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Articles





BY: Mr. Mukesh Kumar Singh, Asst. Proff., Dept. of CSE

In Indian cities alarming level of air pollution is serious concern for human society and causes health implications such as respiratory diseases, asthma, silicosis etc. According to World Health Organization Delhi is the most polluted city of the world and particulate matter (PM) is 10-16 times higher than what is considered safe. Recently Delhi government has implemented odd-even formula to check vehicular pollution complying with the order of honorable High court of Delhi to restrict such alarming level of air pollution.

We should understandwhether restriction of only vehicles will be radical solution or we should explore more options to curb air pollution. Since Delhi is most populated city as well as there is shortage of public transport. Delhi government is not the first in the world who has implemented such scheme. I am giving some citation such as in Mexico CityMexico Implemented program "your car does not circulate today". The effect of driving restriction demonstrates that there was no evidence of pollutant decline. In London United Kingdom not much successful. Bogota Colombia, Stockholm Sweden and Beijing China has already implemented and effect was people has either broken the law or it was not succeeded properly owing to lack of people's behavior change.

Now what constitute air pollution and who are major polluter. According to a report published by IIT-Kanpur major polluter of air is road dust from various source which constitute highest in both categories of PM10 and PM2.5. According to the same report Industrial point source constitute 10 % and vehicles 9% of PM10 and vehicle 20 %, domestic fuel burning 10 % and Industrial point source 10 % of PM2.5. Whatever the data is showing vehicles are not the major polluter so restricting vehicles is not enough to curb rising level of air pollution.

It is the dust and Industrial point source which are major culprit of air pollution. The key constituent of dust particles is silicone, aluminum, titanium, copper which are more fatal. Pollutant generated by solid waste management, burning of domestic fuel also playing role in quality of air.

So restricting only car is not going to bring down pollutant from air. There should be more public discourse on these issues and participation of people. Government should focus on all constituent of pollutant and should start more awareness program so that people understand the harmful effect of pollution. So that there is behavioral change in public.



FREE BASICS PROTECTS NET NEUTRALITY

THE BYTE JAN 2016

Auther: Mark Zuckerberg

In every society, there are certain basic services that are so important for people's wellbeing that we expect everyone to be able to access them freely.

We have collections of free basic books. They're called libraries. They don't contain every book, but they still provide a world of good.

We have free basic healthcare. Public hospitals don't offer every treatment, but they still save lives.

We have free basic education. Every child deserves to go to school.

And in the 21st century, everyone also deserves access to the tools and information that can help them to achieve all those other public services, and all their fundamental social and economic rights.

That's why everyone also deserves access to free basic internet services.

We know that when people have access to the internet they also get access to jobs, education, healthcare, communication. We know that for every 10 people connected to the internet, roughly one is lifted out of poverty. We know that for India to make progress, more than 1 billion people need to be connected to the internet.

That's not theory. That's fact.

Another fact – when people have access to free basic internet services, these quickly overcome the digital divide.

Research shows that the biggest barriers to connecting people are affordability and awareness of the internet. Many people can't afford to start using the internet. But even if they could, they don't necessarily know how it can change their lives.

Over the last year Facebook has worked with mobile operators, app developers and civil society to overcome these barriers in India and more than 30 other countries. We launched Free Basics, a set of basic internet services for things like education, healthcare, jobs and communication that people can use without paying for data.

More than 35 operators have launched Free Basics and 15 million people have come online. And half the people who use Free Basics to go online for the first time pay to access the full internet within 30 days.

So the data is clear. Free Basics is a bridge to the full internet and digital equality. Data from more than five years of other programs that offer free access to Facebook, WhatsApp and other services shows the same.

If we accept that everyone deserves access to the internet, then we must surely support free basic internet services. That's why more than 30 countries have recognized Free Basics as a program consistent with net neutrality and good

for consumers.

Who could possibly be against this?

Surprisingly, over the last year there's been a big debate about this in India.

Instead of wanting to give people access to some basic internet services for free, critics of the program continue to spread false claims – even if that means leaving behind a billion people.

Instead of recognizing the fact that Free Basics is opening up the whole internet, they continue to claim – falsely – that this will make the internet more like a walled garden.

Instead of welcoming Free Basics as an open platform that will partner with any telco, and allows any developer to offer services to people for free, they claim – falsely – that this will give people less choice.

Instead of recognizing that Free Basics fully respects net neutrality, they claim – falsely – the exact opposite.

A few months ago I learned about a farmer in Maharashtra called Ganesh.

Last year Ganesh started using Free Basics. He found weather information to prepare for monsoon season. He looked up commodity prices to get better deals. Now Ganesh is investing in new crops and livestock.

Critics of free basic internet services should remember that everything we're doing is about serving people like Ganesh. This isn't about Facebook's commercial interests – there aren't even any ads in the version of Facebook in Free Basics. If people lose access to free basic services they will simply lose access to the opportunities offered by the internet today.

Right now the TRAI is inviting the public to help decide whether free basic internet services should be offered in India.

For those who care about India's future, it's worth answering some questions to determine what is best for the unconnected in India.

What reason is there for denying people free access to vital services for communication, education, healthcare, employment, farming and women's rights?

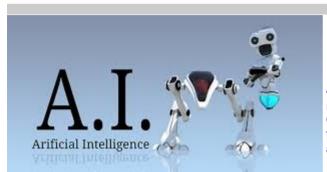
How does Ganesh being able to better tend his crops hurt the internet?

We've heard legitimate concerns in the past, and we've quickly addressed those. We're open to other approaches and encourage innovation. But today this program is creating huge benefits for people and the entire internet ecosystem. There's no valid basis for denying people the choice to use Free Basics, and that's what thousands of people across India have chosen to tell TRAI over the last few weeks.

Choose facts over false claims. Everyone deserves access to the internet. Free basic internet services can help achieve this. Free Basics should stay to help achieve digital equality for India.

THE BYTE

Investing In Artificial Intelligence



Artificial intelligence is one of the most exciting and transformative opportunities of our time. From my vantage point as a venture investor at Playfair Capital, where I focus on investing and building community around AI, I see this as a great time for investors to help build companies in this space. There are three key reasons.

By: TechCrunch

First, with 40 percent of the world's population now online, and more than 2 billion smartphones being used with increasing addiction every day (KPCB), we're creating data assets, the raw material for AI, that describe our behaviors, interests, knowledge, connections and activities at a level of granularity that has never existed.

Second, the costs of compute and storage are both plummeting by orders of magnitude, while the computational capacity of today's processors is growing, making Al applications possible and affordable.

