.

Overall, the Lenovo Yoga 3 Pro is one of the best slim, 2-in-1 hybrid ultraportable we've reviewed so far this year.

The notebook is recommended for both business professionals and high-end consumers who want a unique product to play with it. If you can afford it, there's no reason why you shouldn't buy it, and we heartily recommend it.

Jayesh Shinde



Features 80
Performance 75
Value 75
Build 90

Specifications

Screen: 13.3-inch, QHD+ IPS multitouch display, 2560x1440 res;
CPU: Dual-core Intel Core 5Y71 1.3-GHz processor;
RAM: 8GB DDRIII;
Storage: 512GB SSD;
GPU: Intel HD 5300;
OS: 64-bit Windows 8.1; **I/O:** 2xUSB 3.0, 1xUSB 2.0, mini-HDMI out, SD Card reader;
Wireless: Wi-Fi 802.11ac, Bluetooth 4.0;
Battery: 4-cell;
Weight: 1.2 kg;
Warranty: 3 years

Contact

Lenovo India
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Email: lencare@lenovo.com
Website: lenovo.com/in



Uncoil away
If uncoiled, the DNA in all the cells in your body would stretch 10 billion miles, from here to Pluto and back.

Professionally Naming Service
While Samsung might hire a consultant to name their product, Koreans hire professional namers to name their baby. We kid you not.

Yurbuds Venture Talk

Your new running mate

Ever since we've received news of Harman Kardon acquiring Yurbuds, we've been eagerly waiting to try out their sports focused audio gear.

The Venture Talk brings to the table certain unique features. Take for instance the fact that the headphones are guaranteed to never fall out.



Price ₹5,999

Let talk a little more about the design first. The silicone tip that goes into your ear canal is shaped like a tube unlike the normal buds. It's got a patent pending Twist Lock feature which is not easy to figure out right off the bat. But follow the instructions in the video and voila, the headphones indeed get firmly planted in your ear. Forget about bumps from high-impact running, they really don't come off by tugging on the cord too!



Performance.....70
Features.....75
Value.....65
Build.....78

Specifications

Driver size: 15 mm; **Frequency response:** 20 Hz - 20 kHz; **Cord length:** 1.2 m

Contact

Harman International Pvt. Ltd.
Phone: 1-800-108-1234
Email: info@harman.com
Website: harmanaudio.in

The Venture Talk comes with IPX5 water resistant certification and tangle-resistant, rubberized woven cords. For safe storage, the buds click together magnetically and you even get a high quality carry case.

In terms of pure aural performance they fall slightly behind something like say the similarly priced Audio-Technica ATH-CJX9, but not by a lot. The Venture Talk is designed to let in some ambient sound, which for athletes running on the road is a good thing. This inherent non-seal design is perhaps the reason why the bass isn't very tight. It's present, no doubt, but it's not the hard hitting accurate kind we've grown used to. But the rest of the spectrum is reproduced decently enough. You have a fair amount of detail in the highs and in this outdoorsy sports-oriented use case, the trade off between sonic performance and other features might well be worth it. You've got the superlative comfort, rugged build and the lock feature that ensures they won't come off even during your most rigorous workouts.

Siddharth Parwatay

ASUS PB279Q

Is this 4K at its best?

We're slowly seeing more and more 4K monitors trickling into the market and we couldn't be more excited. We've always maintained that 4K on a 27+" monitor is ideal for working with, though maybe not so much for gaming, and ASUS's PB279Q fits the bill perfectly.



Price ₹62,500

This was the first monitor in our many years of testing that actually managed to display a 100 per cent sRGB profile (most good monitors manage 96 per cent). This is, of course, of little importance to the average user and you will most probably not even notice the difference in colour quality with your naked eye; which is why, sadly, we couldn't rate this monitor as highly as we wanted to.

A contrast ratio of 580:1 @ 120cd/m² is excellent and this goes up to 2530:1 @ 46cd/m². Maximum measured brightness (100per cent) was also very high at 334cd/m², though we would highly recommend that you tone down the brightness to a more comfortable 25 per cent. The monitor loses out badly when it comes to luminance uniformity and white levels, though it's still on par with most decent monitors.



Features.....58
Performance.....77
Build.....80
Value.....65

Specifications

Panel Size: 27-inch; **Colour saturation:** 100% sRGB; **Resolution:** 3840x2160 @ 60Hz (DP1.2) @ 30Hz (HDMI); **Brightness:** 334cd/m²; **Contrast Ratio (calibrated):** 580:1; **Response Time:** 5ms; **Speakers:** 2Wx2

Contact

ASUS Technology Pvt. Ltd.
Phone: 1-800-209-0365
Email: reachus@asus.com,
Website: www.asus.in

We saw a variation of up to 15 per cent in brightness levels between the centre of the screen and the extremities, which is acceptable, but we were hoping for better from this monitor.

We played games on the monitor at 4K, 2K and at 1080p and we must say, they look stellar. Games like Counter-Strike: GO were a pleasure to play and even at 4K the refresh rate was good enough to let us play comfortably. The monitor was excellent even at 1080p, but no match for a proper 1080p panel. Movies were a pleasure to watch as well, but anything below 1080p looks quite awful. Our recommendation: if you're getting this monitor for gaming at 4K, ensure that you have a GPU that's at least as powerful as a GTX 980 or an R9 290X.

Anirudh Regidi

Xiaomi Mi Pad

The budget friendly (M)iPad

Interactive review

85

Features 82
Performance..... 91
Design 77
Value 100

Specifications

Display: 7.9-inch; **Resolution:** 2048 x 1536; **Processor:** 2.2 GHz Nvidia Tegra K1 SoC; **RAM:** 2 GB; **ROM:** 16 GB expandable to 128 GB; **Battery:** 6700 mAh; **Camera:** 8 MP rear, 5 MP front

Contact

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Price ₹12,999

The Mi Pad bears striking similarities with the Apple iPad Mini. It features a gorgeous 7.9-inch IPS display with a resolution of 2048 x 1536 pixels and very un-androidesque 4:3 aspect ratio. Even though it has a bit warmer display, good colour saturation and exceptional viewing angles, we felt that the display is a bit dim.

Taking a look at the performance we find that the tablet can handle anything and everything you throw at it. This is all because of Nvidia's Tegra K1 chip which definitely raises the performance standards in the budget category.

Like we said earlier, the tablet is a performance beast and all the horsepower under the hood does heat the tablet up which in turn affects the battery performance. However, minor tasks like playing video content, browsing the web or just reading a book was enough for the battery to last us a day giving us 11 to 12 hours of ON time. The 8MP sensor in the Mi Pad takes pretty good pictures in normal daylight and in well-lit indoor environments.

Overall, The Mi Pad is the best tablet in its price range but it is not completely without flaws. Saying that, the flaws are not that intrusive and can be overlooked given its affordable price. So, if you want a tablet just for entertainment purposes and don't want to spend a fortune getting one, buy the Mi Pad.

Hardik Singh

Canon Powershot SX710HS

A superzoom for the ardent traveller

74

Feature 79
Performance..... 72
Design 71
Value 69

Specifications

Sensor megapixel count: 20.3 MP; **Sensor:** 1/2.3-inch BSI CMOS; **Optical Zoom:** 30x; **Focal length:** 25 – 750 mm; **Aperture range:** f/3.2 – f/6.9; **LCD screen:** 3-inch with 9,22,000 pixels; **Built-in WiFi and NFC**

Contact

Canon India Pvt. Ltd.
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Email: dgit.in/19plzCn
Website: www.canon.co.in



Price ₹23,995

This point and shoot superzoom from Canon offers a massive 30x optical zoom in a compact form factor. The Powershot SX710HS is aimed at travellers and buyers specifically looking for a point-and-shoot camera which will never fall short in terms of zoom range. The Powershot SX710HS sports a 20 MP, 1/2.3-inch BSI CMOS sensor, the higher megapixel count provides enough headroom to crop but the tiny sensor will restrict you with high noise that starts showing up early at ISO 800. The lens is optically stabilized and works well, even at maximum zoom you can get sharp results without any blur in good light conditions. The Powershot SX710HS is not a low-light champ and images at ISO 1600 and ISO 3200 suffer from noise and loss of detail in low-light situations. In terms of speed and response, the SX710HS impressed us in terms of startup time as well as how quickly it locks focus and the minimal shutter lag, all these are a big plus for a compact superzoom camera. In terms of extras, the SX710HS gives you built-in Wi-Fi and NFC allowing you to share your pictures with other devices with relative ease. While the camera is compact and feels solid in hand, we did have some issues in the design and usability area. For example, the mode dial is located well within reach but it takes too much effort to rotate.

Soham Raninga



Moustache begone!
Did you know that not one U.S. President has had the courage to grow facial hair in a 100 years? A hairy situation.

Terrabytes? Pshaw!
The entire Google Earth database comes in at a staggering, 20 Petabytes! And Google gives it away for free.

Budget Smartphone Battle

The big three under 8k



Price ₹6,999



Price ₹6,999

There's nothing we Indians like more than a bargain, except maybe our festivals. So, it is no surprise that companies like Motorola, Xiaomi and Lenovo have done well in the country. Budget phones from these companies, particularly Motorola and Xiaomi, have brought about a sea change in the smartphone market. The Indian consumer no longer looks at the price tag to determine quality, he or she looks at the value.

But, as our dear Uncle Ben once said, with great power comes great responsibility. The first generation budget phones from these companies were trendsetters, which automatically means that phones from the second generation have to be outright performers. We'll take the under 8k segment this time, and talk about three smartphones that perhaps provide more value than anything else in the market.

Our contestants here are the Xiaomi Redmi 2, Motorola Moto E (2nd Gen) and the Lenovo A6000. Note that we're using the 3G variants of the Moto E, and the 1GB RAM variants of the Redmi 2 and A6000. So, without further ado, let's jump right into it.

Build and Design

People often mistake these aspects of a smartphone as a representation of its looks. Well, if that were true, then the Xiaomi Redmi 2 would win hands down. The stainless steel buttons and matte finish plastic on this phone is just much better looking than its competitors. The Lenovo A6000 on the other hand does have a traditional bar design, but we find it a little too boring against the Mi device.

