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A BRAVE NEW WORLD...



Rajiv Anand
Executive Director, Axis Bank

The start of every New Year is marked by a resolution to start anew, do things differently and consolidate on the previous year's learnings. This January is no different, for 2016 — especially the last quarter of the year gone by — saw winds of change permeating the country, most definitely in the world of finance and digital transactions. Hence, *burgundy's* first issue of 2017 focusses on the changes in traditional ways of thinking and financial transactions. In sync with global developments our country has opened up its thought processes — and carping critics notwithstanding — has stepped even more consciously into the domain of virtual transactions. In these pages, we explore the frontiers of technology that are going to push the envelope of life and living far beyond anyone's imagination.

Atul Kunwar, president and CTO, Tech Mahindra — fascinated by science fiction and worlds of the future — takes a look at the ramifications of an artificially intelligent world. He explores how to cope with the rapid technological advances that are redefining living.

On another note, Rand Simberg, president, Interglobal Media LLC, and a consultant in space technology, regulations and business development, looks at the way revolutionary developments in space flight are impacting our world. While large government space programmes may be ending, he analyses the journeys of private companies like Elon Musk's SpaceX and Jeff Bezos' Blue Origin whose plans to explore beyond the Low Earth Orbit have already been set in motion.

Digital payments have currently emerged as the flavour of the season and are fast gaining in popularity. Sangram Singh, SVP and Head — Cards and Merchant Acquiring Business, speaks about how the emergence of cashless transactions is powering the country to a stronger digital economy.

No look at technology is complete without a mention of Kiran Mazumdar Shaw, India's trendsetting biotech entrepreneur. Harish Bijoor gives a glimpse into the personal and professional persona of a business achiever beyond compare.

Burgundy customer Tejinder Singh Miglani, CEO, Incendo, breathes and lives his passion for technology. Anita Vasudeva explores his varied interests as he talks about the exciting applications of tech in our daily lives.

Today, technology continues to redefine almost every aspect of our lives. It has led to interesting developments in our physical spaces, in the world of culinary art, the way we consume literature and more.

This issue of *burgundy* — like the New Year — holds within itself the promise of infinite possibilities. We, at Axis Bank, wish all of you the very best for 2017!

burgundy

by **AXIS BANK**

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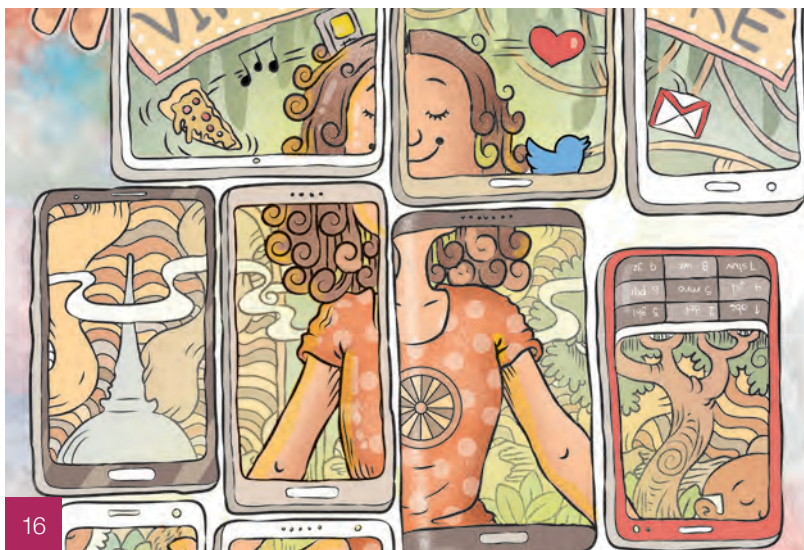
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LIVING IT APP!

Digitisation is now an integral part of our lives. Customers are embracing innovative systems. **Praveen Bhatt**, Head, Digital Banking, spotlights Axis Bank's mobile app's distinctive features

Less than a decade ago, Digital Banking could have been considered an oxymoron. Yet these two words have now become so inseparable that we can hardly imagine a world, let alone a bank, with no digital in it. It is now in fact no longer a luxury but more of a necessity with customers leading the charge as eager adopters of technology. Sample this: while the acceptance of Internet Banking (when we log on through our desktop computers/laptops) was more gradual and measured, the adoption of Mobile Banking (when we log on using our mobile) has been anything but gradual. Customer adoption numbers have already caught up in usage (in terms of count as well as value of transactions) with the more mature Internet Banking.

The mobile is no longer an accessory, but a true personal companion that travels with us, helping us to do much more than just communicate. Ditto with Mobile Banking. There are a host of features beyond just viewing balances and getting statements or even transferring funds that can be availed. Below we list 10 such features that our Axis Mobile app has, which make your smartphone your personal banker.

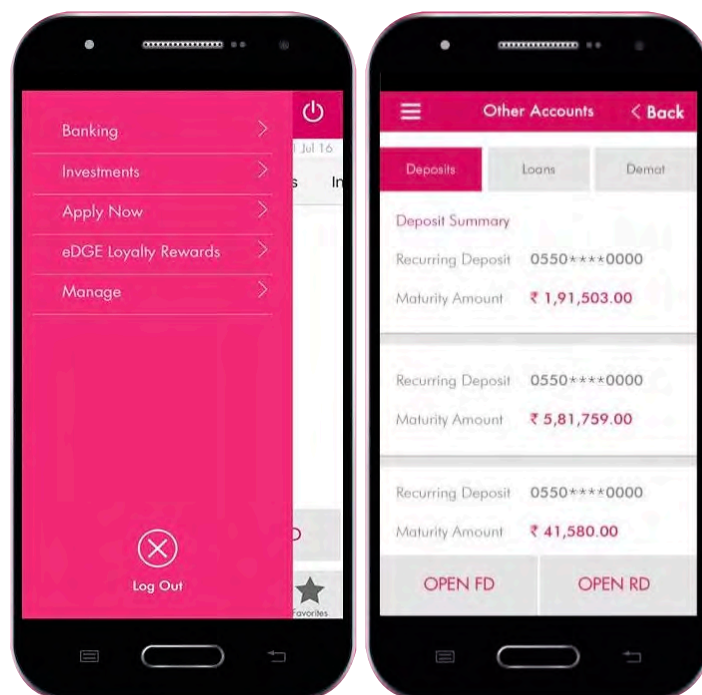
EXCLUSIVE BURGUNDY FEATURES

Our Burgundy customers can use the 'RM' tab on the App to contact your Relationship Manager. Explore the App and you will find many other useful features which can help simplify your banking experience with us.

View your investment portfolio and carry out Mutual Fund transactions. Once you have an Investment account with us, your mobile also doubles up as your wealth manager. Keep track of all your investments on the go. See a market opportunity... and quickly invest in it.

BOOK A LOCKER OR FD/RD

We know the drill when it comes to booking a locker. Go to the nearest branch, check out locker sizes and their availability. If unavailable then look at other



branches till you find one that fits your requirements. The 'Book a Locker' feature on the app does away with all this physical labour. You can check online the locker availability and its size across branches. Go ahead, book it and quote the reference number at the branch to claim your locker.

Booking your FD is also simple. All you need to do is select a period, use the interest rate calculator to find out what interest you will earn and book it.

LOCATE DINING DELIGHT OFFERS OR THE NEAREST AXIS BANK BRANCH OR ATM

We live in a world of offers with our eyes trained to automatically search for the number before the

Left to right: The main menu of Axis Bank's interactive mobile app; Checking your account summary, booking an FD or RD is at your fingertips

ubiquitous percentage sign. We have made it easier for our customers to locate these offers. Just click on the 'Near Me' icon on the Mobile app and point your mobile in any direction. The Augmented Reality (AR) feature then takes over and sifts out the best Dining Delight offers at various restaurants in that direction. Point your mobile in a different direction and it gives the location of offers in that direction. You can also use this feature to find out the nearest Axis Bank branch or locate an ATM.

ORDER A CHEQUEBOOK

While we do encourage our customers to use digital modes to transfer funds, we understand their need to use the cheque book once in a while. Let's face it. There is a bit of nostalgia and a hint of old-world charm in using them. And most of us in line with the Japanese *Just In time* philosophy order one when we are on the last leaf. So bow your heads, just like the Japanese, in deference to the mobile and log on to the app to request for a cheque book.

GET YOUR FOREX CARD AND TRAVEL INSURANCE WITH HAPPY HOLIDAYS

Travelling abroad? Fret not for we got your essentials covered. The Happy Holidays feature is here to satiate the wanderlust in you. Get travel insurance, a multicurrency forex card, access the Trip Assist feature (which can get you emergency assistance to pay your bills and book return flights) and discover dining outlets across countries — which allow you to combine great cuisines with awesome discounts.

BLOCK/REPLACE YOUR DEBIT/CREDIT CARD

In the unfortunate event of you losing or damaging your card, we ensure that you don't lose your peace of mind over it. For you can block it or request for a replacement from your mobile device itself.

START AN SIP OR INVEST IN A MUTUAL FUND ONLINE

Systematic Investment Plans in Mutual Funds are a way of saving if you believe time is more important than timing. You need to have an Investment account with us to transact. You can open one by visiting an Axis Bank branch. You can then purchase or redeem, or even start an SIP in any of the Mutual funds empanelled for transactions with Axis Bank.

MODIFY YOUR ATM/PURCHASE LIMIT

Your debit card can become a cause for worry if it falls into the wrong hands. So, we have a handy feature where you can set different limits for ATM withdrawals and different limits for usage at point of sale shopping outlets. You can increase and decrease the limit as per your choice, and the change is instantaneous.

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SET YOUR DEBIT/CREDIT CARD PIN

While we would love to hear from you, you no longer have to call us to change the PINs on your debit/credit cards. Neither do you need to wait for us to dispatch the carbon concealed envelope with the PIN. You can set your desired PIN on the mobile device itself. Save trees, we say; breathe in pure air and — might we add — a huge sigh of relief too!

SECURING YOUR MOBILE FOR BANKING

Who isn't worried about safety? In fact, we are paranoid about it. If the mobile device has to rightfully claim the moniker of a personal banker then it has to evoke the same level of trust too. At Axis Bank we take security very seriously and have a host of security related features working towards it. So while it has the must-have security features like Mobile Pin (MPin), OTP on registered mobile numbers for each transaction, we have added a few more so that you can breathe easy while transacting.

- Debit card credentials: You register the first time using your debit card credentials.
- Adaptive authentication: Which ensures that when you log on from a different device, the application senses it and asks you your security questions.
- Mobile device locking: This is where the apps automatically get locked in onto the registered mobile number and device — thus ensuring that there is always a single instance of the mobile.

SEARCH FOR AN AXIS BANK PRE-APPROVED PROPERTY

Log onto the app and search for your dream home through our property section. Further, find out if your chosen property is on our pre-approved list or not. This feature is in conjunction with Magicbricks.com. ■

THE FAST TRACK TO THE FUTURE?