Third, we've seen significant improvements recently in the design of learning systems, architectures and software infrastructure that, together, promise to further accelerate the speed of innovation. Indeed, we don't fully appreciate what tomorrow will look and feel like.

We also must realize that Al-driven products are already out in the wild, improving the performance of search engines, recommender systems (e.g., e-commerce, music), ad serving and financial trading (amongst others).

Companies with the resources to invest in AI are already creating an impetus for others to follow suit — or risk not having a competitive seat at the table. Together, therefore, the community has a better understanding and is equipped with more capable tools with which to build learning systems for a wide range of increasingly complex tasks.

How Might You Apply AI Technologies?

With such a powerful and generally applicable technology, Al companies can enter the market in different ways. Here are six to consider, along with example businesses that have chosen these routes:

There are vast amounts of enterprise and open data available in various data silos, whether web or on-premise. Making connections between these enables a holistic view of a complex problem, from which new insights can be identified and used to make predictions (e.g., DueDil*, Premise and Enigma).

Leverage the domain expertise of your team and address a focused, high-value, recurring problem using a set of AI techniques that extend the shortfalls of humans (e.g., Sift Science or Ravelin* for online fraud detection).

Productize existing or new Al frameworks for feature engineering, hyperparameter optimization, data processing, algorithms, model training and deployment (amongst others) for a wide variety of commercial problems (e.g., H2O.ai, Seldon* and SigOpt).

Automate the repetitive, structured, error-prone and slow processes conducted by knowledge workers on a daily basis using contextual decision making (e.g., Gluru, x.ai and SwiftKey).

Endow robots and autonomous agents with the ability to sense, learn and make decisions within a physical environment (e.g., Tesla, Matternet and SkyCatch).

Take the long view and focus on research and development (R&D) to take risks that would otherwise be relegated to academia — but due to strict budgets, often isn't anymore (e.g., DNN Research, DeepMind and Vicarious).

There's more on this discussion here. A key consideration, however, is that the open sourcing of technologies by large incumbents (Google, Microsoft, Intel, IBM) and the range of companies productizing technologies for cheap means that technical barriers are eroding fast. What ends up moving the needle are proprietary data access/creation, experienced talent and addictive products.

Which Challenges Are Faced By Operators And Closely Considered By Investors?

I see a range of operational, commercial and financial challenges that operators and investors closely consider when working in the AI space. Here are the main points to keep top of mind:

Operational

How to balance the longer-term R&D route with monetization in the short term? While more libraries and frameworks are being released, there's still significant upfront investment to be made before product performance is acceptable. Users will often be benchmarking against a result produced by a human, so that's what you're competing against.

The talent pool is shallow: few have the right blend of skills and experience. How will you source and retain talent?

Think about balancing engineering with product research and design early on. Working on aesthetics and experience as an afterthought is tantamount to slapping lipstick onto a pig. It'll still be a pig.

Most AI systems need data to be useful. How do you bootstrap your system w/o much data in the early days?

Commercial

AI products are still relatively new in the market. As such, buyers are likely to be non-technical (or not have enough domain knowledge to understand the guts of what you do). They might also be new buyers of the product you sell. Hence, you must closely appreciate the steps/hurdles in the sales cycle.

How to deliver the product? SaaS, API, open source?

Include chargeable consulting, set up, or support services?

Will you be able to use high-level learnings from client data for others?

Financial

Which type of investors are in the best position to appraise your business?

What progress is deemed investable? MVP, publications, open source community of users or recurring revenue?

Should you focus on core product development or work closely on bespoke projects with clients along the way?

Consider buffers when raising capital to ensure that you're not going out to market again before you've reached a significant milestone.

Build With The User In The Loop

There are two big factors that make involving the user in an AI-driven product paramount. One, machines don't yet recapitulate human cognition. To pick up where software falls short, we need to call on the user for help. And two, buyers/users of software products have more choice today than ever. As such, they're often fickle (the average 90-day retention for apps is 35 percent).

Returning expected value out of the box is key to building habits (hyperparameter optimization can help). Here are some great examples of products that prove that involving the user in the loop improves performance:

Search: Google uses autocomplete as a way of understanding and disambiguating language/query intent.

Vision: Google Translate or Mapillary traffic sign detection enable the user to correct results.

Translation: Unbabel community translators perfect machine transcripts.

Email Spam Filters: Google, again, to the rescue.

We can even go a step further, I think, by explaining how machine-generated results are obtained. For example, IBM Watson surfaces relevant literature when supporting a patient diagnosis in the oncology clinic. Doing so improves user satisfaction and helps build confidence in the system to encourage longer-term use and investment. Remember, it's generally hard for us to trust something we don't truly understand.

What's The AI Investment Climate Like These Days?

To put this discussion into context, let's first look at the global VC market: Q1-Q3 2015 saw \$47.2 billion invested, a volume higher than each of the full year totals for 17 of the last 20 years (NVCA).

We're likely to breach \$55 billion by year's end. There are roughly 900 companies working in the AI field, most of which tackle problems in business intelligence, finance and security. Q4 2014 saw a flurry of deals into AI companies started by well-respected and achieved academics: Vicarious, Scaled Inference, MetaMind and Sentient Technologies.

So far, we've seen about 300 deals into AI companies (defined as businesses whose description includes such keywords as artificial intelligence, machine learning, computer vision, NLP, data science, neural network, deep learning) from January 1, 2015 through December 1, 2015 (CB Insights).

In the U.K., companies like Ravelin*, Signal and Gluru* raised seed rounds. approximately \$2 billion was invested, albeit bloated by large venture debt or credit lines for consumer/business loan providers Avant (\$339 million debt+credit), ZestFinance (\$150 million debt), LiftForward (\$250 million credit) and Argon Credit (\$75 million credit). Importantly, 80 percent of deals were < \$5 million in

size, and 90 percent of the cash was invested into U.S. companies versus 13 percent in Europe. Seventy-five percent of rounds were in the U.S.

Financing and exit markets for AI companies are still nascent.

The exit market has seen 33 M&A transactions and 1 IPO. Six events were for European companies, 1 in Asia and the rest were accounted for by American companies. The largest transactions were TellApart/Twitter (\$532 million; \$17 million raised), Elastica/Blue Coat Systems (\$280 million; \$45 million raised) and SupersonicAds/IronSource (\$150 million; \$21 million raised), which return solid multiples of invested capital. The remaining transactions were mostly for talent, given that median team size at the time of the acquisition was 7 people.