Nevertheless, there's a lot more to build and design than just looks. For example, the rubberised grip around the Moto E (2nd Gen) provides protection against falls that its competitors don't have. Yes, smartphones are least vulnerable when dropped on their sides, but a little more protection never hurts right?

Of course, Motorola's design choices don't allow for a removable battery, which is an area that the Redmi 2 and A6000 have covered. But that's just a design choice.

All things considered, it is the Redmi 2 which seems to strike the right balance between looks and sturdiness. The Mi device is also light and while not as sturdy as the Moto E, it's still a well-built smartphone. So we would go for the Redmi 2 in this segment.

Ergonomics/Usability

The next aspect that we need to establish is how easy it is to operate these phones while travelling or in crowded places. The largest of the three devices is the Lenovo A6000, with a 5 inch display and about a 5.5 inch frame. This is the overall length of the phone mind you. The Moto E is the smallest, with a 4.5 inch display and around a 5 inch frame.

It's very difficult to choose here, since the Redmi 2, even though it has a slightly larger 4.7 inch display, is almost the same size as the Moto E. We'll still go with the Moto E in the ergonomics department though. Motorola started this curved back design with its first generation of Moto phones. The design allows the Moto E, Moto G and Moto X to fit snuggly into your hands and feel very natural when you're using any of them. It improves the grip over the phone, which means you're less likely to drop it when using it in a hurry.

The Lenovo A6000 is just plain big and clumsy compared to the other two phones, but the Redmi 2 loses out to the Moto E here by a very small margin.

Performance

Motorola made a very surprising choice of processors for the new version of the Moto E. The company chose the quad-core version of the Snapdragon 200, which offers very little over the older dual-core version running on the first gen Moto E. In comparison, both the A6000 and Redmi 2 come with new generation 64-bit Snapdragon 410 SoCs.

It's a big loss for the Moto E here. If you're a Moto fan, you can take solace in the fact that the Snapdragon 410 isn't particularly strong in the GPU department, which allows for a smaller margin between the Redmi, A6000 and Moto E, but the Lenovo and Xiaomi devices are still better performers.

The benchmarks show the difference pretty clearly. The Moto E falls short in the processor department and is closer in the graphics and gaming segment. The same is also established through real world usage. The Moto E is simply weaker than the Redmi 2 and Lenovo A6000. The difference between the A6000 and Redmi 2 on the other hand can be attributed to the number of extra background tasks running on the A6000 due to the bloatware Lenovo adds.

The pick for the best performer out of these three smartphones isn't difficult. The Redmi

2 is better than the other two and offers better performance.

Display

This is another area where the Moto E doesn't stand a chance against the other two smartphones. In a battle between QHD and HD displays, HD wins, no questions asked.

Here again, the Xiaomi's display is sharper than both the Moto E and A6000 and thanks to MiUI 6, looks much better. It is lacking the brightness and viewing angles, but not enough to be called bad. The Redmi 2 more than makes up for these weaknesses with better colour reproduction and sharpness than both the other phones.

Comparing the Redmi 2 and Lenovo A6000, it's also easy to establish that the Dragontrail glass on the Mi display is better.

Camera

In the last two sections, the Moto E took a pretty big loss, but its loss in the camera department is resounding. It doesn't stand a chance against the other two cameras and can't provide the clarity, sharpness or low light performance that they do. The comparison is essentially between the Redmi 2 and Lenovo A6000.

Cameras also happen to be the department that the Redmi 2 has displayed its true genius in. The only part of the Redmi 2 that is not improved from its predecessor is the camera, and for good reason. For a phone that costs merely ₹6,999, this phone takes amazing pictures. The A6000 has a tendency to overexpose pictures in bright lights, whereas the Redmi 2 manages photography like a boss.

Images taken by the Redmi 2 have better fidelity than the Lenovo A6000 and the camera is much faster on it as well. The Redmi 2 is not only the winner in this comparison, it is hands down the best camera under 8k that you can buy right now.

Battery

In terms of numbers, the 2390 mAh battery on the Moto E is bigger than the 2200 mAh on the Redmi 2 and 2300 mAh on the Lenovo A6000. Bigger battery doesn't necessarily translate to longer battery life though. The three phones last almost the same time on battery tests.

In our tests, the Moto E and Redmi 2 both lasted for about 6.25 hours, while the A6000 lasted slightly longer at 6.6 hours.

OS, UI and everything else

The one area where the Moto E has a clear advantage is in the fact that it runs on Android Lollipop, while both the other phones run on KitKat. The newer OS gives the Moto E the edge here, although Xiaomi's MiUI 6 is a formidable competitor, even with KitKat. Lenovo 's Vibe UI on the other hand is a bloated mess and not something you would want, especially on a budget smartphone with only 8GB of internal storage.

All the three phones have 8GB of internal memory, which can be expanded to 32GB. This is something you expect from smartphones that cost under 7k. That said, the Redmi 2 takes a big step ahead of others in the connectivity department as it supports both 4G and 3G that too on both the SIM cards, a feature that any user would appreciate, irrespective of whether they use it or not, it's just good to have the option.

Not being a 4G enabled device is a big blow to the Moto E, but it doesn't matter since 4G isn't exactly widespread in India yet.

	Xiaomi Redmi 2	Lenovo A6000	Moto E (2nd Gen) 3G
Display	4.7-inch HD	5-inch HD	4.5-inch QHD
Processor	1.2 GHz Qualcomm Snapdragon 410 64-bit quad-core	1.2 GHz Qualcomm Snapdragon 410 64-bit quad-core	1.2 GHz Qualcomm Snapdragon 200 quad-core
Battery	2200 mAh	2300 mAh	2390 mAh
RAM	1 GB	1 GB	1 GB
Storage	8 GB, expandable to 32 GB	8 GB, expandable to 32 GB	8 GB, expandable to 32 GB
Camera	8 MP rear camera, 2 MP front camera	8 MP rear camera, 2 MP front camera	5 MP rear camera, VGA front camera
Operating System	Android 4.4 with MiUI 6	Android 4.4 with Vibe UI	Android 5.0 Lollipop

Conclusion and Winner

From the above comparison, it is evident that the Xiaomi Redmi 2 is the best smartphone to buy under ₹7,000. The device is an improvement in every way over its predecessor and a better phone than its competitors.

Motorola, which was once known for providing users good performance at low prices, seems to be asking for big compromises now. This gives companies like Xiaomi and Lenovo the edge.

It is also important to note that while Motorola has already announced the 4G variant of the Moto E, Lenovo is selling the A6000 Plus, which is the A6000, but with the addition of 2GB RAM and 16GB storage. Xiaomi is also expected to bring out a 2GB RAM variant for the Redmi 2 this month. Going by this comparison, it seems that the 4G variant of the Moto E would fail to impress against its competitors. Of course, we need to actually review it to be sure. Our bet, as the comparison shows, is on Xiaomi though.

Prasid Banerjee





The wedding planner!
Google actually has a wedding planner service! You can check it out at:
http://dgit.in/1IcsCg4



Something's fishy
Apparently, 30% of British fish are undergoing a sex change due to water pollution and contraceptive pills in the water.

Merlin Digital Sports Bluetooth Earphone

Good enough, if you're not very picky



Price ₹3,260

Bluetooth earphones have usually left us disappointed with their performance and more than a little prejudiced against them, but the Merlin Digital Sports Bluetooth Earphone does go some way towards alleviating that prejudice.

While we do have some complaints with regards to the design of the set, particularly in the ergonomics department, we were reasonably satisfied with the performance of the set. The sound signature seems to be optimised towards voice quality because most music tended to sound flat, particularly rock and metal tracks. That said, tracks with prominent vocals weren't so bad, especially when too many instruments weren't involved.

The thing with this set is that it's not meant to be an audiophile's set; it's a sports set that's meant to be used while jogging or running or engaging in other such "sporty" activities and to that end, it seems to serve its purpose well.

There is a considerable degree of stuttering when playing any file with a bit-rate that's of higher quality than a 128-bit mp3 or a YouTube video. Using our test tones, we found a degree of stuttering creeping into anything higher than 8000Hz, getting more prominent as the frequency went up.

We're not very sure where to fit this set in, however. The build quality is below average and performance is just about acceptable, but the device is also cheap (₹2,800 at some places) for a Bluetooth headset (almost any wired set is leagues better at that price). If you're in the market for a cheap, Bluetooth headset to use while working out, by all means go ahead and pick up this set, but to everyone else, we'd suggest that they spend a little more and go for something better.

Anirudh Regidi



Performance.....55
Build Quality.....45
Value for Money.....70

Specifications

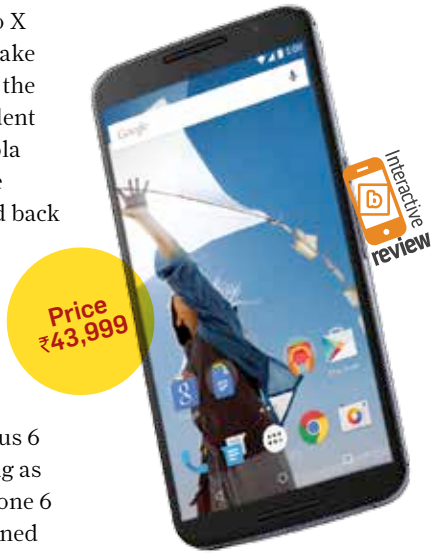
Keys: Volume, Track control, Play/Pause; **Battery:** 1900 mAh; **Bluetooth support:** v4, HFP V1.6, HSP V1.2, A2DP V1.2/1.4; **Weight:** 159 grams

Contact

Miracle Digital
Phone: 022-61394663
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Website: merlindigital.com

Google Nexus 6

The pinnacle of the nexus lineup

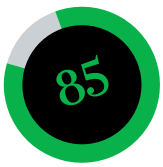


Price ₹43,999

Interactive review

If you take a Moto X (2nd Gen) and make it bigger, you get the Nexus 6. It's evident that Google and Motorola wanted this phone to be huge. Motorola's curved back design makes a big difference here. The fact that the phone takes the shape of your hand when you're holding it is a big plus. Using the Nexus 6 is nowhere close to being as cumbersome as the iPhone 6 Plus. Being better designed than the iPhone 6 Plus is really not a big feat though, is it? The bigger display accomplishes the true goal, which is to showcase the QuadHD display. The display isn't as good as the Galaxy Note 4, but it's sharp and represents colours accurately. The Nexus 6 runs on the Snapdragon 805. It beats everything on benchmarks, even the Moto Turbo. In fact, the Turbo and Nexus 6 are interchangeable in terms of the performance. You would be hard pressed to find a difference, even if the two phones are placed side by side. The few times I saw a split second lag can easily be written off because usage patterns aren't always identical. The 13 MP rear camera on the Nexus 6 is better than what Nexus and Motorola phones have offered till date, but it can't take on the likes of the Galaxy Note 4 and iPhone 6 Plus. It can take some respectable shots in sunlight, but fails in all other conditions. If you're a geek, you're probably sulking (like me), at the fact that a Nexus phone costs over ₹40k. To the regular consumer though, this won't matter. So, yes, the Nexus 6 is indeed a good phone to buy. If you want something more compact without sacrificing on performance, go for the Moto Turbo.