With technology advancing at breakneck speeds, life in an increasingly automated world acquires different dimensions. In swiftly changing times, **Atul Kunwar** asks if we are moving too fast for our own good

I'll admit that I love science fiction. It has inspired much of what we have today and continues to inspire us to innovate. Well-received science fiction will almost always have an actual scientist consulting with the media house on the technicalities behind the spectacle. That being said, I do have one grouse — most science fiction seems to paint a rosy picture of what the future will hold.

However, the evolution of some of today's technological marvels has been anything but rosy. Take for example the first airplane or vaccine, and in those cases the countless people who died before we got it right.

Sometimes, when you look at the progress of technology, you realise that the line 'more technology is always better than less' from Wolfgang Sachs' *Planet Dialectics — Explorations in Environment and Development*, seems more a matter of perspective than actual fact.

While many of us are looking forward to an artificially intelligent future replete with robots and flying vehicles, the reality is that the advent of these technologies will lead to large job losses. We all might wish for an Artificial Intelligence (AI) assistant like Iron Man's J.A.R.V.I.S. (Just A Rather Very Intelligent System), but Elon Musk has called AI 'our biggest existential threat'. He warns the world to be extremely careful when playing with technology which can have superior capabilities than our own minds, for technology, like man, cannot be controlled.

Historically, mankind has progressed in random spurts rather than in a linear fashion and our progress is now accelerating. Technology seems to be following the same path and advancing at an accelerated pace with every passing year. So, how do we make sure that we invest in the 'correct' technologies? Frankly, nobody can provide a clear answer here.

I'd like to share some of my thoughts and pose some questions too on the subject; hopefully I can prompt some much-needed discussions.

TECHNOLOGY VERSUS THE FOOD AND DRUG ADMINISTRATION (FDA)

One of the issues the world is grappling with is the rapid adoption of new technologies. Today, new tech is embraced and phased out at such an astounding pace, that both, the creators and consumers are unable to plan beyond a year's time frame. This is a far cry from the late '90s and early noughties when most firms would have three to five-year technology refresh cycles and consumers would change mobile phones maybe once every two years.

Now let's compare this with the FDA. To introduce a drug for mass consumption, first the molecule needs to be invented. Then it is put through a battery of tests which start in a lab and culminate in the field. It's only when all the possible side effects are known, that a pharmaceutical company is allowed to market the drug. In contrast, technology is adopted with little or no study of its impact on society. By the time the side effects become prevalent, it's already too late. A classic example is that of social networks. They were accepted at a pace which we have seldom seen in the technology world. It is only now, after almost a decade that we have begun to understand how they affect a person's psyche. Today, most mental health experts advise rationing the time spent on one's virtual presence.

I found this especially interesting because in 1910, Marie Curie succeeded in isolating radium. Once discovered, it was used in applications like watch dials etc., because it would glow in the dark after being exposed to the light. It was only after a decade or so that people started to understand the effects of ionizing radiation on the human body and measures were taken to keep it in check. It was too late for many people by the time the realisation set in. This is just another example of adopting technology before completely understanding it. But, we don't seem to have learnt too much from that experience. So, how do we try and pre-empt the dangerous impact a technology is likely to have on society?

Facing page: The world of virtual reality — and its swift advances — holds a lot of potential in the real world

THE DRAW OF VIRTUAL REALITY

Recent advances in virtual reality have led to researchers deriving a range of extremely useful medical scenarios where the technology can be used like never before. For example, The Virtual Reality Medical Centre in San Diego, California is using Virtual Reality (VR) to help people get over their fear of heights. VR has tremendous potential to help mentally disabled people overcome disabilities through virtual experiences and 'TeleTherapy' (remote therapy conducted by professionals).

This always reminds me of the movie *Surrogates*. It describes a time when VR is so popular that people start to abhor reality because they are thrilled to be living in a dream world generated by technology. They spend more time in the virtual world because they are happier there. One look at video game addicts will give you a sense of how real this danger of escapism into a virtual world can be. Given the choice, and knowing what we know, how many of us would pick the ominous Red Pill over the Blue one? (You have to just think *The Matrix*.)

Let's take this a step further into the realm of science fiction. Let's say technology progresses to the point where there is no perceived difference between the virtual world and reality. Let's also enforce a rule that if you die in the virtual world, you die in the real one as well. How would we define what's real from what's not? Every emotion we feel can be traced back to electric signals in the brain which can now be replicated and simulated.

Some might argue that the entire objective of humankind has always been to create a utopia where everyone is happy and safe. If VR has managed to create this world, then can we not say that its inventors have succeeded where reality could not? Won't this make VR 'better' than, well, reality?

Again, there is no simple answer here.

WHEN ARTIFICIAL IS BETTER

AI is quite often looked up to as the holy grail of technology. To be able to spawn a consciousness was considered a power only God possessed. Over the last few decades we have closed the gap between machine and human intelligence. Today we have machines which can defeat humans at complex tasks like playing chess. The day is not far when we will create a true AI; a fundamentally new form of life.

This impending technology has opened up fascinating new discussions. What will happen if we teach an AI religion? How will AI perceive morality? Can we teach it empathy? Will it follow the concept of a family with a father, mother and siblings?

AI would possess the capability to constantly improve itself, much like human beings. However, unlike genetic and natural evolution, which can take generations, AI could reach its pinnacle in a



Some might argue that the entire objective of human kind has always been to create a utopia where everyone is happy and safe. If Virtual Reality has managed to create this world, then can we not say that its inventors have succeeded where reality could not?

matter of months, days or even hours! Connected to the internet, it could assimilate all the knowledge humanity has available in a matter of hours. It will be, in almost every sense of the word, 'better'. Where does that leave us?

Man has successfully dominated the planet thanks to his ability to outthink his opponents. AI will have the ability to outthink us. Will the master then become the slave? No one knows, but the threat is all too real and not too far away.

THE NATURE OF TECHNOLOGY

Over the years human advancement has more or less been a function of two things: Processing power and the amount of resources we are willing to assign to the task.

Human ingenuity was difficult to reproduce, so we created computers which are great at mundane, repetitive tasks. The next problem was to find the necessary resources. Looking back at history, humans have always created centres of learning to get intellectual people together and have them solve problems. With more people working simultaneously on a problem, it was possible to solve problems of higher difficulty in a shorter span of time.

Bill Gates once said, 'Technology is letting people get their questions answered better so that they stay more curious. It makes it easier to know a lot of topics which turns out to be pretty important to contribute to solving complex problems.'

The internet takes this to a whole new level; people from all over the world can collaborate and discuss solutions to problems they're working on. A classic example of value creation through this kind of collaboration is Uber's Travis Kalanick, who found his co-founder through a tweet. Even machines can collaborate with each other, sometimes for nefarious purposes e.g. Botnets. Machines also help us offload tasks thereby freeing up more of our time. More technology is directly proportional to having more time free from mundane tasks.

This combination of fast processing power with the ability to collaborate with a large group of people has allowed us to understand our world better and create even better technology. It loops back, and further improves our understanding of the world. We are now at the cusp of comprehending quantum theory, which will help us comprehend pretty much every phenomenon that exists in the universe.

Some say that the ultimate objective of any species is simply to survive but, once we've mastered our universe and can now understand and predict events, what is the point of mere survival? Immortality sounds more like a curse now than a blessing.

When can and when will we put down our tools and finally say, "Stop, we have really developed enough technology!"



IN CONCLUSION

I recently watched an episode of a TV show called *Black Mirror*; which discussed some of the negative themes of an interconnected and technologically advanced world. Personally, as someone who is passionate about the subject, I'm happy that we have progressed to the point where technology has some measure of ethical consequence. Today, the technology we produce is so complex that we *must* look at its ethical ramifications. Earlier technology did not have such far-reaching consequences and thus did not affect so many people at once.

That being said, one should nonetheless look to the future with optimism and hope for the best. It beckons with unending possibilities and with technology, we need to start analysing the externalities associated with the adoption of its newer forms. In this manner, by studying the data early, we can pre-empt many of these problems — that are likely to raise their head — and then try to possibly modify the technology in order to get the best outcome. ■

Robotics and Artificial Intelligence have bridged the gap between machine and human intelligence

Atul Kunwar, the President and CTO of Tech Mahindra, steers the company's technology and strategic investments. His focus includes defining the roadmap for the firm and leading high growth businesses.

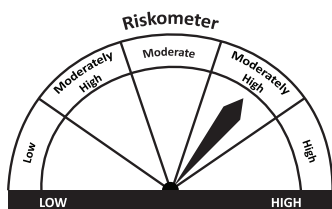
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THE FINAL FRONTIER

The importance of revolutionary developments in space flight spotlights how we are on the verge of an exciting future. **Rand Simberg** analyses just how far we've come, but how little we've actually travelled

Many, including many who weren't even alive at the time, feel nostalgic about the thrilling space feats of the 1960s, with the initial forays to the moon. And though Project Apollo was unsustainably expensive, NASA continues to try to recreate it with a new giant, unaffordable rocket and capsule that it doesn't need to get to other planets, but provides jobs in influential locations. Fortunately, as 2016 showed us, largely due to a major swing from historically risk-averse and politicised government funding to visionary private investment, we are on the verge of a more exciting future for space exploration than those falsely perceived glories. It holds interesting opportunities for both personal travel and profit.

REDUCTION OF COSTS

The past year saw revolutionary breakthroughs in space flight, with multiple intact recoveries of launch vehicles from both the private American rocket companies SpaceX, owned by Elon Musk, and Blue Origin, owned by Amazon founder Jeff Bezos. It is expected that 2017 will see the first reuse of a first stage of a launch system. In the next few years, the Colorado-based United Launch Alliance (ULA) expects to have a new launch vehicle with recoverable engines.

The importance of these developments cannot be overstated; historically, space hardware is expensive because launch costs are high, forcing extreme reliability and low weight. And launch costs are high largely because (with the exception of the now-retired Space Shuttle), the entire vehicle is thrown away after each flight. For example, current ticket prices to the International Space Station (ISS) on expendable Russian launchers are many tens of millions of dollars. Partial or full reuse of the rockets in the next decade promises to dramatically reduce the cost of a ticket to orbit to a few million or even less, which will in turn result in reduced costs of doing and building things there.

NEW COMMERCIAL ACTIVITIES

Taking advantage of the unique weightlessness and vacuum of space to manufacture products unable to be produced on earth has been predicted for years. But due to the high cost of access to space, and NASA bureaucracy on both the Shuttle and the ISS, it has never taken off. That's about to change.

American companies like Made In Space (MIS), Firmamentum, and Orbital ATK are developing capabilities to assemble structures in orbit from raw materials, which will allow large orbital facilities and antennas without the need for expensive large launchers. Firmamentum is working out ways to recycle used plastic bags on ISS into filament for 3D printers. MIS has actually delivered a printer to the ISS, and plans to manufacture high-quality optical fibre in orbit that will allow much higher data rates than those on earth. Space Systems Loral was issued a contract by NASA to develop means of robotically assembling its large communications satellites in geostationary orbit (GEO).

At least three American companies (NanoRacks, Bigelow Aerospace and Axiom) have plans to first attach commercial modules to the ISS, and later separate them as free-flying facilities in the same orbit. These could be used as human-tended laboratories or factories for space-manufactured products or orbital hotels for space workers or tourists. With the first flights of SpaceX and Boeing's crew capsules coming in the next couple years and perhaps Blue Origin's New Glenn vehicle in the next few, there will be several new opportunities for private individuals to visit them at relatively affordable costs.