Altogether, AI investments will have accounted for roughly 5 percent of total VC investments for 2015. That's higher than the 2 percent claimed in 2013, but still tracking far behind competing categories like adtech, mobile and BI software.

The key takeaway points are a) the financing and exit markets for AI companies are still nascent, as exemplified by the small rounds and low deal volumes, and b) the vast majority of activity takes place in the U.S. Businesses must therefore have exposure to this market.

Which Problems Remain To Be Solved?

Healthcare

I spent a number of summers in university and three years in grad school researching the genetic factors governing the spread of cancer around the body. A key takeaway I left with is the following: therapeutic development is very challenging, expensive, lengthy and regulated, and ultimately offers a transient solution to treating disease.

Instead, I truly believe that what we need to improve healthcare outcomes is granular and longitudinal monitoring of physiology and lifestyle. This should enable early detection of health conditions in near real time, driving down cost of care over a patient's lifetime while consequently improving outcomes.

Consider the digitally connected lifestyles we lead today. The devices some of us interact with on a daily basis are able to track our movements, vital signs, exercise, sleep and even reproductive health. We're disconnected for fewer hours of the day than we're online, and I think we're less apprehensive to storing various data types in the cloud (where they can be accessed, with consent, by third-parties). Sure, the news might paint a different story, but the fact is that we're still using the web and its wealth of products.

On a population level, therefore, we have the chance to interrogate data sets that have never before existed. From these, we could glean insights into how nature and nurture influence the genesis and development of disease. That's huge.

AI-driven products are already out in the wild.

Look at today's clinical model. A patient presents into the hospital when they feel something is wrong. The doctor must conduct a battery of tests to derive a diagnosis. These tests address a single (often late-stage) time point, at which moment little can be done to reverse damage (e.g., in the case of cancer).

Now imagine the future. In a world of continuous, non-invasive monitoring of physiology and lifestyle, we could predict disease onset and outcome, understand which condition a patient likely suffers from and how they'll respond to various therapeutic modalities. There are loads of applications for artificial intelligence here: intelligence sensors, signal processing, anomaly detection, multivariate classifiers, deep learning on molecular interactions...

Some companies are already hacking away at this problem:

Sano: Continuously monitor biomarkers in blood using sensors and software.

Enlitic/MetaMind/Zebra Medical: Vision systems for decision support (MRI/CT).

Deep Genomics/Atomwise: Learn, model and predict how genetic variation influence health/disease and how drugs can be repurposed for new conditions.

Flatiron Health: Common technology infrastructure for clinics and hospitals to process oncology data generated from research.

Google: Filed a patent covering an invention for drawing blood without a needle. This is a small step toward wearable sampling devices.

A point worth noting is that the U.K. has a slight leg up on the data access front. Initiatives like the U.K. Biobank (500,000 patient records), Genomics England (100,000 genomes sequenced), HipSci (stem cells) and the NHS care data program are leading the way in creating centralized data repositories for public health and therapeutic research.

Enterprise Automation

Could businesses ever conceivably run themselves? AI-enabled automation of knowledge work could cut employment costs by \$9 trillion by 2020 (BAML). Coupled with the efficiency gains worth \$1.9 trillion driven by robots, I reckon there's a chance for near-complete automation of core, repetitive businesses functions in the future.

Think of all the productized SaaS tools that are available off the shelf for CRM, marketing, billing/payments, logistics, web development, customer interactions, finance, hiring and BI. Then consider tools like Zapier or Tray.io, which help connect applications and program business logic. These could be further expanded by leveraging contextual data points that inform decision making.

Perhaps we could eventually re-image the new eBay, where you'll have fully automated inventory procurement, pricing, listing generation, translation, recommendations, transaction processing, customer interaction, packaging, fulfillment and shipping. Of course, this is probably a ways off.

Artificial intelligence is one of the most exciting and transformative opportunities of our time.

I'm bullish on the value to be created with artificial intelligence across our personal and professional lives. I think there's currently low VC risk tolerance for this sector, especially given shortening investment horizons for value to be created. More support is needed for companies driving long-term innovation, especially considering that far less is occurring within universities. VC was born to fund moonshots.

We must remember that access to technology will, over time, become commoditized. It's therefore key to understand your use case, your user, the value you bring and how it's experienced and assessed. This gets to the point of finding a strategy to build a sustainable advantage such that others find it hard to replicate your offering.

Aspects of this strategy may in fact be non-AI and non-technical in nature (e.g., the user experience layer). As such, there's renewed focus on core principles: build a solution to an unsolved/poorly served high-value, persistent problem for consumers or businesses.

Finally, you must have exposure to the U.S. market, where the lion's share of value is created and realized. We have an opportunity to catalyze the growth of the AI sector in Europe, but not without keeping close tabs on what works/doesn't work across the pond.





JAN, 2016

The Anonymous Hackers group: About

The Anonymous Hackers group Guy Fawkes mask has become one of the most recognisable emblems of the internet age.

But what is the motivation of the hackers and activists who choose to don this ominous disguise? Unfortunately, there is no clear and simple answer for this question, because The Anonymous Hackers group is not a group that can be defined in the traditional sense or any other.

The Anonymous Hackers group is made up of tens or may be possibly hundreds of thousands of supporters from any variety of backgrounds and often with totally different motivations.

There is only things that truly unite this disparate group(The Anonymous) are the need to remain "The anonymous", the spooky mask worn by most supporters, and the repeated use of the tagline: "We are Anonymous. We are Legion. We do not forgive. We do not forget. Expect us" that is the tagline of The Anonymous Hackers group. There is no central command or any Head, which means there is no unified consensus or direction. It has no leaders no Head, let alone anyone who can speak on behalf of the entire community of the Anonymous group.

So the question is who are The anonymous – or what The anonymous – is the Anonymous?



Where does The Anonymous come from?

The famed hacktivist group is a true and pure product of the internet, having formed around the message board 4Chan. Members guard their identity jealously, often referring to themselves using the name "Anon" the nick name.

Does The Anonymous have a political agenda?

Anonymous declare war on Islamic State after Paris attacks, The war between Anonymous vs ISIS. This depends on who you ask, because each member of Anonymous is free to follow their own ideology and the plan.

How powerful are The Anonymous?