Prasid Banerjee



Features.....83
Performance.....86
Build.....84
Value.....93

Specifications

Display: 6 inch QHD; **Processor:** 2.7 Ghz Qualcomm Snapdragon 805; **Operating System:** Android 5.0; **Battery:** 3220 mAh; **RAM:** 3GB; **Internal Storage:** 32GB; **Camera:** 13MP rear, 2MP front

Contact

Motorola India Pvt. Ltd.
Phone: 1-800-102-2344
Email: dgit.in/MotoIndia
Website: www.motorola.in

Honor 6 Plus

If only they were braver

There's an old saying, "Imitation is the sincerest form of flattery." If that is true, then the Honor 6 Plus sure does flatter a lot of the competition, with Sony and Apple being the principles. The design takes subtle hints from Sony, while the UI draws from Apple. Amidst all that though, the Honor 6 Plus still manages to maintain its own distinctive personality.



The phone has a glass back and an ever so slightly rounded bottom. If it wasn't for the metal bands on the side, this would have been called a Sony Xperia Z3 rip-off. But, if you can take an existing design and make it better aesthetically, then it's not a rip-off. The metal edges on the side make for a really nice and premium feeling smartphone, especially when coupled with the glass back.

At 165 grams, it is a bit on the heavy side, but in my opinion that adds a certain heft to the device. It feels really sturdy and Huawei's promise of bulletproof glass bolsters that even more.

It's a flagship device and one that has a 5.5-inch display, which means a 1080p panel is obvious, especially if you consider the price. A pixel density of 401 ppi makes the display really sharp but it still seems to be lacking when viewed from the sides. They're enough to watch videos alone, but at the price Honor 6 Plus is asking, I daresay it could have been better.

My first complaint about the Honor 6 Plus is the user interface. While EMUI runs smooth and lag free, it doesn't seem to be well thought out. The company has added its own version of Apple's Spotlight search and Control Center, but none of them really make any difference. Honor's version of Spotlight isn't anywhere close to being as useful as Apple's. It is essentially just another Google bar in your phone.

The Control Center like buttons (on the lock screen) on the other hand are cumbersome. A swipe anywhere on the bottom fourth of the screen brings up the Control Center. In a phablet, this isn't a good thing to do. With the swipe to unlock setting, I often ended up bringing up this panel when I didn't want to. In this case, it is simply an Apple rip-off.

I find the Kirin 925 processor to be an absolute treat to work with, but if only the pricing was lower. The performance is at par with the Nexus 5, which quickly drops to the Moto X (1st Gen) level when you use the power saving mode. To put it simply, on the power saving mode, lags and stutters will creep in, especially on high-end games.

In benchmarks, the device comes out to be quite competitive, and as long as you keep it off the power saving mode, you'll see no drop in terms of performance. Though you will have to give up on Huawei's over-one-day battery life claim. Also, despite what Huawei says about the Kirin 925's temperature controls, the Honor 6 Plus does tend to heat up. That said, it cools down fast enough as well.

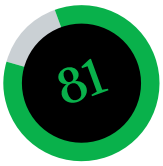
The area where the Honor 6 Plus really redeems itself is the dual-8 MP camera on the back. This allows more light to be taken in and is also how the Honor 6 Plus allows for the Wide Aperture mode. It clicks amazing pictures, especially bokeh shots, and is the best camera in the sub-30k range.

Unlike the HTC One M8, which also has dual cameras on the back, this combination allows you to tilt shift the focus points later on.

The 3600 mAh battery on the Honor 6 Plus is heavily dependent on the power saving modes and aggressive throttling of the CPU. The Smart Power saving mode almost never allows the CPU to go beyond 800 MHz, while the Ultra Power Saving mode is reminiscent of Samsung's feature by the same name. Without these modes, your battery won't last for the whole day.

The Honor 6 Plus is easily the most balanced smartphone that I've reviewed in a long time. If a good camera is what you're looking for, then go for it. But if you want uncompromising performance and a better battery life, then the OnePlus One is a better choice.

Prasid Banerjee



Features 87
Performance 81
Design 79
Value 83

Specifications

Display: 5.5-inch 1080p; **Processor:** HiSilicon Kirin 925 octa-core; **Operating System:** Android 4.4.2 with EMUI 3.0; **Camera:** dual-8 MP rear, 8 MP front; **Battery:** 3600 mAh

Contact

Huawei India
Phone: +91-124-47747006
Email: suresh@huawei.com
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SPEND SMART

AiOs, NAS drives, gaming controllers and gaming mice. This is where your PC shopping starts and ends.



ALL-IN-ONE

Brand	Model	Processor	RAM	Display Size	Screen Resolution	Storage	USB 3.0	Price
LG	Chromebase 22CV241-B	Celeron (4th Gen)	2GB	21.5 inch	1920x1080	16GB (SSD)	Yes	20,400
Lenovo	N308	NVIDIA Tegra 4OS	2GB	19.5 inch	1600x900	500GB	No	22,499
Dell	3010	AMD E1 2500	2GB	19.5 inch	1600x900	500GB	No	23,880
Asus	ET2013IUKI	Pentium G2030	2GB	20 inch	1600x900	500GB	Yes	28,350
HP	20-2312in	Pentium J2900	2GB	20 inch	1600x900	500GB	Yes	29,200
Acer	Veriton M200-H61-AIO	Core i3 (3rd Gen)	2GB	20 inch	1366x768	500GB	No	30,999
HP	20-a251ix	Core i3 (3rd Gen)	2GB	20 inch	1600x900	500GB	Yes	34,980
Dell	20 3048	Core i3 (4th Gen)	4GB	19.5 inch	1600x900	500GB	Yes	36,990
Lenovo	C470	Core i3 (4th Gen)	4GB	21.5 inch	1920x1080	1TB	Yes	59,600
HP	Pavilion TouchSmart 23p010IN	Core i5 (4th Gen)	4GB	23 inch	1920x1080	1TB	Yes	68,990
Lenovo	B350	Core i5 (4th Gen)	4GB	21.5 inch	1920x1080	1TB	Yes	70,199
Dell	Inspiron One 23 5348	Core i5 (4th Gen)	8GB	23 inch	1920x1080	1TB	No	75,490
Apple	MF883HN-A	Core i5 (4th Gen)	8GB	21.5 inch	1920x1080	500GB	Yes	78,888
Asus	Transformer P1801	Core i5 (3rd Gen)	6GB	18.4 inch	1920x1080	1TB	Yes	1,01,999
Apple	ME089HN/A	Core i5 (4th Gen)	8GB	27 inch	2560x1440	1TB	Yes	1,40,823



NAS DRIVE

Brand	Model	No. of Drive Bays	Drive Included	USB 3.0	Weight (Only chassis)	Warranty	Price
Iomega	StorCenter ix2-200	2	No	No	2.4kg	3 years	9,900
Netgear	RN102	2	No	Yes	2.1kg	3 years	12,675
Thecus	N2310	2	No	Yes	0.8kg	2 years	15,400
Seagate	STBN300	2	1TB	Yes	3.73kg	3 years	16,500
Iomega	StorCenter ix2-200	2	No	No	2.3kg	1 year	16,999
Netgear	RN104	4	No	Yes	4.7kg	3 years	19,000
Seagate	STCT2000300	2	2TB	Yes	3.4kg	3 years	20,304
Seagate	Business Storage 2-Bay	2	4TB	Yes	4.3kg	3 years	26,500
Iomega	StorCenter ix2-200	2	No	No	2.3kg	1 year	28,750
Thecus	N4310	4	No	Yes	3kg	2 years	32,456
Seagate	STCU4000300	4	4TB	Yes	5.4kg	3 years	36,699
Seagate	Business Storage 2-Bay	2	8TB	Yes	4.4kg	3 years	38,518
Synology	DS214Play	3	No	Yes	1.27kg	2 years	44,000
Iomega	PX4-300D	4	No	Yes	6kg	3 years	45,000
Iomega	PX6-300D	6	No	Yes	7kg	3 years	49,000

Agent001
Struggling to keep your phone running through the day? Maybe it's time you get yourself a good powerbank.



Fun Fact
The Sun is 4.5 billion years old and produces 383 billion trillion kilowatts of energy.