BEYOND LOW EARTH ORBIT

The last time a human went further than a couple of hundred miles from earth was in 1972, on Apollo 17. That's about to start changing, too. A few months ago, Musk unveiled his plans for a space transport designed to take large numbers of colonists to Mars,





but which he said could go anywhere in the solar system. Bezos has recently restated his own life-long goal of having millions of people living and working in space and is working on his own large launcher to make it happen, with his own money.

The key to enabling excursions beyond Low Earth Orbit (LEO), and eventually developing space, is the utilisation of resources already there, particularly water for rocket propellant and life support. Several private companies have plans to mine it. Planetary Resources and Deep Space Industries both have plans for getting water (and other useful materials) from asteroids. Shackleton Energy plans to mine the lunar surface for large amounts of ice. ULA has laid out a vision over the next two or three decades of thousands of people living and working in 'cislunar' (that is, in the neighbourhood of the earth and its moon) space and has put out a list of prices that it will pay for water in various locations — lunar orbit, lunar surface, LEO, GEO — to fuel its reusable ACES space tug currently under development.

PHILANTHROPIC SPACE EXPLORATION

The drop in the cost of both launches and satellites, with miniaturised 'smallsats' becoming far more capable, will potentially allow private funding of planetary science missions, such as searching for life near Jupiter and Saturn. The geysers of Enceladus, a

watery moon of the latter, seem like the best location for such a search based on data from the Cassini probe. It could mean a return to the days of the early 20th century, when wealthy patrons, rather than governments, funded astronomy.

PERSONAL OPPORTUNITIES

Aficionados of space travel and space geeks have a lot to look forward to. All of the above developments will offer opportunities for personal holidays in orbit and on the moon in the not-too-distant future. They will also offer investment opportunities to get in on the ground floor of whole new ancillary industries. While most of the new companies are currently private, some may go public in the future and, for high-wealth individuals, there will be interesting private placement offerings in both existing and new start ups, from angel investors to venture capitalists. The days of large government space programmes may be ending, but the future for human space activity shines almost as brightly as the sun itself. ■

Rand Simberg is the president of Interglobal Media LLC, a consultant in space technology, regulations and business development, with decades of experience in the industry. He is the author of *Safe Is Not An Option....*



THE BIOTECH TSARINA

The pioneer of the biotechnology industry in India and an achiever par excellence, **Kiran Mazumdar Shaw** combines her prowess in the field with her passion for social causes, says **Harish Bijoor**

Think Biotech. Think India. And you automatically think Kiran Mazumdar Shaw.

If there is any one individual from the Information Technology (IT) and Biotechnology (BT) sector who has contributed so much and is being spoken of in the same breath in Karnataka, and most surely in India, it is Kiran Mazumdar Shaw. Kiran is best known today for being the pioneer biotech entrepreneur from India and the Chairperson and Managing Director of her venture Biocon. Add to this professional resume of achievements, a generous dose of what is not really business and not really business for profit, and you have the complete package that is Kiran. This personality of Kiran is far bigger than the business-side all of us know of.

I met Kiran many, many years ago. It was not for business at all, but for a cause called Bangalore, which has a new name today: Bengaluru. Today, I don't remember the precise event, but Kiran and I were speaking passionately on the subject of the city that is close to our hearts. This was our first meeting and the impression I was left with was a strong sense of commitment to a cause and passion; one that found its way into a very cogent sense of purpose. And that was my first impression of this Biotech Tsarina from Bengaluru.

Ever since that first meeting, Kiran has become more than a mere name in the newspapers. She is a business leader with many avatars and each one reveals a different facet of this complete evangelist who has a finger in many a pie. The beauty of her management style is that she has a keen eye on each of her involvements, business or social. That's the real Kiran for you; forever on the ball.

Every persona has a Yin and a Yang. In her case, the Yin is a pure and hardcore business centred around chemistry and the Yang is the society around her that she cares for so intensely. From the many involvements in each of these spaces, I will pick just two that I am close to in some way or the other. The first is Biocon and the pure passion that has built this large-scale biotech play out of Bengaluru. The second is the Bangalore Political Action Committee (B.PAC), of which she is the president.

Let me paint a quick picture of the two diverse passion-spaces that seem to run the engine called Kiran. And an engine she really is — powerful, pushy, motivated, loud, and forever on the move. Anyone who has interacted with her will tell you that for her, each of these words rings true.

THE BUSINESS KIRAN

Kiran is a very well-documented trailblazer in the space of chemistry and bio-chemistry. But, we need to start at the very beginning, the starting point being the fact that she was the daughter of the Head Brewmaster at United Breweries in Bengaluru. She's

someone who lived with her family in the precincts of a brewing facility, enjoying every whiff of the brewer's sensorials in more ways than one. What possibly started as an accidental push into this world of beer and brewing, led her on to be the lady with the biotech mission we know of today.

She started her early foray into entrepreneurship armed with a degree from the University of Ballarat in Australia and a double major in Biology and Zoology. Brewing, as she will herself say, is possibly the oldest biotechnology known to man. Her early lesson in life was that a woman could not be a Brewmaster in India and that meant she had to head out of the country if she was to be one.

Call it destiny or mere circumstance, but when opportunity knocked, Kiran always answered with a smile. She was given the chance to start out with a unit that would manufacture a plant-based enzyme derived from papaya; an opportunity to make industrial enzymes for the food market. One thing led to another and papaya led to pharmaceuticals for this woman with a zest to do things differently.

Kiran has always believed that one must evolve and reinvent constantly. And that's exactly what she did with her early entrepreneurship moves. We must remember that she started it all in an era when bureaucracy was tough and the attitude to gender was quite different. Kiran moved on from food enzymes to microbial enzymes and powered her vision with her first acquisition of a 20-acre plot, when

Papaya, the fruit whose enzymes played an integral role in Biocon's journey



she possibly needed well nigh nearly nothing of it. That's another trait that is totally Kiran. She is vision-big and is completely confident that she will fill that empty cup to the brim, if not over.

Today, Kiran Mazumdar Shaw is every inch an achiever of high merit who has worked in the business environment of an India that was possibly ten times as tough as it is today. She is the creator of Asia's biggest producer of Insulin, employs possibly India's largest congregation of chemists, has a presence in more than 75 countries, and boasts of a US\$ 712 million in global sales.

Combining her prowess in the field with her passion for social causes, Kiran believes in making a difference with the power of knowledge. The Biocon Foundation and the US\$ 50 million Mazumdar Shaw Cancer Center in Bengaluru are her projects that are making a difference in the healthcare sector for the underserved rural and urban communities in India.

THE SOCIALLY-DRIVEN KIRAN

If you ever do meet Kiran, tempt her with the 'B word'; talk to her about Bengaluru and her eyes will light up. After all, this was where she started it all from. She also feels passionately for causes that plague big cities.

After all the years of meeting at business forums and other events, one morning, a group of us, unified with Bengaluru in our hearts and on our minds, met at a charity walk and one conversation led to another.

Bengaluru was at the peak of its garbage management crisis then; it was spilling out all over and literally swilling on our palates. TV Mohandas Pai was angry. As were the rest of us.

Strong hearts from every realm of business, sports, entertainment and more got together and vowed to put our money where our mouths were. Thus was born the Bangalore Political Action Committee. Kiran and Mohan are the heart and brains of this initiative which is touching millions of lives of those who have made Bengaluru their own. I got to see this side of Kiran's personality up close and personal due to our work at B.PAC.

There are numerous arenas of passion this do-gooder has associated herself with and it would take pages to recount all of them.

She has been awarded time and again for her avatar as a business leader and possibly just as much for her role as a social do-gooder. Kiran evokes strong passion amidst a whole tribe of youngsters who look upon her as a role model and she does not disappoint. Not ever.

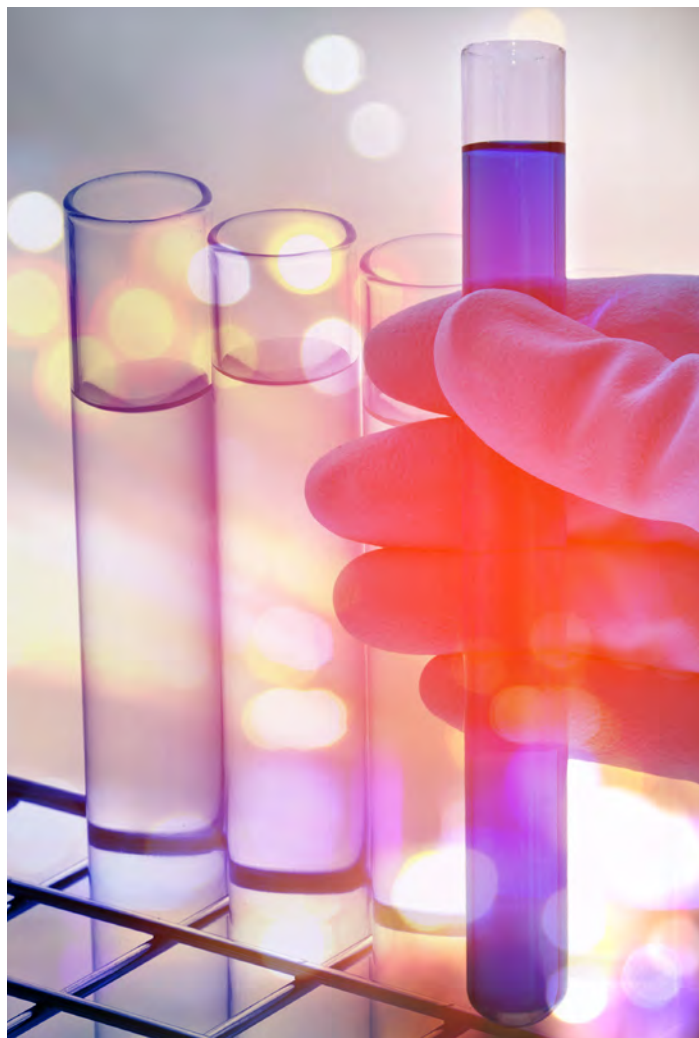
HER PERSONAL SIDE

And, finally, a little about Kiran as a person. Kiran is a careful and natty dresser who knows how to make an entrance at an event and make her

presence felt. She is married to the charming John Shaw whose smile will light up the dullest of rooms and the dullest of moments. John is also the vice-chairman of Biocon.

I believe she has many books in her and that's something she needs to work on now. She needs to pen it all down for posterity. I have never really looked at Kiran as a woman achiever of great merit; Kiran is a business achiever par excellence across the gender divide for sure. She has evened out the field and I say that with pride, and the privilege, of knowing her as a colleague and a friend. ■

Lab experiments
drive research in
biotechnology



Harish Bijoor is a brand domain and a business strategy specialist operating out of Bengaluru. He is the founder, Harish Bijoor Consults Inc. He is active on twitter @harishbijoor



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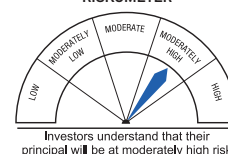
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MEDITATION CALLING!

