

Photonic chips gives push to network speed

It used to be known as the information superhighway -- the fibre-optic infrastructure on which our gigabytes and petabytes of data whizz around the world at (nearly) the speed of light.

And like any highway system, increased traffic has created slowdowns, especially at the junctions where data jumps on or off the system.

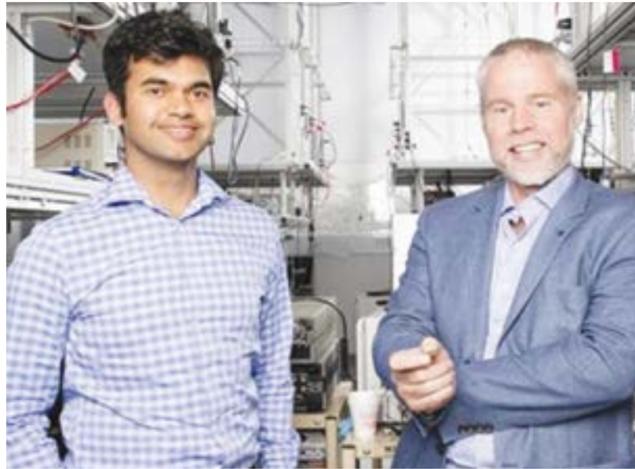
Local and access networks especially, such as financial trading systems, city-wide mobile phone networks and cloud computing warehouses, are therefore not as fast as they could be.

This is because increasingly complex digital signal processing and laser-based 'local oscillator' systems are needed to unpack the photonic, or optical, information and transfer it into the electronic information that computers can process.

Now, scientists at the University of Sydney have for the first time developed a chip-based information recovery technique that eliminates the need for a separate laser-based local oscillator and complex digital signal processing system.

"Our technique uses the interaction of photons and acoustic waves to enable an increase in signal capacity and therefore speed," said Dr Elias Giacomidis, joint lead author of a new study. "This allows for the successful extraction and regeneration of the signal for electronic processing at very-high speed."

The incoming photonic signal is processed in a filter on a chip



made from a glass known as chalcogenide. This material has acoustic properties that allows a photonic pulse to 'capture' the incoming

information and transport it on the chip to be processed into electronic information.

This removes the need for complicated laser oscillators and complex digital signal processing.

"This will increase processing speed by microseconds, reducing latency or what is referred to as 'lag' in the gaming community," said Dr Amol Choudhary from the University of Sydney Nano Institute and School of Physics. "While this doesn't sound a lot, it will make a huge difference in high-speed services, such as the financial sector and emerging e-health applications."

The photonic-acoustic interaction harnesses what is known as stimulated Brillouin scattering, a effect used by the Sydney team to develop photonic chips for information processing.

"Our demonstration device using stimulated Brillouin scattering has produced a record-breaking narrowband of about 265 megahertz bandwidth for carrier signal extraction and regeneration. This narrow bandwidth increases the overall spectral efficiency and therefore overall capacity of the system," Dr Choudhary said. Group research leader and Director of Sydney Nano, Professor Ben Eggleton, said: "The fact that this system is lower in complexity and includes extraction speedup means it has huge potential benefit in a wide range of local and access systems such as metropolitan 5G networks, financial trading, cloud computing and the Internet-of-Things."

Robots to follow bats

Drawing inspiration from bats, researchers at Tel Aviv University have developed a Robat, a fully autonomous terrestrial robot that, like a bat, emits sounds and analyses the returning echoes to recognize, map and navigate obstacles outdoors.

TAU graduate student Itamar Eliakim, together with a team of researchers in the fields of zoology, neuroscience and engineering, developed the robot, which, like a bat, emits sounds and analyzes the returning echoes to generate a map of space.

Bats solve the problem of mapping an unknown environment by perceiving their surroundings acoustically, emitting sound signals and analyzing the returning echoes.

Inspired by this ability, the researchers created the Robat — a robot that relies solely on a bat-like sound-based navigation system to orient itself through new environments and map them. To do this, the researchers used a biological approach, by creating ears, using two ultrasonic receivers and a mouth, using an ultrasound speaker or emitter, which produced frequency-modulated chirps at a typical bat rate. This enabled the Robat to move through a large outdoor environment and map it in real time

Robat is the first fully autonomous, bat-like biologically plausible robot that moves through a new environment while mapping it solely based on echo information. The Robat is also



the first to use a machine learning algorithm fed by echoes from the environment to train it to classify new objects.

Strange but true



Start sharing to be secure

Cyberattacks grow in prominence each and every day; in fact, 2017 was the worst year to-date for data breaches, with the number of cyber incidents targeting businesses nearly doubling from 2016 to 2017.

Now, new research from the UBC Sauder School of Business has quantified the security levels of more than 1,200 Pan-Asian companies in order to determine whether increased awareness of one's security levels leads to improved defense levels against cybercrime.

The study found that when cyberattacks were less likely to directly harm a company, organizations were unlikely to prioritize security improvements. Firms were more likely to fix issues related to spam emails originating from their compromised computers, but failed to act when they were found to host phishing websites on their servers. Most of the firms with phishing websites are actually hosting service providers.