GAMING CONTROLLER

Brand	Model	Platform	Wireless	Price
Amigo	Android/iOS Bluetooth	PC, Android, iOS	Yes	1,149
Thrustmaster	Dual Analog 4	PC	No	1,399
Gizmosninja	Bluetooth Gamepad	PC, Android	Yes	1,815
Microsoft	Xbox 360	PC, Xbox 360	No	1,950
Thrustmaster	T-Wireless Black	PC, PS3	Yes	2,299
Thrustmaster	GPX	PC, Xbox 360	No	2,549
Logitech	Wireless F710	PC, PS2, PS3	Yes	2,574
Sony	Dualshock 3	PS3	Yes	2,990
Microsoft	Xbox 360	PC, Xbox 360	Yes	3,333
iPega	NA	PC, Android, iOS	Yes	3,338
Mad Catz	C.T.R.L.R.	PC, Android	Yes	3,490
Microsoft	Xbox One	Xbox One	Yes	3,999
Steelseries	69007 Free Mobile Controller	PC, Mac, Android, iOS	Yes	4,399
Sony	Dualshock 4	PS4	Yes	4,849
Razer	Sabertooth	PC, Xbox 360	No	6,800



GAMING MOUSE

Brand	Model	Max. DPI	Technology	Wireless	Cable Length	Weight	Price
Dragon War	Leviathan	3200	Laser	No	1.8m	98g	890
Dragon War	Dragunov Blue	3200	Laser	No	1.8m	76g	1,249
Logitech	G100s	2500	Optical	No	1.6m	110g	1,399
Logitech	G402 Hyperion Fury	4000	Optical	No	2.1m	144g	1,825
Logitech	MX518	1600	Optical	No	1.6m	106g	2,009
Cooler Master	Mizar	8200	Laser	No	1.8m	121g	2,295
MadCatz	R.A.T. 3	3500	Optical	No	1.6m	98g	2,990
Logitech	G600 MMO	8200	Laser	No	2m	133g	3,360
Thermaltake	Tt eSPORTS Black	5700	Laser	No	1.8m	NA	3,399
Cooler Master	Recon	4000	Optical	No	1.8m	139g	3,550
Razer	Deathadder 2013	6400	Optical	No	2.13m	105g	3,560
Dragon War	Phantom	5600	Laser	No	1.8m	299g	3,695
Corsair	Vengeance M65	8200	Laser	No	1.6m	318g	4,150
Roccat	Kone Pure	8200	Laser	No	1.8m	90g	5,100
Logitech	G9x	5700	Laser	No	2m	156g	5,250
Razer	Naga MMO	8200	Laser	No	2.1m	135g	6,000
MadCatz	R.A.T. 5	5600	Laser	No	1.8m	NA	6,052
Logitech	G500s	8200	Laser	No	2m	121g	6,295
Roccat	Kone XTD	8200	Laser	No	1.8m	123g	7,199
Razer	Ouroboros Elite	8200	Laser	Yes	1.6m	130g	10,999
Steelseries	Sensei	5700	Laser	Yes	2m	102g	12,449

digit RECOMMENDED BUYS

From smartphones to graphics cards, here's what we recommend for your next purchase!



TOP 3 BUDGET SMARTPHONES

Brand	Model	Price (in ₹)
Micromax	Yu Yureka	8,999
Xiaomi	Redmi 2 (4G)	6,999
Lenovo	A6000 Plus	7,499



TOP 3 BEST SMARTPHONES

Brand	Model	Price (in ₹)
Motorola	Moto Turbo	41,999
Samsung	Galaxy S6	55,900
Apple	iPhone 6	62,500



TOP 3 GAMING LAPTOPS

Brand	Model	Price (in ₹)
ASUS	G551JK-DM053H	81,999
MSI	GE60 2PE	1,19,760
Lenovo	Y50-70	78,000



TOP 3 ULTRABOOKS

Brand	Model	Price (in ₹)
Lenovo	X1Carbon 208A	1,83,999
Apple	MacBook Air (13inch 128GB)	79,600
Acer	Aspire S7-392	90,000



TOP 3 MID-RANGE GRAPHICS CARDS

Brand	Model	Price (in ₹)
ZOTAC	GTX 960 AMP! Edition	19,879
ZOTAC	GTX 760 2GB	17,785
Sapphire	Radeon R9 270X 4GB	18,450



TOP 3 BEST GRAPHICS CARDS

Brand	Model	Price (in ₹)
XFX	Radeon R9 295X2	90,999
ZOTAC	GTX Titan X	85,999
ZOTAC	GTX 980 AMP! Extreme Edition	50,744



TOP 3 BUDGET TABLETS

Brand	Model	Price (in ₹)
Xiaomi	MiPad	12,999
Apple	iPad Mini (WiFi)	16,990
Lenovo	A8-50 (16GB Cellular)	15,799



TOP 3 BEST TABLETS

Brand	Model	Price (in ₹)
Apple	iPad Air 2 (32GB Cellular)	50,255
Samsung	Galaxy Note 10.1 (32GB Cellular)	48,999
Lenovo	Yoga 2 (32GB Cellular)	43,700



TOP 3 BUDGET DSLR CAMERAS

Brand	Model	Price (in ₹)
Canon	600D	31,399
Nikon	D5100	29,417
Canon	1200D (EF S18-55mm + 55-250mm)	28,095



TOP 3 DSLR CAMERAS

Brand	Model	Price (in ₹)
Nikon	D4 (Body only)	3,25,024
Canon	EOS 5D Mark III (EF 24-105 mm)	2,25,895
Nikon	D810 FX	1,90,600

digit KILLER RIGS

Everything you'll ever need to build your own PC. Whatever your budget.

Basic rig = ₹23,608 HTPC = ₹25,261 Entry-level gaming = ₹49,563 Mid-range gaming = ₹61,559 Ultra high-end = ₹2,58,245 Digit Test Rig= ₹3,64,932

BASIC RIG

Processor	Intel Pentium G3240	3,090
Motherboard	Gigabyte GA-H81M-S1	3,500
RAM	Kingston ValueRAM 2 GB 1600MHz	1,133
HDD	Toshiba 500GB DT01ACA050	3,050
Graphics Card	None	0
PSU	Corsair VS450	2,090
Speakers (2.1)	Creative SBS A120	1,219
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Logitech MK200 (Bundle)	676
Keyboard	Logitech MK200 (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	15,708
Monitor	Dell E2014H 19.5 inch LED	5,595
Cabinet	Antec ASK-4000B-U3	2,305
Total		**₹23,608**

HTPC

Processor	Intel Core i3-4150	6,590
Motherboard	MSI B85M-G43	5,350
RAM	G.Skill RipjawsX DDR3 4 GB (2 x 2 GB) PC RAM (F3-12800CL9D-4GBXL)	2,983
HDD	Western Digital WD30EZRX 2TB	6,238
Graphics Card	None (IGP HD4400)	0
PSU	Corsair VS350	2,150
Speakers	None	0
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Logitech MK220 Wireless Combo	1,000
Keyboard	Bundled	0
Sound Card	None	0
Monitor	None (your TV)	0
Cabinet	Silverstone Sugo Series SST-SG02B-F-USB3.0	3,750
Total		**₹25,261**

ENTRY-LEVEL GAMING

Processor	AMD FX8320	9,490
Motherboard	Gigabyte GA-970A-DS3P	5,290
RAM	ADATA Premier DDR3 4 GB (2 x 2 GB) PC RAM (AD3U1333B2G9-R)	2,780
HDD	Seagate Barracuda 1TB	3,200
Graphics Card	SAPPHIRE R7 265 2GB	10,990
PSU	Cooler Master Thunder 450W	2,660
Speakers	F&D F680	2,647
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Logitech MK200 (Bundle)	676
Keyboard	Logitech MK200 (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	38,683
Monitor	Dell S2240L	8,381
Cabinet	NZXT Gamma	2,499
Total		**₹49,563**

MID-RANGE GAMING

Processor	Intel Core i5-4440	10,990
Motherboard	ASUS B85M-G	5,790
RAM	Gskill SNIPER F3-12800CL9D-8GBSR1	5,408
HDD	Toshiba 1TB DT01ACA100	3,685
Graphics Card	HIS R9 270X 2GB	12,190
PSU	Seasonic S12II 620 Watts	6,350
Speakers	F&D F680	2,647
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	CM Storm Devastator (Bundle)	2,438
Keyboard	CM Storm Devastator (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	50,448
Monitor	Dell S2240L	8,381
Cabinet	Thermaltake Versa H21	2,730
Total		**₹61,559**

ULTRA HIGH-END GAMING

Processor	Intel Core i7-4790K	20,990
Motherboard	ASRock Z97 Extreme6	14,999
RAM	Kingston HyperX Predator 2x 8GB KHX21C11T2K2/8X	16,298
HDD	WD WD30EZRX 3TB + Samsung 850 Pro 256GB SSD	20,679
Monitor	ASUS PB279Q 4K UHD	62,500
Graphics Card	ZOTAC GTX 980 ZT-90201-10P Standard	44,999
Cabinet	Corsair Graphite Series 760T	13,899
PSU	Antec HCP-1000 Platinum 1000W	15,148
Speakers	Logitech Z906 5.1	17,990
Optical Drive	LG Blu-ray WH16NS40 RW	8,244
Mouse	Razer Death Adder 2013	2,799
Keyboard	Corsair Vengeance K70	9,850
Sound Card	ASUS ROG Xonar Phoebus	9,850
Total		**₹2,58,245**

PRIMARY DIGIT TEST RIG

Processor	Intel Core i7 - 4960X (Extreme Edition)	66,990
Motherboard	ASRock X79 Extreme 9	27,846
RAM	Corsair Dominator 2133MHz (8GB x 4) (CMD32GX3M4A2133C9)	48,500
HDD	Toshiba DT01ABA100V	3,685
SSD	SanDisk Extreme II 240GB (x2 for HDD testing)	24,798
Graphics Card	NVIDIA GeForce GTX TITAN X	85,099
Cabinet+ Cooler	Cabinet (NA) + Intel RTS2011LC - Stock AIO	NA
PSU	Corsair HX1050	16,291
Monitor	ASUS PB279Q	62,500
Optical Drive	NA	NA
Mouse	Razer Ouroboros Elite	11,899
Keyboard	Tt eSPORTS Poseidon Z	8,099
Sound Card	ASUS Essence STX	9,225
Total		**₹3,64,932**



Entrenched
There's suddenly renewed interest in the deepest depths of the Atlantic Ocean.
http://dgit.in/1boZB3Q



How did GoT leak?
You've seen all of the leaked episodes of Game of Throne's Season 5. But how did they leak out?
http://dgit.in/1OP320G

Powerbanks



What to look for while buying that ideal portable battery charger

Agent 001
agentOO1@digit.in

The age of smartphones really magnified our complete failure of developing newer, more efficient battery solutions fast enough. Sure, the amount of cribbing and sighing was limited to a precious few who could afford laptops back in the early 2000s, and since then Li-ion has sort of refused to release its stranglehold over the world of battery-powered mobile computing gadgets.