Meghna Pant pens a tongue-in-check account of what happened when she switched off her phone, her laptop and all things electronic

ILLUSTRATION BY CHARBAK DIPTA

I sit cross-legged on top of a scraggly blue cushion and take a deep breath.

I am strong, I am powerful, I chant.

The guy in front of me lets out a loud burp. I'm about to open my eyes in disdain when I remember that I'm at a vipassana centre. This involves the art of non-reaction. So, I clamp my eyes shut and continue chanting.

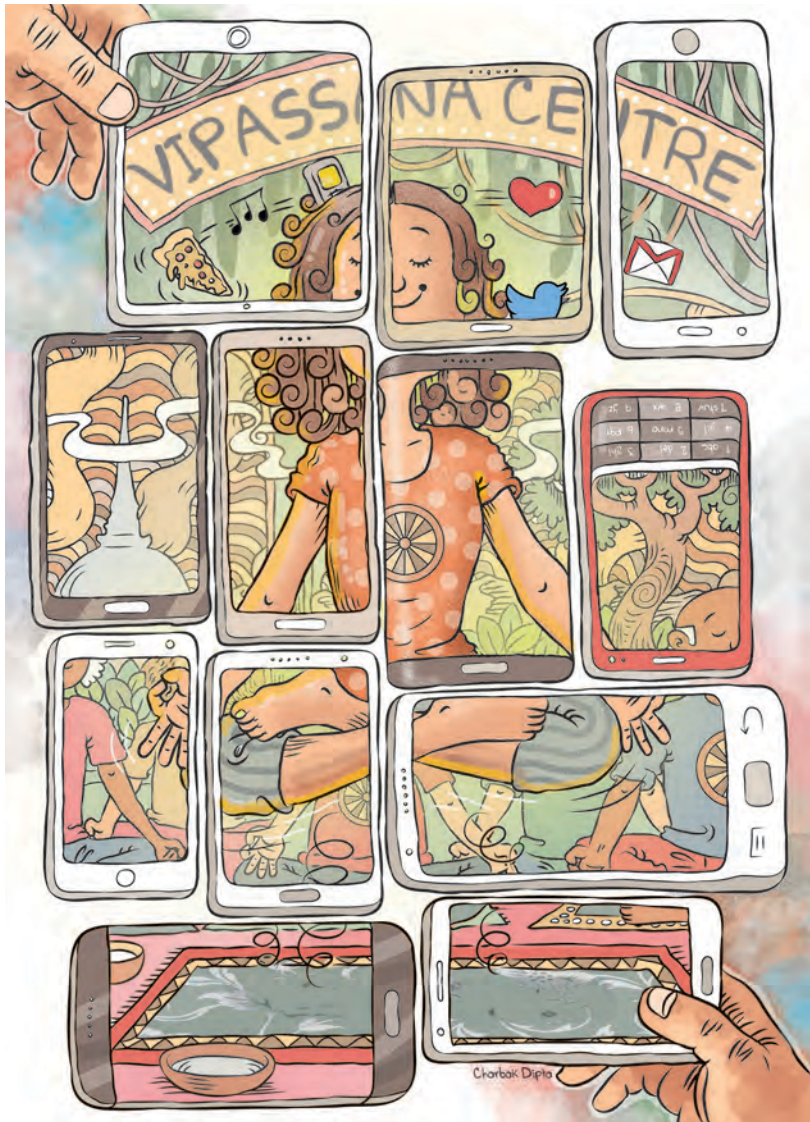
I am pure. I am pure. I smell... nothing.

My profound thoughts are rudely interrupted by the ringtone of an iPhone. Now, I know that I'm in the company of 200 men and women, and in any other place this wouldn't be an anomaly. But, in this place, cell phones are banned, as a rather dour man at the registration desk informed me while confiscating my cell phone (and laptop and sanity). I gaped at my iPhone with the same intensity with which Kate Winslet looked at Leonardo DiCaprio before he sank beneath the cold, murky, blue waters of the North Atlantic Ocean (*Titanic*).

But somebody has defied the rules. I watch the offending charlatan being walked out of the hall by a *sevika*. I see the guy defiantly pull out his phone and scour through it for messages and, like a true Vipassana practitioner, I am filled with understanding.

After all, how is any human being in this, the 21st century, supposed to live without their phone for 10 days? How are we to get through even a single day without external narratives — work, social media, music, celebrity gossip, news? What's a life without these distractions, without the twinkling beep of a new WhatsApp message?

Amidst my chants and the serene atmosphere,



now free of a cell phone's ominous tone, I wonder how my phone is doing without me. What messages are going unread and calls going unanswered?

"Stop it," I hear the instructor's booming voice chide me. "Focus on the sensations in your body. Stop reacting to the vicissitudes of life."

Silently, I close my eyes. I focus on my breath, rising and falling. I enter another dimension where the boundaries of my physical body have dissolved. My leg is no longer numb with pain; it is free. I am free. Everything is red. I feel high without the consumption of intoxicants. Or could this be a chemical reaction to depriving my brain of entertainment for a day?

My phone rings.

"Don't answer it," the instructor tells me.

"But this is not vicissitude," I reply. "This is seeing things for what they actually are." I answer the phone.

Hi phone!

Hey! How've you been?

Good. Missing you like crazy.

Me too! You've lost weight?

Thanks for noticing, phone. They don't give us dinner here, so the last time I ate was 19 hours ago. I think my fat cells are eating each other. So, how are things?

Busy. You've been getting a lot of calls!

Really? Who's calling?

Your boss for one. He said you were 2 minutes 3 seconds late to work today.

Well, it's good he hasn't noticed that I'm not even at work today.

Your ex-boyfriend called to say that he saw you in a red dress today and wants you back.

That's interesting...since I never wear red.

I know! You've even covered me in this hideous brown case. And, of course, your mom called. She's asking if you met any boy at the Vipassana centre.

Well, men and women are not allowed to make eye contact, so there's no chance of meeting someone.

Really? I thought I saw you take a sneak photo of that cute white boy in the canteen today.

Err...you saw that. I mean...no way!

My bad! My camera vision is not what it used to be in 2013 when you bought me.

Looks like it's time for an upgrade.

What?

Nothing...what's happening with my apps?

Well, iTunes has charged you for music you didn't download...again.

Fantastic.

Uber has given you three free rides over this weekend.

Awesome timing, as usual.

Scootsy has asked if you'd like to continue your double-cheese-crust pizza delivery every night?

Who me? Cheese? Pizza? Nah! Tell them I want a vegetarian salad instead.

Ok.

Or not. You know. I ate that pizza every day last month and put on only three kilos. That's nothing right?

Err...if you insist. On that note, your Fitbit is

asking you to move.

Vipassana doesn't allow exercise.

How convenient for you.

Rrrright...anything else?

Yeah...your gynaec called and asked if you have started that pill yet....

What? Must be the wrong number.

But....

Hello...I can't hear you...hello....

The next 10 days pass in a blur of deep breathing, hunger pangs, numb legs and many missed calls from my phone. Finally, the 10th day arrives. The 'Noble Silence' is broken and 'Noble Gossiping' ensues. I don't talk to anyone. I head straight to the registration desk and politely ask for my phone back. I switch it on; my hands are trembling as the anticipation of expecting to see a barrage of messages takes hold of me. The screen flickers, the logo fades, my phone beeps and it's go-time! Excitedly I open the messages.

Husband forget wedding anniversary? Wife made burnt chapati? Mother-in-law thinks children not yours? Call Swami at M-A-T-R-I-H-A-R-M-O-N-Y before 8:45 pm nighttime.

Sick of fat? Jiggling Hip. Thigh. Tummy. Loose 5 inches. See weight loss miracle. SMS 56777.

I can't believe it! Ten days away from the world and spam is all my life's worth?

Never mind. I'm sure at least *someone* called. No names in red. Bah! Then again, my phone was switched off so...Just then, mid-thought, my phone rings. It's from an unknown number but I answer anyway; my voice is shaky from not having spoken in ten days.

Hello?

Hello, Meghna madam? This is Bharti from Airtel.

Oh hello, Bharti. Your call is just the thing I need to cheer me up.

Really? Well, madam, we have a special package offer for you — 4G wireless service with additional 100 minute free calling only for Rs.100.

I already have that.

Errr....

But I can reinstall it on my phone. No problem.

Errr....

And do say hi to Sunil from me.

The telemarketer hangs up on me. That's a first.

I decide right then to schedule my next brain defrag the day the world stops using mobile phones.

Till then, I'm calling Bharti from Airtel right back. ■

Meghna Pant is an award-winning author, journalist and speaker whose new book *The Trouble With Women* has been published by Juggernaut. Her short stories have appeared in Indian and international publications.

IMMERSED IN TECHNOLOGY

Hooked onto programming as a teenager, he grew up to launch the technology solutions firm Incedo. **Tejinder Singh Miglani** talks to **Anita Vasudeva** about embracing changes in a fast-developing world

PHOTOGRAPH BY ANKUSH MARIA

Technology is his life. Delhi-based Tejinder Singh Miglani is a technologist who started Incedo Inc. with a focus on crafting responsive technology solutions, fresh ways of doing business and harnessing disruptive technologies to become the 'new normal'. The IT-enthusiast and businessman, with a B. Tech. in computer science from IIT Delhi, and an MBA from IIM Calcutta, seamlessly blends his passion with his work life.

Tejinder's office in the Incedo building in Gurugram is spacious, well-lit, and minimalist. The large desk is clear of anything extraneous. The uncluttered ambience seems to mirror the clear thinking process of the man who leads from the front.

His interest in technology is our conversation-starter and I ask him what fuelled it. He says, "When I was young, kids rarely knew what they wanted to do. It mostly depended on how well you did in your exams. Our first exposure to computer technology was in 1986 when they had just started teaching BASIC in my school in Panchkula, in Haryana. We could do one session a week for seven months. It wasn't cheap for a middle-class family, but I was interested and fought hard to convince my dad. By the time I was in the tenth standard I knew programming really well — more than one learns in the first-year of college. You could say that's how I got hooked on to technology — through programming, which I loved."

By the time he was in college, the usage of computers had grown and it had become obvious that they were going to drive the future. But, he says, "There were some trends no one could foresee — like computing fitting into your pocket. At IIT Delhi, I studied Computer Science and Engineering, majoring in hardware and chip design. I did my MBA with a focus on finance and IT. I was thinking about using Info Tech for finance. So, technology became my profession, my work and in turn, my whole life."



The biggest trend he sees is AI (Artificial Intelligence) and machine learning. The impact of Cognitive Automation, he says, will be felt in the lives of people and enterprises. "In the enterprise world, there is a huge potential to disrupt the way tasks are done normally.... Chatbots are going to be everywhere. Even now, 20 per cent of the time, the voice on the other side of the phone is a bot. Robotic Automation is replacing many basic Customer Service functions....and claims processing, mortgage applications, opening of bank accounts, etc."

He reflects on how technology is changing decision-making, which used to be based on experience and instinct. Data now plays a big role in decision-making which is consequently more operational and accelerates execution.