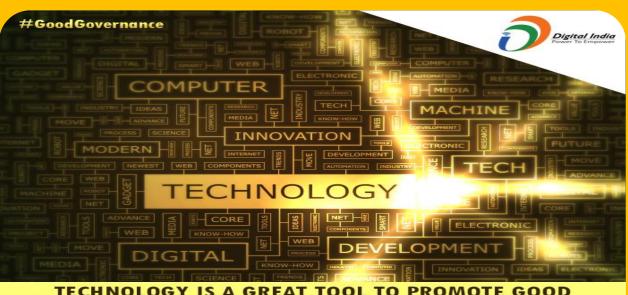
They are not going to bring down a fully fledged nation state, but the Anonymous can certainly pack a punch. They wield weapons capable of knocking websites off or down the internet as well as the hacking skills to expose people's real identity – a tactic called "doxxing".

During the battle with ISIS(The war between Anonymous vs ISIS), the most important role they could play is unmasking people carrying out online recruitment, which then allows police to arrest them.

Sometimes, Anonymous supporters gather in the real world for events including the "Million Mask March" held in cities around the hole world.



Latest Technology



TECHNOLOGY IS A GREAT TOOL TO PROMOTE GOOD GOVERNANCE. IT CAN BRIDGE THE DIVIDE BETWEEN THE GOVERNMENT AND THE CITIZENS.

#DIGITALINDIA

#DIGITALINDIA

THE GOVERNMENT AND THE CITIZENS.

THE BYTE JAN 2016

A BIG FIRST STEP TOWARD REUSABLE ROCKETS

If SpaceX can routinely reuse rockets, that may force change in the whole private space industry. SpaceX CEO Musk noted that it costs \$16 million to manufacture the Falcon 9, but only \$200,000 to fuel. Eliminating a \$16 million expense could drastically bring down launch costs. Competing launch providers may have to explore reusable rockets as well to compete with SpaceX on future contracts.

SpaceX's Falcon 9 rocket successfully landed upright on solid ground at Cape Canaveral, Florida this evening, after traveling into space and back. It's the first time SpaceX has been able to gently touch down the Falcon 9 post-launch — something the company has been trying to do for the past year. It's a big first step toward reusable rockets.

This launch was also the first time SpaceX has flown since June, after one of its Falcon 9 rockets exploded en route to the International Space Station. Now this return-to-flight mission has made history — no one else has ever landed a rocket that has gone as deep into space as the Falcon 9.the right to short-list applications and to fix cut off percentage without assigning any reason. No communication will be entertained on this account.(b) SSB interviews for Short-listed candidates will be scheduled during December - April 2016 at Bangalore, Bhopal, Visakhapatnam or Coimbatore.

As big as this is for SpaceX, it's not the first time a vertical take-off rocket has landed upright after launching into space. In November, Jeff Bezos' private spaceflight company Blue Origin announced that it had landed its rocket New Shepard post-launch. SpaceX's Falcon 9 rocket is more complex than New Shepard: it's designed to go higher in space, and much faster. Both accomplishments suggest the shape of things to come, says Charles Miller, president of NexGenSpace, a spaceflight consulting firm. "I think it's very clear the future is reusable space, and the rest of the world is playing catch up to the innovation that's taking place in America's space entrepreneurs," said Miller. Right now, all rockets that travel into orbit are either destroyed or lost after taking off. It's something that drives up the cost of spaceflight; an entirely new rocket must be built for each launch. But if SpaceX can routinely reuse its rockets, the company saves the cost of manufacturing new vehicles for follow-up missions. That could make spaceflight a lot more affordable. SpaceX has tried this landing twice before.

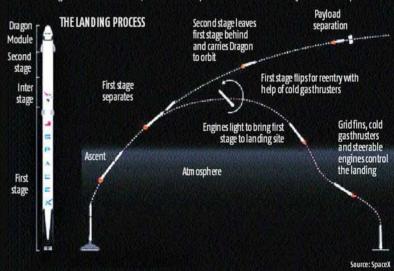
In January and April, the company attempted to land the first stage of the Falcon 9 — a 14-story tall portion of the rocket body — on a floating platform out at sea. The rockets fell over and exploded both times.

Since those two attempts, SpaceX has modified some things. The most obvious change is that today's landing was on solid ground, rather than at sea — a floating ship is a smaller and more unpredictable target. That's not all, though. SpaceX introduced an updated version of the Falcon 9, informally named the Falcon 9 v1.1 Full Thrust. This version of the rocket has a modified structure



FALCON 9 ROCKET LANDING

SpaceX Falcon 9 rocket blasted off from Florida on Monday with a payload of communications satellites before the reusable main stage booster turned around, soared back to Cape Canaveral and landed safely near its launch pad.



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"Google's Dart Programming Language Is Coming To The Server"

A few days ago at its I/O developer conference, Google quietly announced that it is working on bringing its Dart programming language to App Engine soon.

This implementation will use the company's recently launched managed virtual machines and the service's custom runtime support. Because custom runtime support is still in private beta, however, the Dart team isn't able to release this to the public just yet, but Google provided a sneak peek to Dart developers at I/O of what this would look like.

Most developers look at Dart as a JavaScript competitor. In many ways, that's fair, given that it is clearly geared toward similar use cases and that Google offers a version of its Chrome browser with the Dart virtual machine built-in. Google also offers a Dart-to-JavaScript compiler and plenty of tools for web developers. The ambition behind Dart is much bigger, though, so it maybe shouldn't have been a surprise that the team is bringing its runtime to App Engine and other servers, as well.

I was able to sit down with Lars Bak and Kasper Lund, the two Danes who together invented Dart (Bak also developed Google's V8

the news and the state of Dart - and its

JavaScript engine), to chat about future — in general.

They noted that the original idea eral purpose programming lanthey didn't just want to create to create a dynamically typed lanpretty easily and that would in-Because of this, the team always accessible, but also on the other tive in a language. These include Dart and a large number libraries team also recently launched a defor Android that has built-in Dart Editor comes with a number of programs during runtime. At I/O, nicely with Google's Polymer web Design user interface language.

At I/O, Google announced that



behind Dart was always to create a genguage. When they started the project, some variant of JavaScript. The idea was guage that developers could pick up crease developer productivity.

focused not just on making the language tools that developer need to be producthe Dart Editor, the main IDE for that extend the language. In addition, the veloper version of the Chrome browser support. Lund also noted that the Dart tools that help developers monitor their the team also showed how Dart can play components project and its new Material

developers can now also deploy Dart on

its Compute Engine infrastructure using Docker, but by also soon supporting it on App Engine, developers get easier access to Google's Data Store, cloud monitoring services and caching services.