The chorus of outcry back then has now grown to an ear-bursting crescendo, as mobile devices reign supreme. Every one of us dreads looking at our smart device's battery indicator and there's no immediate end in sight to this constant irritant. However portable battery chargers or powerbanks have therefore become a massive hit as a product category, purely born out of a combination of our collective frustration and necessity.

However, don't just buy any cheap powerbank that you see being flashed online. In the race to save a few hundred rupees, you can end up doing irreversible damage to your several thousand rupee smartphone. So, without any further ado, here's the skinny on buying powerbanks.

Bigger is better

We're not talking about its form factor here, but the battery capacity, which is generally denoted by "mAh" or milliampere-hour.

Tablets and smartphones also use the same unit to display their battery's charge holding capacity. If your smartphone's native battery rating is, say, 2300 mAh or 3000 mAh, then you should at least have a portable powerbank that is at least the double that number – over 5000 mAh for sure. Why? Because Li-ion batteries lose their maximum charge retention capacity after multiple charge - discharge cycles, so after several months, expect your powerbank's performance to drop down.

This is perfectly normal, and, incidentally, a very simple explanation as to why your phones don't last as long as they used to anymore.

Caring for electronics

Contrary to popular belief, a smart powerbank isn't all about charging your mobile devices. What separates good powerbanks from great ones are features that can help your charging device and keep them safe. Here are some characteristics to look for in your prospective powerbank's box pack, before handing over your money:

Short circuit protection: Whenever an electric circuit is shorted, devices can suffer irreparable damage at their basic building blocks level. A smart and secure powerbank will protect charging devices from any short circuit that may occur at the charging point through smart fuses. This is absolutely essential.

Over charging protection: How many of us forget to take our devices off the charging point? This is quite a common phenomenon, especially since we leave gadgets plugged in just before we hit the sack at night.

Another hallmark of a great powerbank is its ability to protect your gadgets when it's kept plugged in and charges for too long. This feature will automatically cut the power when the battery is full.

Temperature protection: A feature within the smart powerbank that can detect overheating of connected devices, especially if they reach excessive levels of heat when they're plugged in for charging. You'll thank us later for this.



What do you knoll?
Astronomical knolling can be a very fascinating subject.
http://dgit.in/1Ds9N30



This Xiaomi charger is quite a steal

Cables

While it's cute and convenient to see powerbanks trying to bundle a bunch of cables and connectors to make them as widely appealing as possible to prospective customers. I always recommend using the original USB charging cable you received with your smartphone or tablet, because it's best suited for charging that particular device.

Think of it this way, just like a cable that comes with a powerbank will be geared towards preserving its best interest, similarly your smartphone, tablet, camera or handheld gaming device's original charging cable is made to preserve and protect those unique devices from the hazards of electrical charging. Also, these original cables will usually come with an in-built fuse for an added layer of protection.

One for all

While we have covered some of the finer points to consider while buying a powerbank, let's not forget its biggest, most basic purpose – to charge devices, and if a powerbank has the ability to charge every device that you own, it automatically becomes one of the most important factors in your purchasing decision. Having to carry one power bank for your phone and another for your tablet is too much of a fuss – a great thumb rule here is to find a powerbank that can charge an Apple iPad, since they require 2.1 A output, which most powerbanks can't pump out — they only manage about 1 to 1.2 A. If you can find a powerbank that can charge an iPad, it generally means it's something that can charge almost any other smart mobile device that you might own.

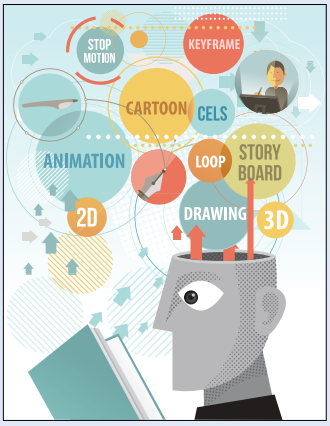
Then there is the issue of having so many interfaces to comply with, though chargers these days don't have the cable affixed to them, which means that you can make do with just a USB port on your power bank. But for older generation devices, it makes sense to have adaptors. Hence, a power bank that can not only charge all your devices but also do it simultaneously would be the perfect choice. Follow my advice and make the right purchase decision.

DSK INTERNATIONAL CAMPUS
animation | video game | industrial design

GAME ARTIST VS. ANIMATOR: WHAT'S THE DIFFERENCE?

When people learn that I work in the games industry, they think that my job revolves around playing games all day. The second misconception is that a lot of people associate video game artists with animators. Sure, a game artist and an animator do similar things: they draw. But that's where the similarities end.

Like an animator, a game artist can specialize based on their skillset: Concept Artist, Promo-Artist, Texture Artist, 3D modeler, Rigging & Animation Artist, Technical Artist and UI Artist. But one of the major differences in the production of an animation and a game is the limit of polygons that a game can use. Polygons are like the atoms of any game asset. In an animation, since the movie is rendered beforehand, the frame-rate problem is non-existent and so is the polygon limit on the assets. The production mentality in most game studios is: "less is more". So an artist looking to make it in the game industry, must understand these nuances.



Journey from concept to creation

An artist can no longer just draw and expect the game to create itself. Having experience in engines like Unity, Unreal and the like could be the edge in job interviews between one artist and the next. Engine knowledge is of prime importance when designing assets and managing their file-size. Another major difference is that game artists work very closely with programmers and designers in their team.

A game artist and an animator use different tools, have different work environments and modus operandi. While what we do might elementally be the same, the end result and the way we do it, is essentially different. This is rightly why Game Art and Animation are two separate streams at DSKIC (Supinfocom & Supinfogame). Under the guidance of the trainers at the institute and with my personal drive, I was able to learn a lot more than I could hope for at any other institute in India. Working on team-projects became viable as I met a lot of like-minded individuals. And working becomes easier when the institute provides high-end systems. Their *Build Your Own Game* competition is a great way to make your first game and is an invaluable experience.

In the end, being a successful game artist solely depends on you. You could be provided with all the top-notch facilities in the world, but you need the drive to push forward and improve. The goal of perfection is light-years away, but you can always get closer with each step.

Written by Rahul Narayanan, a professional video game artist and DSKIC alumnus. For more visit www.dsk.digit.in.

Advertorial

Visitor tracking
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If you aren't sure whether you have been offensive or sweared a lot on social networks, then Clear on iOS is for you **http://dgit.in/ClearAppiOS**

Best phones under 10k, 15k

Dear Agent 001, I want to buy two good phones, one below 15k and the other below 10k. My expectations are simple – I want good performance and long battery life from both these phones, including moderate camera quality. I am considering the



The Yu Yureka

Lenovo P70 but am open to other options, too, at the sub 15k range. For the sub 10k phone I expect good specs, performance (including camera performance) and moderate battery life, and for this I am considering the Yu Yureka, but am open to other suggestions, too. I am not much concerned about the brand. Both screens should be 5.5 inch or lesser. Thanks in advance.

–Parth Bhuta

A Hi Parth, It seems the Yu Yureka is the right choice for both your phones.

For the sub-10k phone, that would definitely be the best choice. If you want more options for the below 15k segment, take a look at the following:
Samsung Galaxy S3 Neo (good camera, respectable performance, good battery)
Nokia Lumia 640/640XL (respectable performance, good camera, good battery)
Honor 4X (decent performance, good camera and marathon battery)

Also, we expect one of the 2GB variants of the Asus Zenfone 2 (to be launched on April 23) to be in your budget.

That's a good performer, but you would compromise on camera and get moderate battery life in return.

GPU upgrade

I am planning to upgrade my graphics card. I am presently using an NVIDIA EN 210 graphic card which is not meeting my gaming needs. I plan to play games like Counter Strike Global Offensive, Left 4 Dead 2, F1 2014, Tomb Raider, Grand Theft Auto 5 etc. on my PC via steam.

I am currently using ASUS P5KPL-AM/PS motherboard with 3 GB RAM and Intel Core 2 Duo E7500 @ 2.93 Ghz processor. My budget is 15k rupees. Please suggest a good graphic card in my budget and I do not plan to change my motherboard. So please suggest a card which will be compatible with the above motherboard.

–Tanmay Agrawal

A Hey Tanmay, your motherboard has PCIe 1.1 and that isn't a problem because even the current generation of graphics cards are yet to fully utilise the bandwidth provided by 16 lanes on PCIe 1.1. There will be a minor difference in FPS since the encoding method used in older PCIe isn't as efficient as PCIe 2.0/3.0.

Your biggest problem, however, is that while most games will seem to run just fine on that CPU, the performance bottleneck is very severe and you can easily lose upto half your expected frame-rate to that bottleneck. At the same time, 3GB of DDRII RAM is also a severe limitation on



The GTX 960 might be the best mid-range card for everyone

your system and games like GTA V will chew through it in no time at all (we've had systems with 8GB RAM struggling to run that game.

You've also failed to mention the power of your SMPS or PSU as it's known. We would suggest that you first consider upgrading at least your RAM to a minimum of 6GB, and then using the rest of the cash to get yourself a GPU like the Nvidia 750Ti, which should set you back by about 10k. Ideally, we'd heartily recommend a complete system overhaul so plan for that in the near future. Games like CS: GO and Left 4 Dead 2 should run comfortable on your system, however. So you're not that far out of the loop as far as your config is concerned.

Camera for serious amateur photographer

Hi Agent 001, thanks to using several iPhones over the years, I've finally been inspired enough to move to take a crack at photography beyond just smartphone cameras. As an aspiring amateur photographer interested in daily life, sports, and nature photography, what sort of camera would you suggest under 30-35k?