Tejinder emphasises, "How we interact with technology around us can change completely. Right now we touch our devices — soon we won't have to. We'll be talking or making gestures and things will work for us. It's already happening — with Alexa and Google Assistant and Siri — but it can be expected to soon be at a different level altogether. Our lives will be immersed in technology." He's talking about the kind of intelligence where his TV could be pre-programmed to understand that when he switches it on at a particular time, it is a particular show that he wants to watch. Or, he could just say the name of a show and it would switch to the channel. "We are already at the cusp of that kind of readiness. The technology is ready. It is just a matter of integration now. The larger infrastructure needs to be ready. For example, homes would need to be retrofitted to talk to technology. Only then can it become mainstream."

He elaborates on major changes that technology will bring about in social infrastructure, which will increase efficiency beyond imagination. These may take longer to come to India. The country is on the verge of a big change, and obviously in transition. Tejinder points out that we have to still realise the full potential of what technology can give us. "People understand that we are heading in the right direction and want to be here. There was a time when a lot of Indians felt they didn't want to be in the country. There was the 'brain drain'. We're past that.... There is a lot of positivity and potential."

Of the future, he believes that it is possible that India may leap over technological advances used in the developed world and move to a completely different model. "We don't have to follow the same path — we may have a good standard of living in a new world.... Our reality is different."

His own life is immersed in technology. I ask how it affects him. He states simply, "Well, definitely functionally; how I consume entertainment for instance. Then, there is the way I interact with my family." He talks of how his family now knows exactly

where he is even when he is travelling, thanks to tech — from WhatsApp to Flight Trackers. It's a far cry from the days of yore when his father travelled and they didn't know how he was till he returned.

Tejinder says it's easier to follow interests and learn new things now. To learn chess, he turned to the internet, took tutorials, and watched videos. He even educated himself in machine learning through online classrooms with Stanford professors. A few years ago, this would not have been so easy. He shares how he recently set up the Karaoke software on his laptop in under two minutes. "I love singing and can now sing with the latest songs. My laptop is everything. Technology has taken away the clutter. Saying that you don't have the money or equipment is an excuse. If you are really interested, you can access everything."

The way he works — from anywhere and at any time — is also a result of what's technologically possible. Tejinder says, "In my industry, I could have no schedule. I don't need to come to office unless I am meeting someone. But you're pretty much tuned into work 24/7. Earlier this was physically impossible. When I started Incedo, my schedule and demands changed. My biggest challenge was how to spend time with my kids. Today, I can work from home and be there for them when they are free. Work begins again in the evenings. We're on the verge of being a different world."

Data Analytics have become easier with the business intelligence a computer provides



"We are already at the cusp of that kind of readiness. The technology is ready. It is just a matter of integration now."

Tejinder Singh Miglani

And, as he speaks about his children (Baltej who is 13 years old, and Angad who is 9) I ask him how he feels about them growing up in a world which is 'immersed in technology'. Like most technologists around the world, he is clear that it is "important for kids to be educated about technology before it is handed over to them. It's like a 'shining knife' and they need to know its benefits and pitfalls.... Everything that you write online is there forever. It is etched in the collective memory of the world. Personally, we have withheld things from them. For instance, they are not going to use Facebook till we think they are ready. As it needs a certain level of maturity."

For a man whose work is always tailored to find solutions for the customer, Burgundy is perfect. He is sincere in his appreciation of the relationship manager and the team that is so responsive. On his interactions, he states, "To some extent, it goes beyond the client-manager relationship. It's friendly. Burgundy builds trust. When dealing with a financial institution, trust is the number one factor. You have to trust both — intent and competence." Burgundy works extremely well for his financial needs. "They go beyond the transactional. Other financial institutions, even good ones, do have a transactional approach. For me, the holistic strategic approach is critical."

I ask him about his interests beyond work. Singing has been with him since childhood when he trained in singing *kirtans*. He also enjoys Karaoke with his wife Deepa, while Baltej is learning Western vocals and completes the singer troika in the family. Chess is another recent interest and here his companion is his younger son, Angad. "We have a one-year score card. Most likely, he'll win.... We also do a lot together as a family. We try to go on three to four trips a year. The journey is becoming more important than the destination. We recently immersed ourselves in Coorg. We walked a great deal.... I do that when I travel for work too. I don't like to be indoors too much. The layout of the city, the buildings tell me a great deal. I love to walk, and try to never miss a morning walk."

It seems fitting that a nature enthusiast like him desires to work towards saving the environment. His mantra is SOS – Switch Off Something. At Incedo, they've changed every single light to LED



and are dedicated to saving energy and paper. They even participated in the car-free day that Gurugram practised for a while.

As our conversation leads to a close, we speak about the impact of technology on the contemporary social order. Tejinder is more than mindful of the disruptive possibilities of automation. The challenge will be providing employment to people when their tasks are replaced by faster, more efficient technology. He refers to a programme he attended where Jeff Weiner, the CEO of LinkedIn, discussed concerns about how our children need to be ready. A key aspect of being ready is skilling up to be able to respond to new business models and technologies. That, the savvy entrepreneur believes is the route to the future! ■

Working in the virtual world has made communication and learning ubiquitous

Anita Vasudeva is a senior writer, executive coach and leadership consultant based in New Delhi. She established Roving Writers, a company aimed at creating and delivering excellence in communication.

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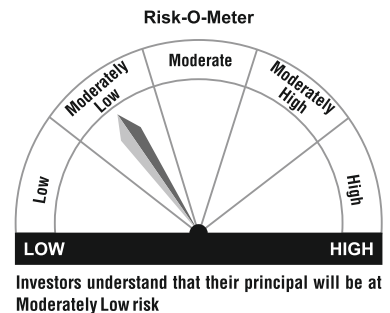
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THE VIRTUAL LEAP

Our universe is becoming smaller with greater interconnectivity. **Wade Foster**, CEO, Zapier — a company that connects web services together — interacts with **Sahil Parikh** on going remote

“A team is not a group of people who work together. A team is a group of people who trust each other.” - Simon Sinek

Workplaces are breaking stereotypes, simply by virtue of being virtual. The future of work is distributed. The 9-to-5 timeline was created in the industrial age when people had shifts. Today, knowledge workers, armed with the ubiquity of broadband and sophisticated online software and apps, can work from anywhere and at any time. Plus, forward-thinking companies want to hire the best from all over the world so location and/or ‘relocation’ no longer matters. In my own workplace, there is a team member based in Europe, who is currently exploring the vineyards while she takes care of my customer support.

Ironically, as we become more global, the world becomes a much smaller place, and successful companies are changing the rules of the game by functioning remotely. I touched base with one such company, Zapier. Led by co-founder and CEO, Wade Foster, Zapier is a 100 per cent remote company that connects web services together. For example, Zapier makes it easy for a marketer to connect their e-mail marketing software to their analytics app. Here’s what he had to say on taking the virtual leap:

When did you plan to go remote? Did it just happen?

Zapier started as a nights-and-weekends project, so from the very get-go there was no office. We got used to working through chat and other online tools so when we started hiring people, it felt natural to hire people who we liked working with. Those people didn’t live near us, so the remote set-up simply continued.

Trust is a big factor when running a remote team. What were the challenges you faced while growing your team?

One of the easiest ways to build trust is to make sure

documenting your work is part of everyone’s job. When people are sharing their work, it’s easier for managers to assess what’s happening, for colleagues to collaborate and ultimately, for trust to be built throughout the team.

Is there an impact on ROI by working remotely?

How do you measure this?

The biggest ROI of working remotely is the calibre of people you get to work with. Because you aren’t constrained to hiring within a 30-mile radius, you wind up with a much more diverse, talented applicant pool to select from. The ROI of getting to work with smart people is hard to measure, but it’s big!

How does the Zapier team brainstorm new ideas?

We tend to not have ‘brainstorming sessions’. Rather, new ideas come from lots of places. They come from a customer making a recommendation; they come from the marketing team interviewing a teammate and even from us doing QA for the app. New ideas come from everywhere. Most of the new ideas don’t get worked on, but they do get logged. And, over time, the best ideas make their way into the product.

What does it mean today to really be a ‘virtual workspace’? What’s the first step towards getting there?

Today, a solid internet connection is really all you need to set up a virtual workspace. With access to an internet connection you can set up team chat tools, project management tools, video conferencing, and the other helpful apps you need to collaborate with your other virtual teammates.

What are the top trends in going remote these days?

Remote work is a bit trendy, but it’s also new. That newness means a lot of folks still have questions about the basics like what tools should I use or how do I manage people.

Facing page: The world is the new desk with greater connectivity and remote accessibility

What does the virtual work culture feel like?

If you've ever been a part of an Open Source Software (OSS) project then it feels a lot like a more organised version of that. If you have been a part of OSS before, then the closest cultural feel might be that of a well moderated online community forum like a sub-reddit.

Does your team ever meet, perhaps at yearly retreats? Is it tough for people who have only interacted virtually to be around each other?

Absolutely! We do full team retreats twice a year. And people who live near each other meet up occasionally for lunch or some other occasion. For us it's never felt awkward to interact in person. It's exciting to be near people you only interact with online.

Any thoughts on how VR/AR technology is shaping up to change the future of work (collaboration, communication and more)?

VR/AR is neat, but their applications for a modern workforce are still works in progress.

How do you maintain the human touch without a physical workspace?

The retreats go a long way towards building camaraderie. We also do random pair buddies where we all spend a half hour each week paired with someone at Zapier, getting to know them a bit. Plus you interact with your teammates all day on chat so you get to know their personality and sense of humour that way as well.

Can traditional businesses break the stereotype of zero bricks and mortar? What are the advantages for them of going remote?

Certainly! If you're a business that needs no retail presence and operates solely online, then going remote is definitely an option. The biggest advantage is that you can start hiring remotely too, which will attract talented people from around the world.

There is so much written on the future of tech these days. What are your top three picks for 2025?

First, self-driving cars will be pervasive. Secondly, energy will come to the forefront of tech. And thirdly, education will undergo a massive shift due to automation for routine jobs.

What about your clients? Since most companies still prefer a real-world face-to-face interaction, how does Zapier factor this into the mix?

We use Google, Facebook, Twitter, and more all day long and many of us have never even met someone that works there. Face to face is important for some things, but our comfort level for interacting with businesses online is higher than ever. ■



“Face to face is important for some things, but our comfort level for interacting with businesses online is higher than ever.”

Wade Foster

Sahil Parikh is a web entrepreneur, founder & Chief Trailblazer of Synage Software. He is the author of *The SaaS Edge — How Companies Can Leverage SaaS For Competitive Advantage*.

THE SPINNER AND THE WEB

Storytelling has evolved since the time of the first printed book. **Kiran Manral** travels through the ages and takes us through the pages of literature as it made its way from print to pixel

The most revolutionary moment in the history of mankind, after the discovery of fire and the invention of the wheel, would perhaps be the invention of the printing press when Johannes Gutenberg created the first printed book — ‘*The Forty Two Line Bible*’ — in 1455 with his invention of movable typeface. Interestingly, movable type had already been in use in Asia, but Gutenberg cast his type in metal alloys which made mass production easier. With this one invention, literature was out of the libraries of the privileged and the religious orders, becoming accessible to anyone who could afford to buy a book and had the learning to read it. Gutenberg democratised the accessibility of the written word. He heralded the dawn of the newspaper and the journal and with it, the serialised novel and the short story format which had devoted readers in the industrial age.