The other thing Dart developers have long been asking for is built-in Dart support in Chrome. When I asked Bak about this, he gave me a knowing smile and said that the team would have more to announce about this soon. Built-in support in Chrome would obviously give Dart a major boost. While the Dart-to-JavaScript compiler works very well, the Dart VM can execute the code significantly faster. It would also give developers a bigger incentive to pick up Dart, given that Google isn't likely to remove Dart support from its browser once it has included it.

Looking ahead, Bak told me that the team is also looking at how it can bring asynchronous code to Dart through concepts similar to JavaScript's asyn/await.

Since the team launched Dart 1.0, it has also worked on creating an Ecma standard for Dart (just like JavaScript is based on the EcmaScript standard). As Bak argued, no good programming language has ever been created by committee, so it was important for Google to get Dart to the 1.0 milestone before it started this process. Now, however, it wants to involve other industry players, too, and the team hopes that other browser will integrate it.

Being able to write both the front-end and back-end code in the same language is something the Dart team believes will make for more stable code and will make it easier for developer teams to work together.



LITCRARY



THE BYTE JAN 2016





"Yada yada hi dharmasaya
Glanir bhavati bharata
Abhyutthanam adharmasya
Tadatmanam srjamyaham"

BY: Vedansh Sharma
B.Tech I.T 2nd year

Hey *Bharata* (*Arjuna*). It is faith which teaches Renunciation (rejection) and is responsible for the elevation and wellbeing of human beings.

The above lines have been taken from the holy book of Hindus that is Gita. In which Lord Krishna refers to *Dharma* (Religion) in progressively in deeper ways, shedding light on the meaning of the term and its importance for personal spiritual growth.

The word 'Religion' is derived from *Latin* word '*Ligare*' means 'to bind'. In spite of getting to learn that much about Religion one must first define the meaning of Religion and whether it is something that fits in our lives. A Religion is a philosophy based on spiritual beliefs. It aim to dictate a canon that would help to heal the spiritual side of the individual and eventually, it will permeate into the dynamics of life.

This being said, a religion may only be important for those who

- ✓ Believe in that there is such a thing as spiritual needs.
- ✓ Need some form of moral or emotional support to enhance their lives

In one way in material terms, this present generation has reached a high level of development. Yet at the same time, we human beings are facing many problems. Some are due to external events or causes, such as natural disaster. Thus we cannot avoid. However many problems are created by our own mental defects; we suffer due too internal lack. I call these problems unnecessary ones, if we adopt a right mental attitude, these man-made problems need not arise. Now these are the issues which certainly give rise to Faith and Religion in Human mind.

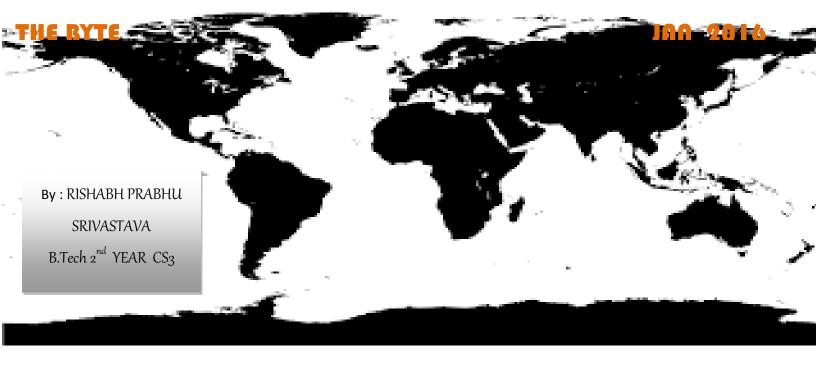
The vast majority of the world's around 7 billon people practice some kind of Religion ranging from massive worldwide churches to observe spiritual tradition and local sects. Nobody really knows how many Religion there exist on the planet, but whatever be the number, there are at least that many theories about why we have Religion at all?

Now the only thing I can say is it completely depends on our own believes and faith which keeps us secured from the 'Mighty' surroundings.

This can be concluded with the following lines:

"Anyone who thinks sitting in church can make you a Christian,

Must also think that sitting in a garage can make you a car."



THIS WORLD NEEDS A CHANGE

it's a world that only cry, no one in it gives a try, to change the things that pricks, to change the human avarice tricks, no matter how much we are hurt, we dare not in anger take out our shirt, the world is full of such things, remains the all time excuse, that we find always for our power's misuse, "I AM NOT THE ONE WHO CAN DO", we think always and take back our shoe, but this world at any cost needs a change, this is the fact, though it is strange, you do or 1, doesn't matter, but this present ridiculous behaviour needs to be shatter, without it NO PEACE can reside, only CRIME and VIOLENCE will grow side by side...



Q & A



JAN 2016

Privacy & Security on the Internet with these Tools



All across the web companies are collecting

information about you whether you like it or not. Knowing which companies are more trustworthy with your information than others and how to keep yourself as safe as possible on the internet is important. If you aren't sure whether websites that you use are making the grade then check them out yourself. Surprisingly to most, when you log in to most mobile or web applications, at least 15 pieces of information are sent in every which direction. Don't let companies take advantage of your unawareness – take action! If you catch them claiming one thing, but in reality doing another, get justice by reporting the company to the Federal Trade Commission.



5. Infoencrypt, SafeGmail, Hushmail or Lockbin

Infoencrypt, SafeGmail, Hushmail or Lockbin – use these free services to send all of your emails encrypted.

6. Verisign Trust Seal



Run by Symantec, look for the Verisign Trust Seal of approval on websites which ensures SSL encryption.



1. Mitmproxy

Using Mitmproxy, a free "behind the scenes" tool, you can do some investigation to find out whether a company collects more information about you than you would expect or if it sends your information insecurely.



2. PrivacyGrade

PrivacyGrade is a website that allows you to see how robust a company's mobile application is at protecting your privacy.





AppAnnie gives you metrics about mobile applications and has some good aggregate statistics about sharing policies of different application industries which you could use to evaluate whether a mobile application you're using shares too much information relative to the average company in that sector.



4. TRUSTe

Look for TRUSTe's seal of approval as it provides companies with data privacy management solutions.



Computer Facts

Computer basically stands for Commonly Operated Machine Particularly used for Technology and Research. Here are some facts about computer. So, lets get started with number one.