The researchers conducted a randomized field experiment on organizations in Hong Kong, China, Singapore, Macau, Malaysia and Taiwan - which were chosen for their significant economic development as well as rapid adoption of technologies. The experiment evaluated each organization's preparedness against two distinct security issues: spam emissions and phishing website hosting. Spam usually consists of unsolicited bulk messages sent out by compromised "zombie" computers controlled by cyber attackers, while phishing refers to fraudulently obtaining sensitive information, such as passwords and credit card details for malicious reasons.

"For companies hosting phishing websites, there were fewer incentives to crack down on the sites since they were operated by paying customers and the sites failed to negatively impact the company itself," explains Gene Moo Lee, study co-author and assistant professor of Accounting and Information Systems at the UBC Sauder School of Business.

The researchers developed and assigned an information security score, similar to the idea of Moody's and Standard and Poor's credit ratings, to each organization. The score can be used as an indicator of each organization's security vulnerabilities.

The security results from each company were then published online. According to Lee, publicizing firms' security levels not only leads to greater transparency, but it could also be used to strengthen their security over time. In addition, organizations with poor performance could face greater pressure from their customers and a loss of reputation.

"The ever-increasing number of cyberattacks motivated my co-authors and I to explore a more effective way to enhance the security awareness of organizations and the general public," explains Lee. "By establishing a ranking scheme of firms against online scams, we hope this will heighten firms' awareness to address suboptimal security issues."

For Lee, cybersecurity is an international concern that needs to be managed more effectively. "Many organizations don't understand the threats posed by emerging, sophisticated cyberattacks and usually adopt a wait-and-see approach in security investments until a huge security incident affects them significantly," he said. "Our hope with this research is that companies improve their security levels to prevent the potential of cyberattacks from happening in the first place. And, ultimately, the goal of our research is to provide insights for cybersecurity policy makers."

Glareless screens inspired by moth!

Central Florida:

Many smartphones and laptops designed to solve the problem of glare using sensors that detects the quality of light and can enhance the brightness or even dim the screen according to the environment. But increasing the display brightness typically drains a device's battery.

A new anti reflection film has been developed using the concept "anti reflection in moth's eye" where no additional power is required.

Unusual structures on moth eyes that help the insects see at night have inspired a new anti-reflection film for electronic devices. The new technology could help users see their screens even in bright daylight. The film significantly reduces glare as well as the need to duck into the shade to read what's on the screen.

The moth-eye film can improve the readability of the screen by 10 times under a clear sky. Under direct sunlight, the readability can be improved by five times.

The nature-inspired film is expected to be inexpensive to manufacture and has the added benefits of being scratch-resistant and self-cleaning. Users could finally rid their phones of the dust, fingerprints and grime that tend to collect on regular touch screens. Shin-Tson Wu, a professor in the College of Optics and Photonics at the University of Central Florida (UCF) along with Guanjan Tan, the study's lead author, and Jiun-Haw Lee's team from National Taiwan University (NTU), were inspired to develop the anti-reflective film after hearing about the so-called moth-eye effect. This term refers to the unique pattern of anti-reflective nanostructures on the outer surface of a moth's corneas.

The nanostructures allow light to pass into the eyes, but



don't allow it to reflect out. This helps moths see in the dark but also prevents their eyes from reflecting light that might give the insects away to predators.

The moth-eye-like nanostructure film can be fabricated and sold as an accessory for our devices, just like screen-protection film, it can also be integrated into the whole device-manufacturing process.

To make the film, the researchers first created a mold using tiny "nanospheres" that they applied to a glass surface and that self-assembled into a tightly packed layer. The researchers then used the mold like a template to press the pattern into the film.

The next step for the researchers, they said, is to improve the film's durability, finding the right balance between flexibility and hardness.

How to win friends online?

Your chances of forming online friendships depend mainly on the number of groups and organizations you join, not their types, according to an analysis of six online social networks by Rice University data scientists.

"If a person is looking for friends, they should basically be active in as many communities as possible. And if they want to become friends with a specific person, they should try to be a part of all the groups that person is a part of," said Anshumali Shrivastava, assistant professor of computer science at Rice and co-author of a peer-reviewed study.

The finding is based on an analysis of six online social networks with millions of members, and Shrivastava said its simplicity may come as a surprise to those who study friendship formation and the role communities play in bringing about friendships.

"There's an old saying that 'birds of a feather flock together'. And that idea - that people who are more similar are more likely to become friends - is embodied in a principal called homophily, which is a widely studied concept in friendship formation," Shrivastava said.

One school of thought holds that because of homophily, the odds that people will become friends increase in some groups. To account for this in computational models of friendship networks, researchers often assign each group an "affinity" score; the more alike group members are, the higher their affinity and the greater their



chances of forming friendships.

Prior to social media, there were few detailed records about friendships between individuals in large organizations. That changed with the advent of social networks that have millions of individual members who are often affiliated with many communities and subcommunities within the network.