Rapid innovations in printing press techniques made it cost effective to print mass literature. Writers like H G Wells found that this allowed them a lucrative career in writing fiction for these journals, which eventually gave us the first science fiction book, *The Time Machine*. Sir Arthur Conan Doyle found success in his serialised fiction in *The Strand Magazine* in the late 19th century. This changed the structure and impacted the popularity of serious literature.

Every advent of technology has been heralded by doomsday predictions about the death of literature. Back in 1992, Sven Birkets wrote *The Gutenberg Elegies*, where he declared that the printed book would die out and become a ‘vestigial order’ while we disseminate ourselves into the great unwashed threads of the internet. But literature has survived, as has the printed book, rather robustly at that. The form and structure of how we consume it has changed radically though.

The advent of the Kindle and the e-reader haven’t snuffed out the physical book, not yet. To quote from an article in *The Guardian* where Neil Gaiman recalls a conversation with Douglas Adams, “Look at a

book. A book is the right size to be a book. They’re solar-powered. If you drop them, they keep on being a book. You can find your place in microseconds. Books are really good at being books and no matter what happens books will survive.”

Stories are stories, whether told in print, through the airwaves, through celluloid or through the *hit enter* of a Twitter update. In fact, in this era of ‘byte’-sized information and research, we now have the attention span of a goldfish, which affects the manner in which we consume literature. E-readers compress hundreds of books into a single, lightweight device we can tote around every day to read while commuting or on our travels. Mobile reading platforms like Juggernaut and the forthcoming Readify offer reading on a smart device via an easily downloadable app. Digitised books are presented both in the traditional novel size and the shorter chapter-sized reads.

Technology today hasn’t just radicalised how we consume literature, it has also radicalised the way we produce and interact with it. As Nietzsche stated pithily, “Our writing instruments are also working on our thoughts.” Interestingly, he typed this sentence out on a Malling-Hansen Writing Ball, which looks like a round ball, but has keys with levers attached to a typeface. His writings with this device were terser phrasings, in keeping with the limitations of the medium. As producers of stories, we write differently with pen and paper, with a typewriter, with a computer and now, with gadgets like the iPad and smartphones. The availability of software that assists the writing process like Scrivener, Ulysses III, Hemingway, to name a few, assists writers in the rather unruly process of channelling their ideas into coherent streams of narrative.

Before the World Wide Web was ever introduced to the public, it already existed in vivid dystopian versions created by science fiction writers. Interestingly, the term cyberspace itself came from literature. Some say it was coined by the author William Gibson in his 1984 novel *Neuromancer* which

Facing page:
E-readers are fast
becoming the first
choice of bibliophiles

foresaw hackers and the internet before they actually existed in the real world. Other versions attribute it to Gibson's earlier work. His 1982 short story *Burning Chrome* had two hackers do a series of online heists.

Writing differed endemically in the construction between typewriters, then word processors and now computers with software available to help the writer. The control over the manuscript, the ability to go back, edit, revise, correct, rewrite, shift entire chunks of material, is a level earlier writers who painstakingly handwrote or typed out their manuscripts could perhaps not even imagine.

Will literature be able to survive the advent and relentless onward march of technology? After all, much of the written word that we consume today is gone in 140 characters and ephemeral FB statuses. Nano Fiction is a movement. A Twitter movement, also on Facebook, called Terribly Tiny Tales has micro narratives condensed into a few words. Six word stories on micro-blogging platforms encourage the condensation of an entire plot into these few, well-thought out words. Twitter also has fiction called Twiction as a form. Wattpad, self-publishing, collaborative publishing, print on demand and more have changed how literature is created and disseminated. Flash Fiction Online is a website that delivers 1000 words stories to one's inbox. Podcasts are also gaining popularity, as are audio books; perfect for those who want their daily dose of literature during their commute, but need to drive or would rather not read. E-readers like the Kindle are designed to replicate the print reading experience as much as possible. Collaborative forms of writing, where authors upload chapters and solicit plot trajectories from readers and write accordingly, have also become common. Pay by chapter is also popular on mobile reading apps.

The rise of self-publishing has resulted in published works which find their readership despite not being backed by traditional publishing houses. The e-reader promotes disposability at the hit of 'Delete.' In Japan, novels are being written on cell phones to be read on cell phones. An author called Aya Karpinska has created a visual story which uses text on a white background, in different forms blurred, clear, font sizes and type. Ironically, a website called Project Gutenberg online founded in 1971, has converted thousands of print volumes into e-books and has uploaded them online to create perhaps the largest online repository of free books. You can also sign up at some websites like DailyLit and get a chapter of a novel delivered into your inbox at a specific time every day.

What form will literature evolve into next? We don't know yet. All we do know is that we are poised on the brink of a gigantic leap of faith and storytelling as we know it might never be the same again. ■



Will literature be able to survive the advent and relentless onward march of technology? After all, much of the written word that we consume today is gone in 140 characters and ephemeral FB statuses.

Kiran Manral is the author of six published books across print, Kindle and mobile reading apps. Her book, *The Face at the Window*, published in 2016, has been listed as one of the best books for the year.

THE TIME TO UPGRADE?

This world is our plaything, and, like our other playthings, it too constantly needs to be upgraded. **Gopal Sathe** delves into the realm of futuristic technology and where the world is going with it

Technology is an integral part of our lives — everything from our cars to our homes to those handy little computers we carry around in our pockets and more!

And, this year's CES (Consumer Electronics Show), one of the world's largest consumer electronics fairs, hosted in grand old Las Vegas, had some major announcements from the big players.

The world of technology that encompasses all of us has a host of offerings. So, from the latest in wearables and smartphone tech, to virtual reality and entertainment, there's something for everyone!

MAKING YOUR HOME SMARTER

Let's kick things off with some home-grown, smart-home innovations — Delhi-based Oakter is a home automation company that specialises in smart-home kits that are installed for your appliances giving you control at the tip of your fingers. Using the smartphone app you can schedule times for your devices to switch on or off or manually control them at any time.

SMART HOME ASSISTANTS

How about your very own Tony Stark-like J.A.R.V.I.S. program that can give you all kinds of details just by asking? That's quite real too. Lenovo's latest Smart Home Assistant (a mirror of the Amazon Echo) uses Alexa's cloud-based voice services to play music, search the web or order a pizza for you. It comes with three colourful speaker grills and Harman Kardon audio to boot! Think of it as version J.A.R.V.I.S. 0.1.

SMARTER CARS FOR THE SMARTER DRIVER

Google, Uber and a number of other companies are already working on deploying self-driving cars on the streets. If you happen to be in Arizona and call for an Uber, don't be surprised if one shows up sans driver. Then, of course, there's Tesla — the futuristic electric car has been a strong 'driver' for autonomous cars;



their soon-to-be-launched Model 3s will feature self-drive capabilities among other advanced features, so you can sit back and enjoy the ride.

SUPER SLIM, SUPER SMART TELLYS

LG's new W-Series are OLED, 3D, 4K smart TVs that are once again, dressed to impress. From making TVs less than a centimetre in depth, the company has somehow managed to shave off a few more millimetres down to a wallpaper-thin design; albeit one that costs about 4000 USD. If you're wondering where the mechanics have gone to, they've been neatly tucked away into the accompanying Dolby Atmos Soundbar.

CAMOUFLAGING HOME ENTERTAINMENT

If you don't like clutter about your home, consider the Bang & Olufsen Beoplay M5 — a small cylindrical wireless speaker that can deliver audio to fill an entire room while inconspicuously hiding amongst the furniture. You can stream music using Chromecast, Bluetooth, Airplay, and Spotify. There's a soft wool covering specially designed to enhance acoustics



Top: The B&O Beoplay M5 blends well with its surroundings

Above: The Alexa-based Lenovo Smart Home Assistant is attractive and efficient

while a pearl-blasted aluminium disc at the top doubles up as a touch based volume control option.

VIRTUAL REALITY, GAMING COMES TO REAL LIFE...ALMOST

Devices like the HTC Vive, Oculus Rift and Microsoft's HoloLens are 'virtually' taking the world by storm. From the PlayStation Move to the controller-less Kinect to virtual reality gaming, dispatching an enemy in the game-world is now as real as swinging your hands like you were holding a sword. HoloLens layers a virtual world over the real one and adds virtual elements on top of real world items allowing you to play games while interacting with everything around you. 3D just got a little more 'realistic'.

3D PRINTING, A WHOLE NEW PLAYING FIELD

Speaking of 3D, did you know that you can actually buy a 3D printer now for your home? This could allow you to create all kinds of things from artwork to models, toys and more. But let's not sweat the small stuff and think big; the Chinese, for one, are using 3D printers to build entire homes. In the Philippines you could soon stay at the world's first 3D printed hotel.

HEADPHONES THAT LISTEN

While earphone technology may be getting more compact, some companies believe in retaining aesthetics and size but throwing in functionality to compensate. The Vinci headphones, for example, come with their own personal assistant dedicated to doing your bidding when asked. From giving you weather updates to booking you an Uber because you asked nicely, the AI is designed to do so much more. Of course, they sound superb as well!

TIMING ISN'T EVERYTHING

Garmin's luxurious Fenix Chronos comes loaded to the hilt with features from a highly accurate heart-rate monitor, to a pedometer, built-in GPS, compass, accelerometer, barometer and altimeter all packed into a gorgeous, premium looking design. And, I'm willing to bet that its one week battery life will make it all the more popular among the jet-setting, health-conscious folks out there.

ACTION VIDEOS GET A SHOT IN THE ARM

YI has now announced the YI 4K+ that, like it's name says, can shoot action videos at 4K resolution @60 fps. This makes it a pioneer in the segment and not a bad looking one at that. Aside from impressive hardcore specifications like an in-camera 3-axis gyroscope, 3-axis accelerometer stabilization, USB 3.0 (Type-C) connector and capturing stills in RAW, it also features electronic image stabilisation and voice command capabilities for shooting modes and switching it off. ■



Clockwise from top: Microsoft's HoloLens is used to generate a virtual environment; Its one-week-long battery life makes the Garmin Fenix Chronos smartwatch very desirable; LG's W-Series OLED, 4K TV which is now wallpaper-thin; The Vinci headphones sound superb and are equipped with an AI assistant

Gopal Sathe is a personal technology and business journalist who for the last 12 years has been writing about latest gadgets, and how they impact our day to day lives.



CONNECTING THE SPACES

From building materials and art decor, to architecture and simple home appliances, **Ashiesh Shah** walks us through today's ultra-modern, state-of-the-art, technology-infused areas

The use of technology in homes goes far beyond the idea of automation. Today, both homeowners and architects alike are aware of sustainable materials and practices. 'Up cycle and recycle' is the new mantra and designers are coming up with innovative new technologies to achieve this. Sustainability and vernacular technologies, concerns of ecology and built form are becoming more important in both architecture and design in general, and India is currently on the cusp of a design revolution.