- Computer Fact 1: Radio and television took 38 years and 13 years respectively to reach people, while World Wide Web took only 4 years to reach 50 million users.
- Computer Fact 2: One of every 8 married couples in the US met online.
- Computer Facts 3: There are approx. 1.06 billion instant messaging (IM) accounts worldwide.
- Computer Fact 4: Doug Engelbart invented the first computer mouse in 1964 and was made of wood.
- Computer Facts 5: "Stewardesses", the longest word that is typed with only left hand.
- Computer Facts 6: First HDD for computer was introduced by Seagate in 1979, a 5 MB HDD.
- Computer Fact 7: E-mail has been around longer than World Wide Web or www.
- Computer Facts 8: The average computer user blinks 7 times a minute, less than half the normal rate of 20.
- Computer Fact 9: In 2012 over 17 billion devices connected to the Internet.
- Computer Fact 10: The world's top 10 most intelligent and sophisticated computer run on LINUX.
- Computer Facts 11: Bill Gates House was designed using a Macintosh Computer.
- Computer Fact 12: If you type "illuminati" backward i.e. "itanimulli" and add .com after it, you'll end up at the US gov. NSA page.
- Computer Facts Do it don't wait.
- Computer Facts 13: "TYPEWRITER" is the longest word that can be made using the letter only on one row of the keyboard.
- Computer Facts 14: Committed to focusing on comsumer electronics, APPLE dropped the word "COMPUTER" from its logo with the introduction of the first iPhone.
- Computer Fact 15: Computer programs are the most complicated structures created by man.
- Computer Fact 16: 300 million photos are uploaded to the biggest social media website FACEBOOK, every day.
- 3.2 billion LIKES and COMMENTS are posted daily on Facebook. Facebook pays \$500 to anyone who hacks it. To be a programmer you should be good at math.
- Computer Facts 17: Darknet and deepweb are not the same thing.
- Computer Facts 18: The first domain name ever registered was Symbolics.com
- Computer Fact 19: In 2005 Chris Putnum wrote a computer virus that rapidly spread across Facebook. The virus' effect was make Facebook users' profiles look like MySpace profiles. But instead of having him arrested, Facebook hired him.
- Computer Fact 20: You are 3 times more likely to get a virus from a church websites that you are from a pornography website. LOL!
- Computer Fact 21: In 2000 the Pokémon virus was a computer virus launching a bouncing Pikachu on screen, while stealing information secretly from the user's system.
- Computer Fact 22: Apollo 11 was landed on the moon using a computer that had 1,300 times less processing power than iPhone 5s.
- Computer Fact 23: Having a strong password actually can prevent most attacks.



JOB

Opportunities

Job Opportunities

Job Opportunities





RAILWAY JOBS

THE BYTE JAN 2016



GOVERNMENT OF INDIA, MINISTRY OF RAILWAYS RAILWAY RECRUITMENT BOARDS



INDICATIVE CENTRALISED EMPLOYMENT NOTICE NO.: 03/2015

DATE OF PUBLICATION: 26 DECEMBER, 2015

DATE OF CLOSING: 25 JANUARY, 2016 (UP TO 23.59 HRS)

ONLINE applications are invited from eligible Indian Nationals for filling up the following Non Technical Popular Categories (Graduate) posts of various Zonal Railways / Production Units on Indian Railways : WWW.INDGOVTJOBS.IN

CANDIDATES ARE REQUIRED TO APPLY ONLY THROUGH ONLINE MODE. NO OTHER MODE FOR SUBMISSION OF APPLICATION IS ALLOWED

Category No.	Name of the posts	Number of vacancies	Name of participating Railway Recruitment Boards
1	Commercial Apprentice	703	Ahmedabad, Ajmer, Allahabad, Bangalore, Bhopal, Bhubaneswar, Bilaspur, Chandigarh, Chennai, Gorakhpur, Guwahati, Jammu-Srinagar, Kolkata, Malda, Mumbai, Muzaffarpur, Patna, Ranchi, Secunderabad, Siliguri, Thiruvananthapuram
2	Traffic Apprentice	1645	
3	Enquiry-cum-Reservation Clerk	127	
4	Goods Guard	7591	
5	Junior Accounts Assistant-cum-Typist	1205	
6	Senior Clerk-cum-Typist	869	
7	Assistant Station Master	5942	
8	Traffic Assistant	166	
9	Senior Time Keeper	4	
	Total	18252	

Dates/Slot of Common Computer Based Test: MARCH-MAY, 2016

The advertisement giving details regarding number of vacancies (Railway / Production unit wise & RRB-wise), reservation for SC / ST / OBC / Ex-Servicemen / PWD, eligibility criteria, examination fee, mode of examination, age relaxation, General Instructions, Terms & Conditions and prescribed formats will be notified by the Railway Recruitment Boards in the Centralised Employment Notice No.03/2015 and the same will be published in the **26th December**, **2015** edition of Employment News / Rojgar Samachar (English/Hindi/Urdu). The detailed notification is also available on the website of all participating RRBs at the website addresses given in Para 16 of CEN-03/2015.

This notification is purely of indicative nature. For full details, the applicants are advised to go through the CEN No. 03/2015 referred above thoroughly before filling up the ONLINE application.

Notice No. 13/15

Date: 21.12.2015

Chairpersons, Railway Recruitment Boards



Official Notice from DOPT regarding Discontinuation of Interview at Non-Executive posts

Immediate

No. 39020/01/2013-Estt (B)-Part
Government of India
Ministry of Personnel, Public Grievances and Pensions
(Department of Personnel and Training)

North Block, New Delhi. Dated the 29th December, 2015

OFFICE MEMORANDUM

Subject:- Discontinuation of Interview at Junior Level Posts in the Government of India- recommendation of Committee of Secretaries.

The undersigned is directed to refer to this Department's D.O. of even number dated 04.09.2015 and subsequent OM's dated 09th October, 2015, 09th November, 2015 on the above subject seeking detailed information on the progress made/action taken in the matter.

- 2. It is informed that Secretary (Personnel) had convened meetings on 14th December, 2015 and 17th December, 2015 to review the progress of implementation of the "No Interview Requirement Proposal" and to get the updated status on the decision/progress made by the various Ministries/Departments. Keeping in view the queries raised by the representative of various Ministries/Departments the following is once again clarified:-
 - (a) The decision to discontinue interview for recruitments is for all Group 'C', Group 'D' (which are now reclassified as Group 'C') Posts and for nongazetted posts of Group 'B' Category and all such equivalent posts.
 - (b) The 'No Interview Requirement" proposal has to be implemented for all the junior level posts in Government of India Ministries/Departments/attached Office/Subordinate Office/Autonomous Bodies/Public Sector Undertakings.
 - (c) Instructions issued by the Department of Public Enterprises on 14th December, 2015 vide OM No. DPE-GM to all Administrative Ministries concerned with CPSES under them with advice to dispense with the practice of interview (copy enclosed).
 - (d) The timelines set regarding completing the process of the discontinuation of interview by 31.12.2015 has to be adhered to strictly. From 01st January, 2016 there will be no recruitment with interview at the junior level posts as mentioned at 2(a) above, in Government of India Ministries/Departments/attached Office/Subordinate Office/Autonomous Bodies/Public Sector Undertakings. All the advertisement for future vacancies will be without the Interview as part of the recruitment process.