"A community, for our purposes, is any affiliated group of people within the network. Communities can be very large, like everyone who identifies with a particular country or state, and they can be very small, like a handful of old friends who meet once a year," Shrivastava said.

Finding meaningful affinity scores for hundreds of thousands of communities in online social

networks has been a challenge for analysts and modellers. Calculating the odds of friendship formation is further complicated by the overlap between communities and subcommunities. For instance, if the old friends in the above example live in three different states, their small subcommunity overlaps with the large communities of people from those states. Because many individuals in social networks belong to dozens of communities and subcommunities, overlapping connections can become dense.

In 2016, Shrivastava and study co-author Chen Luo, a graduate student in his research group, realized that some well-known analyses of online friendship formation failed to account for any factors arising out of overlap.

Tech bugs for direct drug delivery

Beijing:

Scientists have developed a tiny, soft robot with caterpillar-like legs that could be used to deliver drugs in the human body.

The robot developed by researchers from the City University of Hong Kong can move efficiently inside surfaces within the body with body fluids such as blood or mucus.

The robot has hundreds of pointed legs, measuring less than a millimetre. Researchers studied the leg structures of hundreds of ground animals, in particular the ratio between leg-length and the gap between the legs.

"Most animals have a leg-length to leg-gap ratio of 2:1 to 1:1. So we decided to create our robot using 1:1 proportion," said Shen Yajing, an assistant professor at CityU, who led the research.

The robot's body thickness measures approximately 0.15 mm, with each leg measuring 0.65 mm long and the gap between the legs measuring 0.6 mm, making the leg-length-to-gap ratio around 1:1.

Moreover, the robot's pointed legs have greatly reduced their contact area and hence the friction with the surface. Laboratory tests showed that the multi-legged robot has 40 times less friction than a limbless robot in both wet and dry environment.

The robot is fabricated with a silicon material called polydimethylsiloxane (PDMS) embedded with magnetic



particles which enables it to be remotely controlled by applying electromagnetic force.

Controlled by a magnetic manipulator used in experiments, the robot can move in both a flap propulsion pattern and an inverted pendulum pattern, meaning that it can use its front feet to flap forward as well as swinging the body by standing on the left and right feet alternately to advance respectively.

"The rugged surface and changing texture of different tissues inside the human body make transportation challenging. Our multi-legged robot shows an impressive performance in various terrains and hence open wide applications for drug delivery inside the body," said Wang.

When facing an obstacle ten times higher than its leg length,

the robot, with its deformable soft legs, is capable to lift up one end of its body to form an angle of up to 90-degree and cross the obstacle easily. The robot can increase its speed by increasing the electromagnetic frequency applied.

Laboratory tests showed that the robot was capable of carrying a load 100 times heavier than itself, a strength comparable to an ant, or to a human being able to easily lift a 26-seated mini-bus. The amazingly strong carrying capability, efficient locomotion and good obstacle-crossing ability make this milli-robot extremely suitable for applications in a harsh environment, for example delivering a drug to a designated spot through the digestive system, or carrying out medical inspection," said Shen.

Artificial skin for robots

According to a new study, rubber electronics and sensors that operate normally even when stretched up to 50 percent of their length could work as an artificial skin on robots.

"It's a piece of rubber, but it has the function of a circuit and sensors," said Cunjiang Yu, an assistant professor of mechanical engineering at the University of Houston.

Like human skin, the material is able to sense strain, pressure and temperature. The rubbery semiconductor starts in a liquid form, it could be poured into molds and scaled up to large stretches of skin. Humans want to work near robots and coexist with them. But for that to happen safely, the robot needs to fully sense its surroundings. A robot with skin that's able to feel its surroundings, could work side by side with humans without endangering them.

In experiments, Yu and his colleagues used the electronic skin to accurately sense the temperature of hot and cold water in a cup and also translate computer signals sent to robotic hand into finger gestures representing the alphabet



from American Sign Language.

Electronics and robots lack the ability to stretch as they are made of stiff and rigid semiconductor materials.

Yu and his colleagues made the stretchable material by mixing tiny, semiconducting nanofibers, nanowires 1,000 times thinner than a human hair, into a solution of a widely used, silicon-based organic polymer, called polydimethylsiloxane, PDMS.

When dried at 140 degrees Fahrenheit the solution hardened into a stretchable material embedded with millions of tiny nanowires that carry electric current.

The researchers applied strips of

the material to the fingers of a robotic hand. The electronic skin worked as a sensor that produced different electrical signals when the fingers bent.

For example, to express the sign-language letter "Y," the index, middle and ring fingers were completely folded to create higher electrical resistance. The thumb and pinky fingers were kept straight for lower electrical resistance.

Using the electrical signals, the researchers were able to spell out "YU LAB" in American Sign Language.

The scientists are working to increase the stretchiness beyond the 50 percent mark.