–Bajrang Sen

A Now this is a very tricky question. We'd recommend that you start out with a DSLR simply because a DSLR platform will give you the best combination of flexibility, upgradability and performance that you desire. The tricky part is choosing the right DSLR.

We'd suggest that you go for a Nikon D5100. It's an old camera, sure, but it's still a great camera and for the price it's retailing at, it's a steal. The performance of that camera is enough to give any mid-range DSLR a run for its money and it's powerful and flexible enough for just about every situation. To top it off, the camera is very quiet, even quieter than most Canon's at the same price, making it an ideal choice nature photography.

The camera should set you back by around ₹25,000, but the rest of your budget will need to be spent very carefully. You'll most probably receive an 18-55mm kit lens with the camera. Play around with it and try to understand the photos that you're taking. Learn your limitations and try to figure out how the lens is limiting you. Do you need more zoom or better macro performance? Will you need a tripod? What about a flash? How much zoom will you need? Are you taking portraits or pictures of birds on trees? All these questions only you can answer yourself. Take photos, analyze them. Understand your needs and upgrade accordingly.

Geckobot uprising
Researchers have created tiny gecko robots, capable of lifting 100 times their weight http://dgit.in/GeckoBot

The story of YouTube
From running at a massive loss to running at almost breaking even. Find out how Google saved YouTube: **http://dgit.in/1JCIqHo**

REBOOT YOUR CAREER!



Find out how technology will help you reinvent yourself and land you that dream job!

A.Pathak
readersletters@digit.in

There comes a time in everyone's life when you find yourself on the verge of breaking down if you have to attend another conference call. When even the new coffee machine doesn't excite you, when every little task at work seems too much to handle and plain unnecessary. This, my friends, is the time to take life in your own hands and kick out the drudgery in your job.

It's time to find something new and exciting, a time to reinvent yourself and get those good ol' creative juices flowing as we bring to you the best ways to reboot your career.

Whether it's picking up a new skill and adding that to your current work focus or looking for a completely new job and following your heart's desire, it's never too late to look up the good people on the Internet and ask for some help.

What most of us don't realise is that there is a vast amount of knowledge within our reach on the world wide web and with a little bit of research and patience we can actually master certain arts and use them to our advantage. So without further ado, here we go.

Learn five different ways of saying Hi

While learning a language may seem time consuming and expensive if you sign up for courses, it's actually pretty cheap and easy if you do it through the Internet. Many professionals state that it may not be an integral part of of your CV but being bilingual has its upsides for those involved in marketing, sales and media.

If you have a knack for languages and a drive to do something new, then this is a sure fire way of dumping your boring marketing job and starting a new career as a translator or an interpreter.

There are many helpful tools on the web which can help you achieve this. You can check out Livemocha (http://livemocha.com/), this online community is dedicated to teaching its users languages for free. You can choose from 35 languages including Arabic, Marathi and even Urdu. The website also has sessions where you can sign up and speak to native speakers. Busuu (https://www.busuu.com/enc/) is another good option and has a selection of 12 languages and uses cute flash cards to teach its users. You can also try Babbel (http://www.babbel.com) which has a unique speech recognition feature which helps you with your pronunciation early on in the course. Duolingo (https://www.duolingo.com/) may be restricted in the number of languages that it provides but the best thing about this website is that it's absolutely free.



Say Bonjour to your new teacher

Getting Chatty: Learn Public Speaking

Most people relate public speaking to a dark boardroom filled with sleepy people listening to a man going on about the powerpoint presentation that's projected behind him, well... you get the idea.

However, public speaking is a more nuanced art which needs actual knowledge, skill and patience to master.

There are plenty of books and subscriptions which will claim that you can become the next big guy in public speaking in a set number of days. However we suggest turning to the Internet first and gaining some free knowledge first.

Coursera (http://dgit.in/1OPd023) has a pretty neat course by the University of Washington on public speaking which provides you with interesting knowledge through a series of videos. Besides this you have MindTools (http://dgit.in/1JlQake), a career website which has some helpful tips on how to become a better public speaker. Then you have Ginger (http://www.gingerpublicspeaking.com/) a website dedicated to making its users better public speakers, they have a free e-course that you can sign up for,



The mother of all demos
The one demo to rule them all. Check out this awesome video showcasing the first, interactive PC: **http://dgit.in/1bpfMy8**



Warp 9!
NASA may have accidentally created a warp field in their test lab. To infinity, and beyond! **http://dgit.in/1GqdCt0**



Channel your gift of gab!

plus, a collection of interesting blog articles that you can follow. You can also check out blogs by professional public speaker's like Patricia Fripp's Blog (http://dgit.in/1z1FUdM) to get hepful insight into public speaking.

Excelling at Excel

Are you one of those people who tear up their hair every time they see an excel sheet? Well, your days of whining are over as we present to you the best ways to perfect your skills as an Excel master! Ok so maybe you won't make a career out of making the best excel sheets or the most entertaining online presentations but such skills actually give you a big boost in your career as not many people can make excel sheets as deftly as required.

Lynda.com (http://dgit.in/1daiyZd) offers a free tutorial in microsoft excel which helps in tackling any excel related query. You can also sign up at Chandoo.org (http://chandoo.org/) for a fee, or you can visit the Chandoo blog and learn more than 500 excel skills for free. Chandoo also offers a free newsletter and podcasts for further learning. Udemy (http://dgit.in/1aYKvBz) also has a course on learning excel which is taught through short videos, the course promises to make you an excel master in 6.5 hours and also has a money back guarantee. You can also hit up Mr. Excel (http://dgit.in/1DsfiyD) an online forum for excel users. Be sure to post questions and go through previous ones for a better understanding.



Become the Excel Jedi!

Unleash the writer in you

It was Benjamin Franklin who once said, "Either write something worth reading or do something worth writing." Taking a hint from the great man we suggest that if you have the creative bug in you, you should explore it and hey, make a little money off it. With retail websites popping up every single day and the number of lifestyle, tech and travel websites increasing, there is a huge requirement for content writers online.

You can start by creating your own blog. A blog will help you create a good online presence plus also work as a resume for any content writing job.

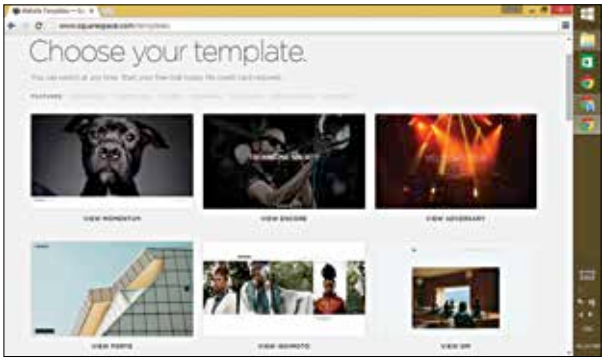
To do this you can sign up on various blogging sites like Blogger (https://www.blogger.com/) , Wordpress (https://wordpress.com/), Squarespace (http://www.squarespace.com/) or even Tumblr (https://www.tumblr.com/) . Each site has fun features to explore and interesting ways to showcase your blog page.

If opinion writing is not your thing and you want to go into the more creative side of things, then you can always sign up for a course at the Open University (http://dgit.in/1Oln08p) for creative writing. The course offers assignments and even online interactions and starts in October this year. You can also look up The Crafty Writer (http://www.thecraftywriter.com/) online for free advice on how to develop your writing skills,the best part about this site is that they will appoint a tutor who will actually critique your work.

For those who have surpassed the stage of blog writing and online courses, if you have already written a book or want to write a book and want it published then you can get it done at websites like Booktango (http://www.booktango.com/) and Blurb (http://www.blurb.com/), which allow you to design, publish and sell your book online for free. With all those great options out there, stop reading and start writing.

Get skilled using Photoshop

For those who think that Photoshop is only used by big-shot magazines to make fat celebrities look skinny, think again.



Mint money through your creativity

Image editing has become an essential part of photography in today's world. It's not just about removing blemishes from you profile pic, but about making images more likeable and presentable. If you are interested in photography, then good Photoshop skills are a must, however, you can start a business editing photos for others or even take Photoshop classes for people interested in photography once you master this seemingly intimidating program.

You can start by tinkering with the program on your own and use the tool's inbuilt help mechanism to help you understand it better. If you don't have the patience to do so, then you can always check out Lynda.com (http://dgit.in/1dakeSI) which gives you free video tutorials for learning Photoshop. PHlearn (http://phlearn.com/photoshop) to get some



Say cheese!
The technicalities of photography can leave you befuddled. However, PetaPixel has a simple solution: **http://dgit.in/1I54Ana**



BITS Pilani Conquest
Conquest, organised by the students launched the Campus Ambassador Programme to reach 500 colleges across India **http://conquest.org.in/**



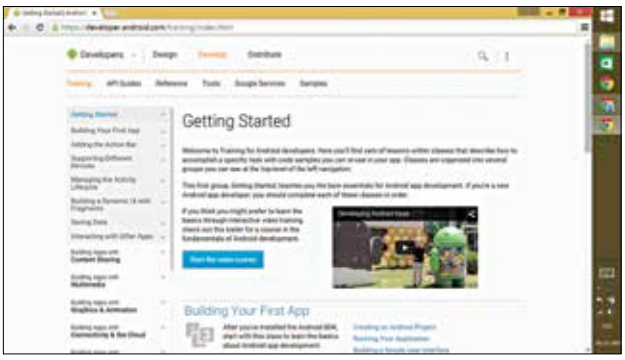
Learn to paint a pretty picture

amazing free tutorials by photographer and Photoshop master Aaron Nace, which give you insights into this program. You can either stop at the trial courses or sign up for their full online courses. You can go the the source and check out Adobe TV (http://dgit.in/1EzSEdy). Made by the creators of Photoshop, you can learn through video tutorials without paying for any of the packages.