Official Notice from DOPT regarding Discontinuation of Interview at Non-Executive posts

-2-

- (e) The interviews will be done away even in cases where in the past the selections used to be made purely on the basis of performance in the interview. The Ministries/Departments/Organizations' will consider revising the scheme for selection for such cases.
- (f) It is also clarified that as Skill Test or Physical Test is different from Interview, and they may continue. However, these tests will only be of qualifying nature. Assessment will not be done on the basis of marks for such tests.
- (g) In case of specific posts where the Ministry/Departments wants to continue undertaking Interview as a process of recruitment, a detailed proposal seeking exemption will have to be sent to the DoPT with the approval of the Minister/Minister In-Charge.
- 3. All the Central Ministries/Departments are therefore requested to ensure that necessary action in respect of their Ministry/Department/Organizations are completed within the stipulated time. A consolidated report with the details of the decision taken/progress made in this regard should also be furnished to this Department at the earliest and not later than 7th January, 2016. Report so to be furnished with the approval of the Minister/Minister In-Charge shall include the details of the name and number of posts where the interview is discontinued and posts for which the exemption has been sought within the purview of the administrative Ministries/Departments.
- 4. A soft copy of the consolidated information may also be sent to this Department at sumita.singh@nic.in

(Manisha Bhatnagar)
Under Secretary to the Government of India

Tel. No. 23093175

THE BYTE JAN 2016



Current Affairs









BY: Mukesh Kr. Singh, Asst. Proff., Dept. Of CSE

1st December: World AIDS Day

Every year on 1st December World Acquired ImmunoDeficiency Syndrome (AIDS) Day is being observed to raise awareness of the pandemic caused by the spread of human immunodeficiency virus (HIV) infection. It also seeks to remember those who have died of the disease by mourning. The theme for year 2015 is 'Getting to zero, End AIDS by 2030'.

Anil Kumble resigns as chief mentor of Mumbai Indians

Former Indian Test Captain and ace spinner Anil Kumble has resigned as the Chief Mentor of Indian Premier League (IPL) franchise Mumbai Indians with an immediate effect. His decision follows after Board for Control of Cricket in India (BCCI) crackdown on conflict of interest in the board. Earlier in November 2015, Indian cricket team director Ravi Shastri was removed from the IPL Governing Council and selector Roger Binny was asked to leave.

Union Government launches IPV injection as part of global polio endgame strategy

The Union Government has launched inactivated polio vaccine (IPV) injection as part of the global polio endgame strategy in New Delhi. The vaccine was launched by the Union Minister of Health and Family Welfare J P Nadda in New Delhi. It was launched as part of India's next step in Universal Immunization Programme (UIP) to fight against polio virus in the country. IPV injections do not contain an attenuated vaccine virus which is used in oral polio vaccine (OPV). Thus it reduces the chances of Vaccine Derived Polio Virus (VDPV).

India ranks 131 on global ICT Development Index: MISR Report

India has been ranked 131 out of 167 nations on ICT Development Index (IDI) that measures the level of information and communication technology access. It was revealed in UN International Telecommunications Union's (ITU) flagship annual Measuring the Information Society (MISR) Report.

India, France launched International Solar Alliance

India and France have launched International Solar Alliance (ISA) at the Conference of Parties (CoP21) Climate Conference in Paris, France. It was jointly by Prime Minister Narendra Modi and French President Francois Hollande in presence UN General Secretary Ban Ki-moon. The idea of alliance was mooted by Indian PM Narendra Modi to harness solar power as a major step to mitigate carbon gas emissions.

Union Government launches GIAN Scheme to boost higher education

Union Ministry of Human Resource Development (HRD) has launched Global Initiative of Academic Networks (GIAN) Scheme to boost the quality of higher education in India. It was launched by Union HRD Minister Smriti Irani at the Indian Institute of Technology (IIT) campus.

Government gives nod to MoU between India and Israel in the field of water resources

he Union Cabinet has given its approval for signing MoU between India and Israel in the field of water resources management and development cooperation. The bilateral cooperation between both countries will benefit them in strengthening the techniques in efficient use of water, micro-irrigation. It would also help them in recycling and re-use of waste water, aquifer recharge, desalination and in-situ water conservation techniques.

Justice T. S. Thakur sworn in as 43rd Chief Justice of India

Justice Tirath Singh Thakur was sworn in as 43rd Chief Justice of India (CJI). He was administered oath to the office by President Pranab Mukherjee at Rashtrapati Bhavan, New Delhi. Justice Thakur succeeded incumbent Justice H L Dattu who retired on 2 December 2015 and shall have the tenure till 4 January 2017 i.e. till he attains 65 age.

Union Cabinet gives nod to establish 6 new IITs

The Union Cabinet has approved proposal of setting up of 6 new Indian Institutes of Technology (IITs) across the country. The 6 new IITs would be set up in Andhra Pradesh, Chhattisgarh, Goa, Jammu and Kashmir, Kerala and Karnataka.

First India International Science Festival begins at IIT-Delhi

The first India International Science Festival (IISF) has begun at the Indian Institute of Technology (IIT)-Delhi campus. It has been organised by Union Ministry of Science and Technology. The IISF is expected to be the country's biggest ever Technology and Industrial Expo. Around 4,000 delegates from India and abroad are expected to take part in the festival.

Paris Pact on Water and Climate Change Adaptation announced

Paris Pact on Water and Climate Change Adaptation has been announced by a broad coalition of nations, river basin organizations, business and civil societies from across the globe. It was announced during the on-going 2015 United Nations Climate Change Conference, Conference of Parties (COP-21) in Le Bourget, Paris, France. The announcement was made as part of the Water Resilience Focus event under the Lima to Paris Action Agenda (LPAA) on climate change.