Robots to get lizard-like tails

Melbourne:

Robots of the future may tackle obstacles and traverse uneven terrains, say scientists who found that adding a lizard-like tail to the machines can help them go 'off-road' sooner.

Researchers, including those from the University of Queensland in Australia, used a slow motion camera to capture the nuanced movement of eight species of Australian agamid lizards that run on two legs -- an action known as 'bipedal' movement.

The study, published in the Journal of the Royal Society Interface, challenged existing mathematical models based on the animals' movement.

"There was an existing understanding that the backwards shift in these lizards' centre of mass, combined with quick bursts of acceleration, caused them to start running on two legs at a certain point," said Nicholas Wu, a researcher at the University of Queensland.

"What we found though is that some lizards run bipedally sooner than expected, by moving their body back and winging their tail up. This means that



they could run bipedally for longer, perhaps to overcome obstacles in their path," Wu said. Christofer Clemente from the University of the Sunshine Coast in Australia said these results may have important implications for the design of bio-inspired robotic devices.

"We're still teasing out why these species have evolved to run like this in the first place, but as we learn more, it's clear that these lessons from nature may be able to be integrated into robotics," Clemente said.

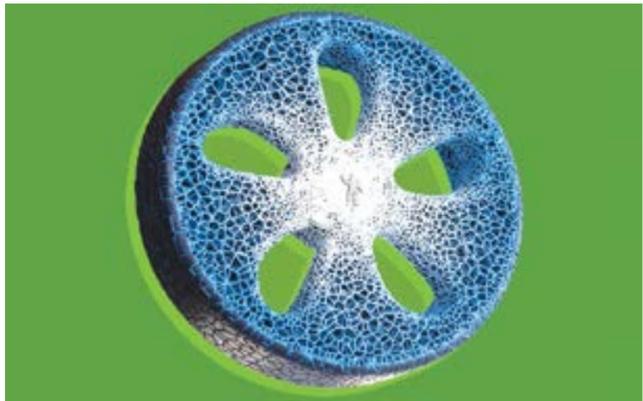
"It's been suggested that this movement might have something to do with increasing vision in

moments of urgency, by elevating the head at the same time and helping to navigate over obstacles," he said.

Bipedalism would be advantageous for robots in specific habitats, for example, on open grasslands where, in nature, many bipedal running agamids are found, researchers said.

"If obstacle negotiation is indeed improved with bipedal locomotion, then we have shown how the tail and body can be moved to enable it sooner and for longer," Clemente said.

"Maybe adding a tail to robots can help them go 'off-road' sooner," he said.



Airless smart tyres

France:

In the future, our cars will be smart, and our tires will be smarter. Or so suggests Michelin, whose business Firm is Headquartered in Clermont-Ferrand, France. Its Vision concept, unveiled to demonstrate the potential of tyre technology, certainly makes a compelling case. For starters, it's airless, eliminating the need to worry about pounds per square inch. It's also made from recycled materials in an effort to reduce waste. But the most impressive feature may be its 3D printed treads, which can be swapped in and out to accommodate various road conditions, without changing the tire itself. The challenge will be figuring out a way to do it quickly, says Terry Gettys, Executive Vice President who helped lead the project, "because consumers are going to want their tyres in just a few minutes." Michelin estimates that a tyre this advanced may still be as far as 20 years away. But some of its features, like airless designs and sensors that flag drivers when treads are wearing down, could become mainstream over the next several years.

Disposable Phone battery

Designer Tsung Chih-Hsien has created a concept for a tiny cardboard battery that could charge your phone. It's called the Mini Power. You choose how much battery time you need—two, four, or six hours—plug it in, then recycle it later.

These batteries are said to be disposable and environment friendly. Disposable smartphone batteries aren't a new idea. They're especially prominent in Asia. Japanese convenience stores have been selling disposable batteries for years. But these batteries tend to be environmentally unfriendly, not just because of the lithium-ion batteries inside them, but because they come in plastic casings.

There's still the problem of the tiny battery inside each capsule, but Tsung imagines it would be recycled at the same convenience store you bought your Mini Power from. Drop one off, pick up a new one; rinse and repeat. Disposable smartphone batteries are never going to be as good of an option as an external, but still these disposable batteries can be used in case of emergency.



eSight 3 to assist blind

For the millions of people who are legally blind, navigation is a routine challenge. Though support canes and guide dogs can help, they cannot mimic actual vision. eSight 3 can. Think of it as the world's most powerful pair of glasses: once users put on eSight 3, it records high definition video and uses magnification, contrast and proprietary algorithms to enhance that imagery into something the legally blind can see, enabling them to take part in a variety of activities, including sports, that would otherwise be off-limits. At \$9,995, the device, is not accessible to everyone. But it is cheaper than the company's earlier iterations, as well as faster, lighter and equipped with better zoom capabilities. To date, the company estimates it has been used by more than 1,000 patients. It is said to be available in more than 45 countries. United States, United Kingdom, Sweden, Switzerland and Turkey to name a few.