Not only has technology affected the way a space is constructed and designed, its far-reaching effect can also be seen in the smallest elements in a space — be it a light, a piece of furniture or even textiles and fabric.

HIGH-TECH NEW MATERIALS FOR INTERIORS

Materials like Vulcarix, with a stunning texture, is made of recycled glass, sediment and a small amount of aluminium nitride, fused together at 900°C. The sponge-like material is less dense than water, yet highly robust. Extremely efficient at absorbing sound, it's an all-in-one alternative to concrete, fibreglass, mineral wool and asbestos.

Calme/Almute, on the other hand, is a high-performance sound-absorption panel made of fine grains of aluminium. It is permeable to air and liquid and its panels are excellent for use in damp environments. Available in various finishes and colours, the once popular outdoor material is now finding its way into interiors.

A new name for one of the oldest textiles known to man, Barkcloth represents the continuation of an almost forgotten African craft. Farmers collect the fibrous bark of the *Ficus natalensis*, which is then crushed into a non-woven textile. The cloth can be dyed, fireproofed and laminated. It's often used in furniture and lighting and could be ideal for adding a little colour and texture to a wall space.

Cascade Coil drapery is an innovative material that will allow you to play with — and direct — light. The fabric, like aluminium coils, is available in various sizes and finishes. Fire resistant, lightweight and flexible, it's easy to install and can be used as anything from conventional dividers, wall panels, and curtains to ceiling panels. If you want to try something eco-friendly, vegetable paper, slices of carrots, beetroots, cucumbers and leek are used to create a translucent paper, perfect for lining furniture and walls. It's relatively fragile so sandwiching it between two layers of glass is ideal before installing it.

ART AND TECHNOLOGY

Interestingly enough the love of technology also finds its way into the type of art people collect today; the interest in kinetic and technological art, for instance, is booming. In several homes these days, large video



artworks are beginning to take centre stage in the living or entertainment rooms.

Art is an integral part of my projects and I think that video art or moving sculpture is a great way to bring another dimension to a space. For example, I've used the iconic clock designed by *Humans since 1982* on a recent project. It brings together two elements of telling time — digital and analogue — in

Facing page: A contemporary living room's interiors

Above: The iconic *Humans since 1982* clock that brings together digital and analogue in a complex yet artistic way

a complex yet artistic way. It uses 24 analogue clocks to create mesmerising patterns that transform into numbers as the clock works. It definitely adds an element of intrigue and innovation to the space.

Another artist whose work I think works very well in this context is Ranbir Kaleka. With a well-concealed projector, he adds motion to an otherwise still canvas painting. The projector throws shafts of light onto the canvas making it seem as if the subject of each painting has come to life.

If space is tight, video art is also a great option. I've used video works by young artists like Rohini Devasher, Neha Choksi and Shilpa Gupta. If you invest in the right video work, it's easy to store and display and it will definitely bring the space to life.

HOMES OF THE FUTURE

Experimenting with art and new materials is always great, but the use of more obvious technology in the form of home automation has also become a common element in homes today. Until fairly recently, automated central control of building-wide systems was evident only in large commercial buildings and expensive homes, but this trend is now spreading to a wider audience. Home automation (or smart homes) often involves the control and automation of lighting, heating (thermostats), ventilation, air conditioning (HVAC), and security, as well as home appliances like washers/dryers, ovens or refrigerators/freezers that use Wi-Fi for remote monitoring. The home automation market was worth US\$ 5.77 billion in 2015, and is predicted to reach US\$ 10 billion by the year 2020.

There are plenty of advantages that come with automation; one clear advantage is the unmatched potential for energy saving and thus, a savings on cost. At the most basic level, home automation extends scheduled programmability to various aspects of the home so that you can customise your energy usage to your daily schedule. With more flexible home automation systems, electrical outlets or even individual devices can also be automatically powered down when they're not needed. There's also the idea of convenience. It can virtually eliminate small hassles such as turning the lights off before you go to bed or adjusting the AC when you wake up.

Many systems come with remote dashboard capabilities these days, so forgetting to turn off that coffee pot before you leave no longer requires a trip back to the house. Simply pull up the dashboard on a smart device or computer and turn off the coffee pot in a matter of seconds from wherever you are. Home automation gives you access to control devices in your home from a mobile device or PC irrespective of where you are on the globe.

Of course, there are things to consider before you simply jump into automating your life. Decide



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which system is right for you; think about how far you really want to take home automation. Today there are voice activated options that are easily available and very reasonably priced. Just keep in mind however, not all systems are compatible with one another. It could just happen that you may opt for a security system that may run on Platform A, while your smart-thermostat may run on Platform B. This would require you to use different apps, or control panels which can be a little cumbersome.

To truly leverage the convenience of home automation, you may need to invest in a centralised technology platform to control all systems and devices from one location. You might think that

Above: Technology makes managing home automation from a hand-held device simple and convenient

Facing page: Video installations, like this one at the fourth St. Petersburg International Cultural Forum, are becoming popular in interiors of homes and offices



the idea of getting your smart home started is overwhelming, but don't worry. It's actually easier than ever to start automating your home — provided you know your options.

If you want to start slow, there are plenty of easily available (and cheap) options. Amazon's Alexa-controlled Echo speaker is one. The wireless speaker uses nothing but the sound of your voice to do multiple things from searching the Web, creating to-do and shopping lists, shopping online, getting you instant weather reports, and controlling popular smart-home products, all while your phone stays in your pocket. The Nest smoke detector for example can talk to you and let you know when there's a problem and alerts can be viewed or silenced from your smartphone. Phillips Hue is a good option for automated wireless lighting, presenting users with an easy to operate system to control lighting using their devices and or voice control.

REMOTE MONITORING

My own home is automated and this is perhaps one of my favourite features. I collect pieces of design and art and often do a fair amount of travelling. I like that I can keep an eye on my apartment while I'm away. Remote monitoring can put your mind at ease while you're away from the house for extended periods. Closed circuit TV (CCTV), Nanny Cams and more are great options for monitoring your home or office

when you're out. As long as it's connected to the net, you can access the system and view all activities from a smartphone.

For new users though, productivity and technology don't always seem to get along. Often enough, getting the hang of these new devices can seem daunting. However, when used correctly, tech apps and tools can be your productivity secret weapon. Technology has provided us with seemingly endless options for getting things done more efficiently and, in quite a few cases all it takes is a spoken command from you. ■

Not only has technology affected the way a space is constructed and designed, its far-reaching effect can also be seen in the smallest elements in a space — be it a light, a piece of furniture or even textiles and fabric.

Ashiesh Shah has created his own niche in the world of design. The award-winning architect and interior designer has an impressive array of projects like Le Mill, Nido and Otlo under his belt.



THE SCIENCE OF COOKING

Contemporary cooking is a delicate science whose ‘technicians’ are constantly innovating. **Antoine Lewis** pays homage to the humble beginnings of Molecular Gastronomy

It's been called cooking for eggheads, Techno Cuisine and Star Wars cooking. It's popularly known as Molecular Gastronomy: a term that, was coined by two scientists to describe the application of scientific principles to culinary practices and to the experience of eating.

Physicist Nicholas Kurti, who had been studying the science of cooking since the late '60s, was looking for a catch-all phrase that focussed on the chemical and physical processes of cooking. He came up with the term 'Molecular and physical gastronomy' along with his collaborator and physical chemist Hervé This. After Kurti's death in 1998, This, now the foremost scientist in the field of the science of cooking, shortened it to Molecular Gastronomy.

Ferran Adrià in Spain was the first chef to embrace this approach. Adrià started to cook using scientific modernist techniques at his Michelin-starred restaurant El Bulli in the mid 1980s when he moved up from line cook to head chef. He began experimenting with gels, foams, textures, and spheres, creating famous dishes like a consommé served in the form of tagliatelle pasta that dissolved back into consommé the moment it touched the palate.

In the mid-'90s, celebrity chef and proprietor of The Fat Duck, a restaurant in Berkshire, England, Heston Blumenthal, also took to inventing intriguing concoctions. These included bacon and eggs and grain-mustard ice cream, and snail porridge. He was

influenced by Harold McGee's *On Food and Cooking: The Science and Lore of the Kitchen*, the book that helped bring molecular gastronomy to the world.

Soon modernist kitchens started to look like science laboratories. Along with pots and pans, it became common to find centrifuges, class IV lasers (normally used for surgery and research), humidifiers, vacuum sealers, liquid nitrogen tanks, syringes, pH meters and tabletop distilleries in professional kitchen set-ups. In supply cabinets, food chemicals with names like carrageenan, maltodextrin and xanthan sat comfortably beside containers of commonplace ingredients like caster sugar, flour, spices, and pasta.

However, chefs vehemently disliked the term 'Molecular Gastronomy' and preferred 'modernist' or 'avant garde'. Blumenthal prefers 'multi-sensory' cooking while Adrià, calls it 'deconstructivist'. Gaggan Anand, Adrià's disciple whose restaurant Gaggan (Bangkok), applied these techniques to Indian food and describes it as 'Progressive Indian'.

It was at Gaggan that I truly discovered the sensory roller coaster ride that modernist cuisine can take you on. The first course was a milky-white sphere that looked like a perfectly trimmed poached egg sitting in a soup spoon. Swallow it whole and as your teeth break into the delicate skin, a wave of gently spiced yogurt gushes out. Anand's take on Adrià's olive spheres is a masterful example of the game of deception that modernist chefs like to play.

Another important element is theatrics and drama. At Tian, at the ITC Maurya, Chef Vikramjit Roy served Thai fish cakes, not in a plate, but as fruits hanging from a tree placed on the table. On the side, a pot of artificial grass cleverly concealed herbs and other aromatics. When 'watered', the grass released an aromatic cloud (dry ice) that enveloped the table.

Interestingly, more than molecular cocktails, which are more flash than substance and can quite easily be avoided, coffee has taken great strides in the last decade. It's in café equipment that coffee has undergone the most radical transformation. The Siphon, for instance, a complex filter-coffee system consisting of two glass containers one above the other with a connecting tube between them, is a popular piece of equipment.

Baristas, like chefs, are as obsessed with understanding the science of adding flavours into what's consumed. Algorithms, scientific principles and highly specialised equipment like refractometers (to measure concentration and calculate extraction yield in coffee) are employed.

We're now moving into a post-molecular world where food doesn't need to just taste good and stimulate you intellectually, but must engage all the senses. Blumenthal anticipated the trend with his multi-sensory approach. His dish 'The Sound of the Sea' is not only plated to resemble the seashore but

is served along with a small iPod in a conch shell, which plays sounds of seagulls and the ocean waves.

A concept that is promising is gastrophysics, an idea promoted by the professor of experimental psychology and co-author of *The Perfect Meal: The Multisensory Science of Food and Dining*, Charles Spence. He believes that our taste is not simply affected by what we're eating, but that the meal is affected by our dining companions, the spatial arrangement of the food, the colour, texture and weight of the plates and cutlery and even background settings.

This believes the future of food lies in 'note-by-note' cuisine. Instead of flesh or plant based ingredients he wants chefs to use pure chemical compounds to create dishes. In place of a freshly squeezed orange, a faux orange juice would be a blend of beta-carotene, citric acid, fructose, glucose, and ethanol — natural chemicals that would replicate the flavours of an orange.