Because I am App-y

App development has come up in a huge way and the best part is, no matter which field you belong to, with a little patience and determination, you too can create your own apps. In a country like India and with a smartphone in almost every hand, it's prudent to dive into the app market and create something original, unusual and even helpful. Who knows, if your first app takes off, maybe you could become a full time app developer!

Both Android and iOS have helpful tutorials all over the Internet which can get you through the daunting task of learning programming for app development.



Learn to build your very own app

Although it would be best if you had some basic knowledge of computer programming but if you don't, fear not! The Internet doesn't judge. You can hit up DIYGenius (http://dgit.in/1yXKg5k), which has a comprehensive collection of links to help you connect with various tools to learn development in Android 5.0.

You can also go to the source and sign up at the iOS Dev centre (http://dgit.in/1GfXdoc) or the Android Developers Training (http://dgit.in/1yXKARj) for knowledge of either platform. You can also sign up for the Android Developers training at Udacity (http://dgit.in/1GfXpUH) for a fee and access their course material for free just by signing up. Similarly, Coding With Chris (http://codewithchris.com/) will help people interested in iOS app development who have absolutely no programming background.

For those who aren't yet convinced...

For those all charged up and ready to take the leap, good for you, for those who are not yet ready to make a drastic change, here are some ways to make your job search easy.

Run your resume through Resunate

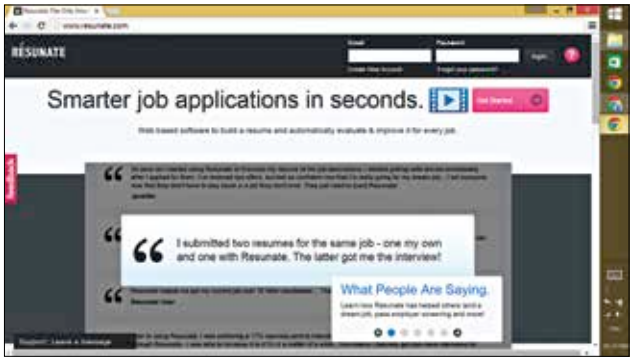
Resunate (http://www.resunate.com/) is a web based software which actually calculates how effective your resume is and even makes suggestions as to how to improve it, if you feel that you CV is missing something, it's worth uploading your resume here and giving it a chance.

Keep an eye out for market trends

Hit up websites like Glassdoor (http://www.glassdoor.co.in), Payscale (http://www.payscale.com/) and SalaryScout (http://www.salaryscout.com/) to figure out how much other companies in your industry pay employees, a little snooping always helps before asking for that new CTC.

Connect. Connect. Connect.

Use social media to expand your online presence and help you get in touch with future employers, besides being more active on LinkedIn (https://in.linkedin.com/), you can also join industry related groups on Facebook (https://www.facebook.com/) and hunt for jobs there.



Super-powered resume

You can also use an app like Lunchmeet (http://lunchmeetapp.com/) which helps you meet professionals in your area for lunch to discuss work, life, etc. After all, a face to face meeting is always better than stalking someones Twitter or Facebook account.

So that's all folks, we hope that we have inspired you enough to quit mopping and start learning something new and cool in life. Just remember that there is no right age to start from scratch.

The Internet need not be such a scary place. Embrace it for it can be a great teacher, but only if you ask the right questions of course.

All you need is the right attitude, the willingness to learn and the help of the almighty Internet to get you through your journey.



Silver Jubilee
Here are a selection of the Hubble Telescope's most stunning images, celebrating its 25th anniversary: **http://dgit.in/1EA6igY**



25 to Mars
Students at Purdue university submit a 1000pg. proposal for a trip to Mars. **http://dgit.in/1I58oEU**



The most used mobile web browser in India

We chat with Mr. Kenny Ye, Managing Director, UCWeb India, and discuss what makes UC Browser the most popular mobile web browser in the country. Also, we talk about their highly active user community and the future updates that we are going to see soon from UCWeb.

Kenny Ye, Managing Director, UCWeb India

Abhijit Dey
abhijit.dey@digit.in

What features does UC Browser have to offer which aren't available in the other mobile web browsers? What is making users switch from their stock browser?

Kenny: UC browser is the first, fresh product from UCWeb initially released back in 2004. It's the first mobile web browser to introduce cloud computing technology even on feature phones.

At that time, the handset processing capability wasn't good enough, and when we introduced the technology to the users to access the Internet using their low end handsets, the user experience was very bad comparatively to the current smartphones.

After that, we brought the technology from the feature phones to the smartphones and made it even better as the processing capability of the computer improved drastically.

We also integrated and improved the cloud computing technology to have a better user experience. If we want to differentiate the advantages of UC Browser, there are two important parts. The first is the technology because UCWeb is a technology oriented company and it was the first to introduce cloud computing in a mobile web browser and we continue to invest in the technology and resources.

So 80% of our staff are from product and IT and we make all our efforts to improve the technology. This is why we can provide a different user experience to users on UC browser. The second thing is about localised content because as you know, the normal browser has blank pages and the users don't know what they can get from the internet.

Through UC browser we localise the navigation pages and also we integrate a lot of the content, famous websites and also services into the browser. This way the user can very easily and conveniently access any service and content. So, I think these two things make us different in the market.

Talking about the rise in mobile data traffic in India, how is that working out for you? How many active users do you currently see in India and how much do you expect in the future?

Kenny: As we all know, there was a huge increase in the shipment of the smartphones last year and the users increased very fast, leading us to a growth rate of more than 100% last year. Our market share, according to StatCounter, increased from 32% to 44% (Mar 2015) last year in India which is a very huge progress. If you go to the Google Play Store, we have a 4.5 rating which we got from the users and we also maintain a good relation with our huge user community on Facebook, with more than 3 million Indian fans on the Facebook page.

There are interesting cases when we go through the user survey. When we ask them how did they get to know about UC browser, most of the user say they were introduced to the app by their friends.

The stats are really impressive, we have achieved 100 million daily active users globally last year and there were more than 500 million registered users globally.

Flipkart and Myntra recently closed down their mobile website, to focus on their mobile app henceforth. Do you think websites will slowly move away from mobile sites towards mobile applications?

Kenny: The discussion of whether applications or websites are dominating the market has been going on for five years.

Based on our understanding, the websites and applications play a different role in this industry. Websites are more convenient for users who access services and if you want some information you wouldn't want to download the application first and then go searching for the information.

You would want the services and the information in a short time. So, I think

websites can provide more convenient services to the end users. That's why we also integrate a lot of local content services in UC browser making it convenient for the users.

If we talk about the usage of Facebook, I think that most of our users will use the social network on our browser. During our user research, we asked them why they use UC Browser to access Facebook even though it has a native app, and the answer was that they were able to open the pages and load the images faster than the app.

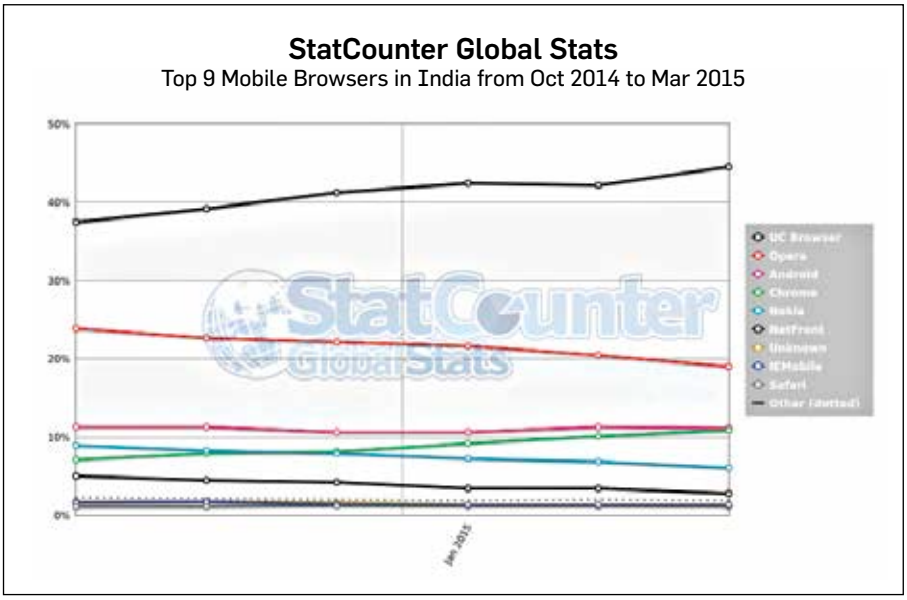
We have the technology of cloud computing and data compression, not effectively present on the native app which makes the experience faster.

We are focused on the web browsing experience, so it adopts the local network and handsets to make the experience optimal and we do a lot of customisation and optimisation based on that. So if you're doing this from every single application, you'll also need to have a huge resource doing that.

I don't think most of the companies have these resources and since we have this technology, we can make it easier for any application. After Facebook found that a lot of users were using their service from our web browser, they were interested for a collaboration with UCWeb on how to make this user experience even better. So we launched a project with Facebook to make the notifications appear on UC Browser and the user can have the same experience in the browser as seen on the Facebook application.

We are yet to launch this version, and we are still working on improvements that we can bring to the users.

It's very important to us to be working with other products and we are in discussion with some of the other services on how to improve the user experience on the website through our mobile web browser.



How is your user community? How often do you get feedback on the browser?

Kenny: We have focused a lot on user engagement from our community, especially on Facebook. You will notice that our fans on our Facebook page are very active.

We try to communicate with them everyday through different events. For example, on UC Cricket, users can share their predictions on the score of the game or share which team or player they support. They also engage in the community with each other and not just with us.

"A great many users still access Facebook via UCWeb even though there is a native app."

UCWeb claims to have 200 patents on mobile web browsing. Any update on a service or feature that we would be seeing in a few months?

Kenny: Because we focus on the technology, we have a lot of patents and this is very important for the company.

This is the proof of the technology and the human resource investment that we have done for the users. It's very difficult to answer about any updates because as an Internet company, we update the product every 4-6 weeks.

We want to add a lot of features and improve on them in different versions. We have also launched many Beta versions in a small group of users and we keep getting feedback from them very frequently.