Grip yourself to face the wind



BMW R 1250 GS

Expected launch date: January 2019
 Expected Price: Rs 17,00,000 - Rs 21,00,000
 While the 2019 R 1250 GS retains the familiar ADV silhouette, it gets a new LED headlamp design and new colours: Blackstorm Metallic and Cosmic Blue Metallic. It also gets grey wheels with silver-coloured frame and silver-finished engine.

The R 1250 GS will be available in two variants: R 1250 GS Exclusive and R 1200 GS HP. The Exclusive edition comes in a black shade with black anodised engine and suspension components. The HP edition meanwhile gets the de rigueur white, red and blue livery with black engine and suspension accents and golden spoke wheels. With the HP variant you can also opt for the off-road suspension package that adds more suspension travel.

On the features front the bike gets a new 6.5-inch colour TFT instrument console.

Electronics include two riding modes (road and rain), hill assist, ABS and hill start control. BMW offers separate electronic packages too that adds more riding modes.

The new motor is the biggest update the 2019 R 1250 GS gets. The boxer-twin motor has the engine capacity up from 1170cc to 1254cc, achieved by increasing both the bore and stroke. The big update here is the introduction of variable valve timing that BMW calls 'ShiftCam'. Two separate cam profiles at low to midrange and top-end allows for optimum performance across the rev range. The motor also gets changes to the intake valve angle for a more optimal air fuel mixture.

Together these changes allow the new motor to make more power and torque. It makes 134PS at 7750rpm, up 11PS from the previous 123PS power output. Torque too is up by 18Nm. It is 143Nm now, compared to the previous 125Nm. Despite being more powerful, the motor is 4 per cent more fuel efficient and a lot more refined as well.

Another update that will be important for us Indians is the introduction of a second knock sensor that allows the motor to run smoothly on lower octane fuel. The six-speed gearbox also gets a slipper clutch as standard fitment.

Hero Leap Hybrid SES

Expected launch date: April 2019
 Expected Price: Rs 74,000 - Rs 1,10,000
 Leap hybrid scooter is one of the first hybrid scooters developed by an Indian two-wheeler manufacturer. An 8kW Permanent magnet AC (PMAC) motor is the main source of power for the Leap Hybrid SES. This motor is powered by lithium-ion batteries and is rated at 60Nm. While the power figure (10.7bhp) might be on the lower side, the fact that all of the 60Nm of torque is available from zero rpm makes the scooter very exciting, and somewhat scary. The scooter can be charged by plugging it into a standard wall outlet.

The Leap Hybrid SES also has a range extender - an extremely efficient 124cc engine which uses petrol from a three-litre fuel tank. This petrol engine is connected to an on-board generator which diverts the electricity towards the lithium-ion batteries.

Hero MotoCorp claims that the petrol engine can extend the range of the scooter by up to four times. When running on the range extender, the Leap will be capable of touching 100kmph. Stopping power is provided by Brembo 240mm twin-piston disc brake at the front.

The Leap Hybrid SES gets a very futuristic design, which might not seem feasible for a production model. At the front, the headlamp is positioned between the handlebars, while a 'position light' finds its place in the centre of the apron. The Leap Hybrid SES gets an all-LED lighting system, which hints at Hero MotoCorp's plans for its future models.

The Leap Hybrid SES still seems to be in the early stages of development, and it might be a while before it is launched in the Indian market. Due to the complicated technology involved, we expect it to be priced around the Rs 1 lakh mark.



Hero Leap Hybrid SES



BMW R 1250 RT

Expected launch date: January 2019
 Expected Price: Rs 18,00,000 - Rs 23,00,000

The 2019 BMW R 1250 RT arrives with a new 1254cc boxer engine that features BMW ShiftCam Technology. The highlight of the engine is variable valve timing. BMW Motorrad says the ShiftCam tech will provide numerous benefits, including: Increased power across the entire engine speed range, Reduced emission and fuel consumption levels, Smoother operation. In addition, the intake camshafts are designed for asynchronous opening of the two intake valves.

The 2019 R 1250 RT's new engine, which grows to 1254 cc from 1170cc, produces 136 horsepower at 7750 rpm and 105 ft/lbs of torque at 6250 rpm. The 1170cc boxer in the R 1200 RT produced 125 horsepower at 7750 rpm, and 92 ft/lbs of torque at 6500 rpm.

BMW says other technical updates to the R 1250 RT's ShiftCam Technology boxer are a toothed cam chain vs a roller chain, an optimized oil supply, piston-based cooling, twin-jet injection valve, and a knock sensor system for optimized travel.

The 2019 BMW R 1250 RT gets a redesigned exhaust system to maximize performance. 2019 BMW R 1250 RT two up touring. The R 1250 RT features two riding modes, ABS, Automatic Stability Control (ASC - BMW's base traction control) and Hill Start Control as standard equipment.

The R 1250 RT arrives with ABS Pro as standard equipment. This is BMW speak for cornering ABS. Riding Mode Pro is once again available as an option, and includes additional riding modes—Dynamic Traction Control (DTC), Hill Start Control Pro and Dynamic Brake Assistant (DBC).