It's hard to predict where the next big culinary idea will come from, but what's crystal clear is that the science of cooking will get more innovative. ■



Facing page: Dry ice is used to conjure up drama on an innovative plate

Left: Molecular mixology creates a blue swimming pool cocktail with caviar and flower petals

Antoine Lewis is a reputed food and wine writer from Mumbai, who is well-versed in global trends in the world of gastronomy. He blogs at thecurlyhairedcook.com/author/antoinelewis



POWERING A DIGITAL ECONOMY

The last few months have seen a distinct rise in online transactions in India. **Sangram Singh**, SVP and Head — Cards and Merchant Acquiring Business, examines the cashless route India has now embarked upon

India's economy is changing and the government is focussing on cashless transactions. Amongst several other initiatives, there is an emphasis on making all financial deals completely digital. In a similar vein, merchants and consumers countrywide are also moving towards engaging in digital over cash exchanges. This makes one ask if this trend is a temporary one — to fight the cash crunch — or if it can be expected to solidify in the future?

For a significant period in India, consumers have been using the digital platform for card payments — be it credit or debit. But, till a few years ago, these, as a proportion of the personal consumption expenditure, were low, despite the fact that they have been free for consumers.

In contrast, in peer markets like Indonesia and Thailand, the usage of cards would be in high single digits to percentages in teens. More strengthened



and advanced markets like China touched the 40 per cent mark in digital usage. In the last four to five years however, India has progressed in this aspect and the percentage for Indian consumers is now upwards of 4.5 per cent. The e-share of digital payments is poised to increase with the introduction of the innovative UPI (Unified Payments Interface). It is also free for consumers, and here the pricing for merchants is lower in comparison to card payments.

EVOLVING E-COMMERCE

Digital payments have evolved throughout India in the last decade. A preponderance of this growth has been attributed to the e-commerce industry.

E-commerce struggled in countries where the online payment system was not evolved and hence security was an issue. But the advantage the Indian ecosystem had was that the RBI has since long required that all online transactions — that aren't done face to face — must have a two-factor authentication. While there will still be scope for fraud, mass hacking attacks are prevented via this mandate which was introduced in 2009. The reduced risk of fraud in online payments has played a big role in the rise of the e-commerce industry in India.

“The advantage the Indian ecosystem had was that the RBI has since long required that all online transactions — that aren't done face to face — must have a two-factor authentication.”

Sangram Singh

UPI, a new payment system that went live last August, is very different from wallets and offers unparalleled operability to consumers. The payment system is based on the robust and reliable Immediate Payment Service (IMPS), which was introduced in 2010. Payments can be easily made between consumers who are using different banks. UPI also goes a step further to remove the inconvenient process of remembering one's bank account number and IFSC code (Indian Financial System Code, an alphanumeric code that is used to identify the particular branch of a participating bank). The system links a payment address (like an email) to an account and that makes transacting between different banks a breeze for the Indian consumer. The system has the potential to link the crores of bank accounts in the country and make transactions between them seamless. Axis Bank's UPI offering, called AxisPay, has seen over 2 million downloads since its launch in August 2016.

Over the last few years, India has seen a very healthy growth in digital payments — including credit and debit cards, mobile-based payments and Internet banking. However, some reports still say that total digital transactions in the country are only at a mere 15 per cent.

Recent developments in India's economic scenario have changed things. A huge shift was seen in debit card transactions — people moved from using their debit cards at ATMs for cash to using them profusely at point of sale. One could say that twice the number of debit cards out there are now active compared to the usage statistics before the spurt in digital transactions.

India is focussing on significantly reducing the cash transactions to GDP ratio and is deeply vested in furthering the progress of digital transactions. Our country is definitely on the fast-track to becoming a less-cash economy; and the technology is here to support the ecosystem. ■

(As told to Farrhad Acidwalla, a technology entrepreneur and consultant, and founder of Rockstah Media).





NEW NEEDS, NEW SOLUTIONS

At the forefront of the effort to embrace technology, Axis Bank emphasises the importance of transforming your wealth management...digitally!

Wealth Management in India is undergoing enormous changes. Over the years, wealth management products in India have transformed from vanilla deposits, bonds or equity to the more exotic like equity and currency derivatives, portfolio management, structured products, alternative investment funds and more.

At the same time, there is a huge surge of new technology being introduced to us every day. New technologies are transforming the expectations of customers and they are being guided by their experiences on websites such as Google and Amazon, on devices such as smartphones and tablets. This is also influencing the expectations from wealth management.

When we look at what technology can do in the Wealth Management landscape, the changes can be disruptive. While technology has been increasingly used in the financial services industry over the last two decades, what we have seen is probably only the very tip of its immense capability and benefits. The shift to digitisation is inevitable, and it will transform the industry in the coming decade.

As more individuals are motivated to use technology and emerging channels to manage their wealth, the industry is moving toward a 24/7 multichannel, digital environment with plentiful, transparent information available at the fingertips, freedom to conduct research and make decisions wherever and whenever it's convenient.

Axis Bank has been in the forefront in embracing technology to transform the wealth management experience of its customers. Much has been done, but there is a lot more on the anvil as we use new technologies to cater to the different needs and requirements of all generations. ■

WHY EQUITY MUTUAL FUNDS?

FOR WHOM?

Investors who have an investment horizon of at least 3-5 years.

Investors who can stomach volatility over the short term.



Potential to beat Inflation over the Long Term



Diversification of Investments



Professional Portfolio Management



Liquidity of Funds



Potential to offer higher returns than Traditional Investment products

CATEGORIES OF EQUITY FUNDS

LARGECAP FUNDS

Invests in stocks of the top 100 companies by market capitalisation (100 largest listed companies).

WHY?

Offers both, income and growth in long term.

FOR WHOM?

Investors who want stability and can tolerate volatility.

Scheme Name	Compound Annualized		
	1 Year	2 Years	3 Years
Birla Sun Life Frontline Equity Fund	7.95	4.49	16.34
Birla Sun Life Top 100 Fund	6.97	3.50	16.77
Franklin India Bluechip	6.52	4.36	14.34
ICICI Prudential Focused Bluechip Equity Fund	8.20	3.86	14.89
Reliance Top 200 Fund	2.64	1.79	17.18
SBI Magnum Equity Fund	5.17	3.66	15.18
UTI Mastershare	4.00	1.74	14.00
Nifty 50	3.66	-0.38	9.16
Category Average	5.42	2.41	14.13

DIVERSIFIED FUNDS

Invests in stocks of companies across market capitalisations (largecaps, midcaps and smallcaps).

WHY?

A blend of large, mid and small cap stocks which takes advantage of investment opportunities across market capitalisations.

FOR WHOM?

Investors who want to invest across market capitalisations.

Scheme Name	Compound Annualized		
	1 Year	2 Years	3 Years
Birla Sun Life Advantage Fund	9.10	7.28	22.44
Birla Sun Life Equity Fund	15.78	9.22	23.06
DSP Blackrock Opportunities Fund	11.67	8.90	19.82
Franklin India High Growth Companies Fund	5.04	3.49	24.18
Franklin India Prima Plus	5.04	5.04	19.87
Franklin India Bluechip	6.52	4.36	14.34
HDFC Capital Builder Fund	4.17	4.62	18.26
ICICI Prudential Value Discovery Fund	5.02	5.62	24.34
IDFC Classic Equity Fund	8.70	6.80	13.54
Kotak Select Focus Fund	9.77	6.45	21.22
SBI Bluechip Fund	5.42	6.70	18.79
SBI Magnum Multi Cap Fund	6.25	8.23	22.06
UTI Bluechip Flexicap Fund	2.73	-0.13	11.21
Nifty 500	4.44	1.83	12.52
Category Average	5.75	4.44	18.48

BALANCED FUNDS

These funds typically invest 65-70% of their portfolio in equities and the rest in fixed income securities.

WHY?

Offer better risk adjusted returns since they invest across equities and fixed income securities.

FOR WHOM?

First-time investors for whom volatility could be a new phenomenon.

Scheme Name	Compound Annualized		
	1 Year	2 Years	3 Years
Birla Sun Life Balanced 95	9.31	6.36	18.75
Franklin India Balanced Fund	7.65	6.52	18.46
HDFC Balanced Fund	9.80	6.64	19.74
ICICI Prudential Balanced	13.92	8.03	19.15
SBI Magnum Balanced Fund	4.10	5.70	16.87
Crisil Balanced Fund - Aggressive Index	7.08	3.67	10.40
Category Average	8.37	6.36	18

WHY FIXED INCOME MUTUAL FUNDS?

FOR WHOM?

For investors with an investment horizon ranging from 1 day to upto 3 years.

For risk averse investors who cannot digest equity market volatility.



Predictable and steady returns



Regular income at regular intervals



Categories like MIPs manage to beat FDs over the long term and are also more tax-efficient

CATEGORIES OF FIXED INCOME FUNDS

DYNAMIC BOND FUNDS

Takes exposure across the yield curve depending upon the fund manager's view on interest rates.

WHY?

Flexible style of investing across short and long term securities.

FOR WHOM?

Investors who are in for the long haul (3 years and above).

Scheme Name	1 Year	Compound Annualized	
		2 Years	3 Years
Birla Sun Life Dynamic Bond Fund	14.00	10.74	12.08
HDFC HIF - Dynamic	14.72	10.07	12.11
ICICI Prudential LTP	16.75	11.21	13.84
IDFC D B F (Re-Launched)	13.05	9.65	11.66
UTI Dynamic Bond Fund	14.79	10.86	12.15
Crisil Composite Bond Fund Index	12.90	10.79	11.98
Category Average	14.05	10.28	11.84

SHORT TERM INCOME FUNDS

Invest in bonds that have a maturity typically not exceeding 4 years.

WHY?

Less volatile within the fixed income (FI) segment.

FOR WHOM?

Investors who want stable returns.

Scheme Name	1 Year	Compound Annualized	
		2 Years	3 Years
Axis Fixed Income Opportunities Fund	9.82	9.27	--
Birla Sun Life Treasury Optimizer Plan	12.30	10.44	11.09
UTI Medium Term Fund	11.01	--	--
Crisil Short Term Bond Fund Index	9.84	9.26	9.65
Category Average	10.84	9.49	10.14

MIP FUNDS

Invest 5-30% of the portfolio in equities with the rest invested in fixed income securities.

WHY?

Potential to beat FD returns over the long term in a tax efficient manner.

FOR WHOM?

Investors who want stable returns and a regular dividend pay-out.

Scheme Name	1 Year	Compound Annualized	
		2 Years	3 Years
Birla Sun Life MIP II - Savings 5	12.31	9.23	12.34
ICICI Prudential MIP - Cumulative	10.96	7.92	12.10
SBI Magnum MIP	12.56	10.48	12.85
Crisil MIP Blended Index	11.63	9.20	11.70
Category Average	10.7	8.44	11.52

*Returns are as on 30-12-2016. Less than 1 year returns are absolute returns. Greater than or equal to 1 year are Compound Annualized returns.

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