The users love the open Beta versions since they get to use the latest features of the mobile web browser. We still focus a lot on improving the user experience that includes browsing, viewing videos, download speeds, and for major services like Facebook.

We already have a lot of users coming online and in the future we'll have better smartphones as well. What do you think the ideal web browser in the future would be like?

Kenny: I think that it would be a browser with most of the services and content from the web.

So UCWeb is trying to build an ecosystem with the local partners in this market to make this happen. It will be able to integrate most of the local content services into the browser so that we can provide a more convenient way to access these services by the users.

So, if you have any idea or information that you want to look for, you can reach the content and services seamlessly. That is the ideal way for a mobile web browser because the user doesn't care about how he gets the content, he only wants to get to the content.

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Community
Want some tips on saving money online? Check out what a spirited member of our community has to say.



An Interactive System
Check out this lovely, interactive book that artfully explains the workings of our solar system: **http://dgit.in/1bB3nrL**

At least they tried

In our quest to find elegant solutions to your tech headaches, we've stumbled across some of the most inelegant, ridiculous and downright hilarious solutions to some of the simplest problems. The solutions are insane, but there's still some method to their madness.



A real mouse

We haven't exactly been kind to mice ourselves, but this might have gone just a little bit too far. This enterprising netizen actually went so far as to rip apart his computer mouse and implanted the components into a (thankfully?) taxidermied mouse. We shudder to think what long, sweaty nights will be like with that thing in your hands.

Bump

It's so frustrating when some pesky motorist bumps into your car and takes a bit of paint with him. It's even more frustrating when that scratch is tiny and there's nothing you can do about. Or is there? We present to you, the DI-Why car bumper. It's made from premium, waterproof plywood and if you damage it, you just carve yourself a new one!





Bustr

What would you do if you're in a country that has no money and woeful public transport? You go out there and build one of these. What you're looking at is a tractor-trailer that's been converted into a sort of bus, the Bustr if you will. It's fascinating what people will come up with. And here we're thinking that the world is fast running out of ideas.



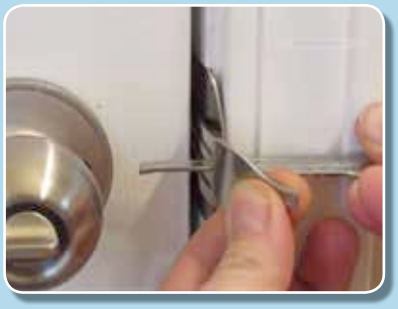
A hat for chores

Chores are painful, especially the ones that require nothing more than pure manual labour. Washing dishes in particular is one such chore, where you mechanically pick up dishes, scrub, wash and dry. If you're like the guy above, you've gone and made yourself this awesome hat. Plug in a phone and at the very least, you will be entertained.

Wretched hammer

Swiss army knifes are too common now. It's time to set yourself apart and what better way to do that than with the manliest of tools— the hammer and the wrench. What you see below is a product of the creative genius of some individual on the green Earth. We're not really sure how effective that contraption is, but, well, at least it's novel.





Fork it over!

You do break the lock on your door on occasion, but what if you're in a hurry to lock the door and can't wait for a locksmith? What if there are zombies outside your door, just waiting to turn that doorknob and pour in, feasting on your guts at their leisure? You get a fork, a vice and a saw and you build your own, ghetto door lock. http://dgit.in/1JBwfKV



Universe Simulator

After you've grasped the basics of the solar system, it's time to try your hand at creating a galaxy: **http://dgit.in/1HAgjcN**



Dominating dominoes

Here are seven of the best Rube-Goldberg-esque contraptions made almost exclusively with dominoe: **http://dgit.in/1Qrg2x6**

How we unwind



Hitting the bullseye

The first thing that we noticed on shifting to our new office (read the diary) was that the walls were looking bare. Jayesh, unable to stand the dreariness, picked up a dart board at the earliest opportunity. We've been playing nothing else since. Jayesh is currently king of the board, but Sid's shots are slowly begining to fly true.

Goal!

To ease the frustration of settling into the new office, Big Daddy decided to bring over his PS4 for some of the PC-gaming enthusiasts in the team to witness the joys of console gaming. Being a huge football fan, Jayesh wasted no time showing off his footy skills, scoring such a goal that left everyone mesmerised.





Dead or Alive 5

It's rare for a game to start us off on a detailed discussion on physics and fluid dynamics, but with Dead or Alive 5: Last Round, the discussion came easy. How? Well, when you get options to adjust the physics of, ahem, mammaries, in a fighting game, it's bound to pique our interest. Hint: We preferred DOA to natural.

digit DIARY

It's a brand new month and we've just shifted to a brand new office. Unfortunately, our rats received the memo at just about the time when we did and had already started settling in by the time we moved in. Now we're not very violent geeks, even the rats we executed earlier were so executed out of pity for their plight than because we hated them or feared them (yes, we're very self-righteous when we need to be), but this is getting a bit much. It won't be long before we start issuing bounties on their heads, so feel free to volunteer when we do.

It does take a little time to break in a new office, but Jayesh's dart board did hasten that process. Now instead of bare, boring beams and cupboards, we have pock-marked beams and cupboards, where our more energetic misses pierced the wood. We would have had more than pock-marks, fists in the wall in fact, if Jayesh hadn't expressed a great deal of self-control when the ACs broke down. The steady drip of icy water, the incessant hammering and drilling by the repair crew and the alternating hot and cold air led the normally sedentary Big Daddy to see blood!

If the month wasn't frustrating enough, our Internet decided to start acting up and even though we have three separate lines, not one seemed to want to cooperate. This exacerbated Mithun's troubles — he was testing NAS boxes — when he just didn't have a steady enough Internet connection to update the devices as required.

Yes, this has been a bit of a frustrating month, but Big Daddy had the foresight to bring his PS4 to office, letting us unleash our frustration on the denizens of Netherrealm in the most gruesome of fatalities! K.O.

NP AV
PC, Laptop
Tablet, Mobile
सुरक्षा
92.72.70.70.50
98.22.88.25.62
india antivirus .com



1,500 apps vulnerable
New data from analytics service, SourceDNA, indicates that about 1,500 iOS apps are vulnerable to attack: **http://dgit.in/iOSbug**



Multi-coloured 3D printing
New 3D printer accessory from Palette makes it possible to 3D print multi-coloured objects **http://dgit.in/Palette3D**

digit SQUAD

Every month we recognize the best article written by our community members and publish it here. Keep up the good work, Digitians!

Save money while buying on e-commerce websites

Money, unfortunately, doesn't grow on trees and so we must spend it or save it wisely. This guide will help you do just that with every online purchase.



Praneet Sah

Whether it's locally or online, we all buy stuff. When it comes to buying things locally, nobody can bargain better than your experienced mother, however, even her skills won't help you save money online.

Get paid for your own purchases

Let's first understand what exactly an affiliate system is. Put simply, it means getting a commission on every purchase by buyers who are referred by you. It's the same as striking a deal with a local shop owner whose store you'll recommend to people and in exchange for your referral, for every purchase by these buyers, the store owner will give you some x% of money.

In general, websites like Flipkart would offer you somewhere between 0.1% and 20% commission on the total sales that were referred by you. The commission percentage is based on the category of the item that is bought. Categories such as Home Décor, Fashion and Toys generally offer more commission (going up to 20%), whereas categories such as Electronics tend to be lower paying (ranging from 0.1% to 10%). Multiple factors can affect the commission percentage and they're too many to list.

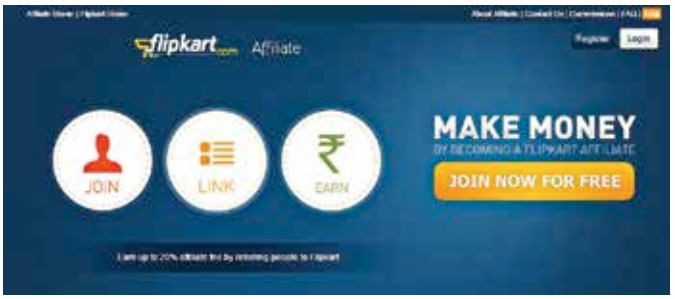
Now that you have a basic idea about how an affiliate system works, let's get on to creating an affiliate account (which is not the same as your normal shopping account). Once that's done, instead of referring other people to buy stuff, you'll refer yourself, buy the product, and get your cashback in the affiliate account. Since Flipkart is comparatively more popular, we'll guide you through this site's functions. You're free to choose any other e-commerce site also, and we're quite sure that the same trick would work there as well.

To take advantage of the system, all you need to do is to create an affiliate account at, say, http://www.flipkart.com/affiliate/ (A Google search with keywords like "site's name + affiliate" can quickly give you the link to the affiliate page of any other e-commerce site). Check the FAQs and commission percentages, complete the registration, create an affiliate link and use that to make purchases on the site.

So that's how you use the affiliate system to your advantage, and the method isn't just limited to e-commerce – you can do the same thing with other types of sites too. Just make sure that you aren't doing anything illegal and as usual, we won't be responsible if you get into trouble using this trick.

Score discounts online

At times, you may not wish to wait for a month in order to get your payouts. This is where coupon codes and deals come in handy. Getting your hands on coupon codes is much better than any deal. And the best thing is that coupon codes are available for a wide variety of websites (from shopping and food to travel and everything online). Interestingly, Flipkart doesn't accept coupons as of now and is entirely deal-based (and getting a good deal when you need it is very rare). The quickest way to find a great coupon site for your specific e-commerce site is to search with keywords like "site's name + coupons". This will definitely fetch you some good, reliable sites. Websites with a huge library of stores include www.coupondunia.in, www.couponraja.in and www.couponrani.com.



Taking advantage of afiliate programs can save you money.

Apart from using a coupon, you may also consider comparing the price of the same product in multiple e-commerce stores. Previously, this may have been a tiring task but now we've got some great sites like junglee.com and buyhatke.com which can compare the prices for you. You can then pick the store which is the cheapest.

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