Electronic suspension Dynamic (ESA) "Next Generation" with fully automatic load compensation is standard.

The R 1250 RT is equipped with an LED headlight. An LED daytime riding light is available as an option. 2019 BMW R 1250 RT top speed 9. The R1250RT is fitted with a 5.7-inch TFT-color screen. The dash also includes an analog speedometer and RPM gauge.

The R 1250 RT can be updated with an optional Intelligent Emergency Call button. The new R 1250 RT is available in four finishes (yet to be reported). Stateside pricing has yet to be reported.

Yamaha YZF R1M

Expected launch date: December 2018
 Expected Price: Rs 28,00,000 - Rs 35,00,000
 The R1M remains the pinnacle of Yamaha supersport motorcycles, and short of grabbing one of Valentino Rossi's old MotoGP bikes, this is the most performance you can have with the tuning forks logo. For 2018, Yamaha has left the driveline

the same - most of us would be happy with figures of 197bhp and 112Nm from a crossplane four-cylinder motor - but upgraded the electronics package. Therefore, in addition to the 6-axis IMU which controls traction control, ABS, slide control, lift control, and launch control, the R1M gets Ohlins semi-active suspension which adjusts the compression and rebound on the go, depending upon the feedback it receives from the sensors. It is called the Ohlins Smart EC 2ERS. It gets an updated quickshifter that now allows it clutchless downshifts as well. A new colour scheme will debut on the 2018 Yamaha YZF-R1M, called 'Silver Blu Carbon'.



KTM 790 Duke

Expected launch date: April 2019
 Expected Price: Rs 8,00,000 - Rs 9,00,000

KTM decided that it didn't have enough of a presence in the middleweight segment, and so the single-cylinder 690 Duke is joined by the 790 Duke, powered by the firm's first parallel twin motor. The 790 Duke combines light weight at 169kg dry, with massive power (103bhp) and a compact size - so compact in fact that it could fool people into believing it was a 400cc bike rather than an almost 800cc one. It gets a lot of kit as standard - a six-axis IMU linked to the brakes and traction control, and a two-way quick shifter with a slipper clutch. The engine is a stressed member of the frame, to keep weight down. The throttle is ride-by-wire, meaning we can expect ride modes to be present, and as with the 390 Duke, an 'off' as well as 'Enduro' mode for the ABS system. All the information will be displayed on a colour TFT screen and Bluetooth will be present as well. The options list is a mile long for the 790 Duke in global markets; it remains to be seen how many of those accessories will make their way to the Indian market in an official capacity.

Luckily for us, there are plans to assemble it at the Bajaj-KTM facility in Chakan outside Pune, meaning the one thing that endears us to KTMs above all else will be retained - a thrilling performance-to-price ratio.

Hero Maestro Edge 125

Expected launch date: October 2018
 Expected Price: Rs 55,000 - Rs 57,000

The 125cc scooter game is where it's at, and Hero has unveiled its competitors to the world at the 2018 Auto Expo. The Maestro Edge is the one that has us excited, because its features list is only rivalled by the TVS Ntorq 125. There's USB charging, a boot light, a front disc brake, a part-digital instrument cluster with things like a side-stand indicator, and the patented i3S start/stop system from Hero. Oh, and that 125cc engine generates 8.7bhp and 10.2Nm - figures that seem geared toward good fuel economy. It still is recognisable as a Maestro, but the panels now have shed some more fat and display a little more muscle. Expect a launch soon - the 125cc scooter space looks likely to get real crowded real soon!



Royal Enfield Interceptor 650

Expected launch date: October 2018.
 Expected Price: Rs 2,40,000 - Rs 2,80,000.

The first twin-cylinder engine from Royal Enfield sports a parallel twin configuration with a 270-degree firing order. It generates 47bhp and 52Nm at 7100rpm and 4000rpm respectively. There is no liquid cooling but the oil does have a radiator, and fuel delivery is via a Bosch injection system. The company was aiming for products that were a step up from its current range but yet retained the easy going character that defines a Royal Enfield, and therefore the power figure, that seems a little underwhelming for the configuration and displacement. Still, another first for RE is the inclusion of a six-speed gearbox. The braking system has single discs front and rear, and ABS will be standard.

The Interceptor looks great, with its design harking back to the original Interceptor made a few decades ago, the flip side is that the design is generic Brit classic bike, with no real distinguishing features. It will be available in silver or orange, with a two-tone scarlet/black as well. As always, there will be many accessories that can be added to the motorcycle.

Etiquettes

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A couple of individuals fight that etiquette does not have any effect any longer, that the standards of good leaders are out-dated and out of date. Regardless, incredible direct and conduct is never out of style. Etiquette, like all other social practices, advances and arranges with the occasions. Without conduct, people from society would show up with an outrageous level of touchiness and absence of respect for one another, which would provoke to put-down, conniving, street seethe, clench hand battling, and a rash of different awful scenes.