Uttar Pradesh Government launches first International festival on Birds

Uttar Pradesh Government has launched International festival on Birds in a bid to promote state as an international bird-watching destination. The first-of-its-kind festival was inaugurated by Chief Minister Akhilesh Yadav at the National Chambal Sanctuary (NCS). It has been jointly organised by the State Forest department in collaboration with Federation of Indian Chambers of Commerce & Industry (FICCI). The three-day international festival (from 4 to 6 December 2015) on birds will be held the National Chambal Sanctuary (NCS) in Agra. Over 80 Indian ornithlogists and around 25 top international bird experts and are participating in the first-of-its-kind festival. Himachal Pradesh becomes first State to launch Rotavirus vaccination project

Himachal Pradesh has become the first state in the country to start Rotavirus vaccination project under the Universal Immunisation Programme (UIP). The project was launched by Chief Minister Virbhadra Singh from Dharamsala in district Kangra by administering the Rotavirus vaccine drops to the children aged less than 5 years. Rotavirus vaccination project is based on the analogy of the polio vaccine. Under it Rotavirus drops would be administered to the children at 6, 10 and 14 weeks after birth. The vaccination project will help in controlling the deaths amongst small children due to Diarrhoea.

India's forest & tree cover increased by 5, 081 Sq km: ISFR 2015

According to the recently released India State of Forest Report (ISFR) 2015, India's forest and tree cover has been increased by 5081 Square kilometre. The report was released by the Union Environment Minister Prakash Javadekar in New Delhi

Australia wins Hockey World League Final by defeating Belgium

Australia has won the 2014-15 Men's Hockey World League Final by defeating Belgium. In the final match played at Sardar Vallabh Bhai Patel Stadium, Raipur Australian team defeated Belgium by 2-1 goals. India was placed at third place in this league after defeating world number two and defending champions Netherlands by 3-2 goals in the penalty shoot-out.

India-Russia joint naval exercise INDRA NAVY-15 begins in Visakhapatnam

The eighth edition of India-Russia joint naval exercise-INDRA NAVY-15 has begun in Visakhapatnam, Andhra Pradesh. INDRA NAVY-15 is a bilateral maritime joint naval exercise between the Indian and Russian navies for epitomising the strategic relationship between the two countries.

Pune, Rajkot become interim IPL franchises to replace CSK, RR

Pune and Rajkot have become the new interim franchises in the Indian Premier League (IPL) through the reverse bidding process. They will replace the suspended teams of Chennai Super Kings (CSK) and Rajasthan Royals (RR) for a period of two years. The Pune franchise was bought by Kolkata-based company New Rising owned by business tycoon Sanjiv Goenka, while Intex Mobiles won the bid for the Rajkot franchise. Mr. Goenka will shell out 10 crore rupees per year to the Board of Cricket Council of India (BCCI) for the Pune franchise, while Intex Mobiles will pay 16 crore rupees for the two-year.

Scientists genetically modify Anopheles gambiae mosquito species to fight malaria

Scientists have genetically modified malaria-causing mosquito Anopheles gambiae species to fight the deadly disease of malaria. The research was successfully carried by team of researchers led by London based Imperial College and was published in the journal Nature Biotechnology.

10 December: Human Rights Day

Human Rights Day (HRD) is marked annually on 10th December to commemorate the day in 1948 when the United Nations (UN) adopted the Universal Declaration of Human Rights (UDHR). The theme chosen for the year 2015 HRD is 'Our Rights. Our Freedoms. Always'. It marks the launch of a 1 year campaign commemorating two international human rights treaties International Covenant on Economic, Social and Cultural Rights (ICESCR) and International Covenant on Civil and Political Rights (ICCPR). Both of the treaties were adopted in 1966.

India ranks 4th in black money outflows: GFI Report

Union Government declares Tamil Nadu flood as Calamity of Severe Nature

The Union Government has declared the recent Tamil Nadu flood as a Calamity of Severe Nature. Central Government's announcement came after Chief Minister J.Jayalalithaa had made a plea to Prime Minister Narendra Modi seeking that the floods be declared as National Disaster. Under this declaration Parliamentarians are advised to pend up to 1 crore rupees under their MP Local Area Development Scheme (MPLADS) for reconstruction and rehabilitation works in the in flood-affected districts. In this regard, MPs can send approval letters to the Union Ministry of Statistics and Programme Implementation.

Mexico Government approves world's 1st Dengue fever vaccine named Dengvaxia

Mexico Government has approved world's first-ever Dengue fever vaccine branded as Dengvaxia for the public use.

Tunisian National Dialogue Quartet awarded 2015 Nobel Peace Prize

Tunisian National Dialogue Quartet (NDQ) has been awarded prestigious 2015 Nobel Peace Prize at a ceremony held in Oslo, Norway. The award was collected by Trade unionist Hassine Abassi, human rights activist Abdessatar Ben Moussa, Mohamed Fadhel Mahfoudh and Ouided Bouchamaoui.

Varanasi and Jaipur designated as members of UNESCO's Creative Cities Network

Two Indian cities for first time have been designated as members of UNESCO's Creative Cities Network (UCCN).

India & Japan sign MoC on High Speed Rail on Mumbai-Ahmedabad sector

India and Japan have signed historic Memorandum of Co-operation (MoC) to introduce High Speed Rail (HRS) on Mumbai Ahmedabad sector to revolutionize Indian Railways. The MoC was signed in presence of Prime Minister Narendra Modi and visiting Japanese Prime Minister Shinzo Abe in New Delhi. This agreement confirms developing of high speed rail corridor using of Japanese high speed rail technologies along with financial and technical assistance from Japan.

Legendary actor Dilip Kumar conferred with Padma Vibhushan

Legendary actor Dilip Kumar (93) has been conferred with the prestigious Padma Vibhushan, country's second highest civilian award. It was bestowed upon him by Union Home Minister Rajnath Singh and Maharashtra Chief Minister Devendra Fadnavis at his residence in Mumbai, Maharashtra. Union Government had selected veteran actor for the Padma Vibhushan on the eve of 66th Republic Day.

China officially abandons its One Child Policy by passing law

China has officially abandoned its One Child Policy amid deepening demographic crisis of shrinking workforce and aging population in the world's second largest economy. In this regard 159-member National People's Congress Standing Committee, the top organ of China's Parliament has passed revised Law on Population and Family Planning.

Anti-jamming capability of Astra missile successfully tested

Scientist from Defence Research and Development Organisation (DRDO) recently have successfully tested crucial antijamming capability of the Astra missile. During the trials missiles ECCM (electronic counter-counter measure) features to overcome any jamming was successfully evaluated. This test was conducted after the missile's RF seeker and other electronic components were sought to be jammed in the earlier trials.





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