Etiquette is a code of affable direct in light of social affirmation and adequacy. Also, as there are movement laws to make smooth transportation stream and foresee crashes, so there are societal fundamentals proposed to empower positive human trades and reduction battle. When you know the rules of etiquette for some random situation, it assembles your comfort, sureness and expertise, and by development, the effortlessness and solace of people around you. The present etiquette assumes a job in a few vital capacities. Separating etiquette from conduct; etiquette gives the edge or structure of which incredible behaviour work. Both are basic to suitable human conduct.

Etiquette gives singular security. Knowing how to bear on business appropriately in a given condition makes you more pleasant. It anchors the opinions of others. Suitable behaviour necessitates that you make others pleasing and secure their feelings. You don't raise their goofs or pull in consideration regarding their slips. It makes correspondence clearer. Behaviour update correspondence by isolating limits, not raising them. It will enhance your status at work. In any working condition, you are viewed as more gifted if you think about the most ideal arrangement of standards for the workplace. Though, displaying crude lead could lose your business. Here are fundamental behaviour's guidelines you should take after. As times are changing, so do social gauges for individual and master direct, yet that doesn't mean crucial conduct doesn't have any kind of effect.

Execution and quality are imperative, too, clearly, yet not just. We from time to time ignore that business is about people. There is no inadequacy of prepared and tried and true people in the business world and conduct can have the impact. Wouldn't you rather collaborate with, work for or buy from someone who has hoisted desires for master direct? Various, anyway not all take after these 10 time-attempted fundamentals of better direct.

A handshake is as yet the master standard. Not simply does this essential movement demonstrate that you're all around mannered, beyond any doubt and responsive, it in like manner sets the tone for any potential future master relationship. In an incredibly agreeable work air, you may have the ability to escape with a motion or a welcome, be that as it may, it's advocated, in spite of all the inconvenience to endeavour to offer your hand.

The main individual who achieves the entryway holds it for the following individual paying little respect to the sexual orientation. Keeping fingers together with

an open palm while pointing is advised. Pointing the forefinger alone is forceful.

Say "Please" and "Thank you" a couple of times in the midst of the exchange, or else it will debilitate the impact and may maybe make you powerless and poor. This should forsake saying, yet even in an extraordinarily agreeable master air, this principal sort of obligingness is as yet objective. Saying "Reason me, I am sad" will never cut you down. Today, sending a thank you email is marvellously satisfactory, yet a composed by hand card to express profound gratitude is constantly a charming touch. Do whatever it takes not to meddle. We've



transformed into a nation of "over-talkers," so on edge to offer our own specific decisions or press our point that we as often as possible interfere with others mid-sentence. It very well may be tongue-bitingly difficult to oblige ourselves not to include, especially when the talk is warmed. Don't. It's rude and shows attack for the sentiments of others. Remember, be insistent, not strong.

Watch your tongue. Verbal and created correspondences are as often as possible impressively less formal than in times past, yet be careful in order to pick your words insightfully. Clearly, a cruel, discourteous or unfriendly lingo is inadmissible, be that as it may so is slang. While it may be normal for our overall population, it's never satisfactory in a specialist air.

Make an effort not to talk. It's so troublesome a portion of an opportunity to restrict participating in a fairly "safe" babble. In any case, really jibber jabber is never harmless. It is undeniably hurting to the subject of the jabber, yet it in like manner considers deficiently you. It's general to be intrigued and propelled by what different people are doing, yet talking about someone who is absent is rude. Make an effort not to listen stealthily. Everyone has met all requirements for private discourses, up close and personal or by means of phone. The same goes for email; don't stay behind somebody and read their messages.

Remember others. When someone approaches you, remember him or her. In the event that you're extremely bustling something crucial, its fine to ask for that they hold up a minute while you wrap up. If you pass someone in the entry or in the city, yet don't have the adequate vitality to talk, on any occasion, wave a hand and make appropriate associate. Feverishness isn't motivation to dismiss people. Be on time. We're altogether involved. Being immediate shows others that you regard their opportunity. Being late doesn't infer that you're busier than different people; it just suggests that you're impolite. No phone in the midst of social

affairs. When you're in a gathering, focus on the gathering examination. Make an effort not to acknowledge calls, substance or browse email. It's discourteous to substitute members, likewise, incredibly disturbing. It moreover makes social events keep going longer in light of the fact that the individuals keep losing focus. Correspondence etiquette It's now and again not what you say, but rather how you say it that issues! Compassionately return telephone calls and email inside 24 hours - paying little personality to the probability that lone to state that you will give asked for data at a later date. Expelling a versatile call is considered to a great degree unforgiving, you can, then again, kill your volume with the objective that you can give back the call later. Never send a forward message to a client, paying little heed to the likelihood that the issue is the same guarantee each is sent solely. Ask before putting someone on speakerphone. Tweak your voice message - there's nothing more deplorable than just tuning in to a phone number on someone's voice message and not knowing whether you are leaving a message with the opportune person. People may not leave messages. A champion among the most by and largely dismissed principles of etiquette today is that each individual legitimacy the dash of peace and calm. The individual sitting nearby you or inverse you

wouldn't prefer to be powerfully held detainee to whatever sounds you may tune in to or make. Keep in mind these decency tips with a particular ultimate objective to respect other's "sound space."

Fathom informing, don't spam or just forward a message which you are getting. Limit yourself sending extraordinary and suitable messages as it were. Try not to forward tattles, unapproved proclamation.

Messages at work should be etymologically right and free of spelling botches. They should not be managed like individual email. At whatever point informing, use the subject box, and guarantee it particularly relates to what you are making. Sending the message in capital letters is "shouting". These ensure ease in feeling that it's later and a perhaps speedier response. Never say in an email anything you wouldn't state to someone's face. Underlining, underscoring, bolding, shading, and changing content measurement can make a delicate email message have all the earmarks of being too much strong or powerful.

Particularly for Men

Run private with your irritating penchants. This is fairly interesting, yet if there is something that you do that is extraordinarily disturbing to the following people for the duration of your life, for example, spitting in the city, burping after a devour, smoking cigarettes, scratching private parts, biting a paan. Bathe your body and brush your teeth reliably. Cut the fingernails and toenails. Search for the errant nose and ear hairs. Investigate yourself in the mirror in any event once every day, see yourself, and apply an embraced antiperspirant. Guarantee you put on clean socks; underwear and dress. Never wear a shirt or pants on a weekday to the workplace. Long sleeve shirts ought to dependably be secured at the sleeve, however, ought to never be moved up.

Never allow your hair to hang down on your neck. Hair should be immaculate faultlessly trimmed and organized. Never leave home without shaving. If you are wearing a moustache don't stress over it, guarantee it is trimmed appropriately. Wash your hands. It is shocking that there are men and women, too who don't wash their hands in the wake of using the bathroom or before sitting to eat. Ensure to clean with a bit of scour.

Ensure you stand when shaking somebody's hand. Never check WhatsApp, messages, or Instagram when eating with somebody. Try not to give an evaluation of a book or movie except if you've seen or scrutinized it. Regardless of whether you're driving with a guest or in the front seat, never stay on the phone for longer than a minute. It's rude to the following person who can't tune in to music and requirements to hear one-part of an exchange.

An etiquette control can't address each possible situation you will face as you travel through life. There are endless conditions in life when you will have the opportunity to rehearse little kindnesses that will reveal your real character. Each and every exhibit may upgrade someone else's life a bit and that individual may pass it on to someone else, so put aside.

NLC, NPTEL jointly offer courses on power generation, mining

Chennai:

NLC India Limited (NLCIL), formerly Neyveli Lignite Corporation, is collaborating with National Programme on Technology Enhanced Learning (NPTEL) to co-offer courses related to their domain expertise of Power generation, Mining and renewable sector and provide the industrial perspective to enhance technical content created by course instructors from IITs/IISc.

NLCIL has become the first Central Public Sector Undertaking to become Industry Associate. NPTEL signed the MOU with NLC India Limited on 20th September 2018. This is a big step forward for both the organizations and the opportunities to collaborate are aplenty.

Speaking about the importance of this collaboration, Prof. Prathap Haridoss, Coordinator, NPTEL, IIT Madras, said, "We hope this partnership will pave the way for more PSUs to recognize the potential of our courses and encourage them to partner with us and use these to motivate their employees to embark on a journey of lifelong learning anywhere anytime."

NPTEL has been successfully delivering open online courses for certification since 2014. Starting from one course with 1,180 people writing the examinations in June 2014,



NPTEL is offering 270 courses this semester alone with more than 1.6 lakh candidates registered for exams in October 2018.

NPTEL partners with more than 2,020 colleges who have formed NPTEL Local Chapters. Students from varied educational backgrounds and diverse regions are able to get skilled through this initiative. Availability

of courses like Knowledge Management, Project management, marketing management, Leadership, Entrepreneurship are increasingly attractive to working professionals looking to move to Management cadre or train themselves better apart from those interested in technical areas like Data analytics, Machine learning and block chain management.

To facilitate a more formal way in which the L&D division of companies can leverage the NPTEL courses for re-skilling of their employees and for companies who wish to recruit from the pool of NPTEL certified learners, NPTEL flagged off the Industry Associate initiative in January 2018 with no financials involved. Companies such as IBM, Infosys, Aricent Technologies, Glass Academy etc are the forerunners in this and have started partnering with NPTEL in the last few months.

NLC India Limited (NLCIL) is a 'Navratna' profit making public sector enterprise engaged in mining of lignite, coal and generating thermal power through lignite and coal-based power plants and renewable energy from its Solar and Wind plants.

It was established by GOI in 1956 and comes under the administrative control of Ministry of Coal, GOI and serves as an important source of power generation to the States of Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Telangana, Rajasthan, Odisha, Uttar Pradesh and Union Territory of Puducherry.

NPTEL is the largest provider of MOOCs in India today, especially the Engineering stream, with a credible proctored certification exam that clearly qualifies and differentiates the learners who do these courses.