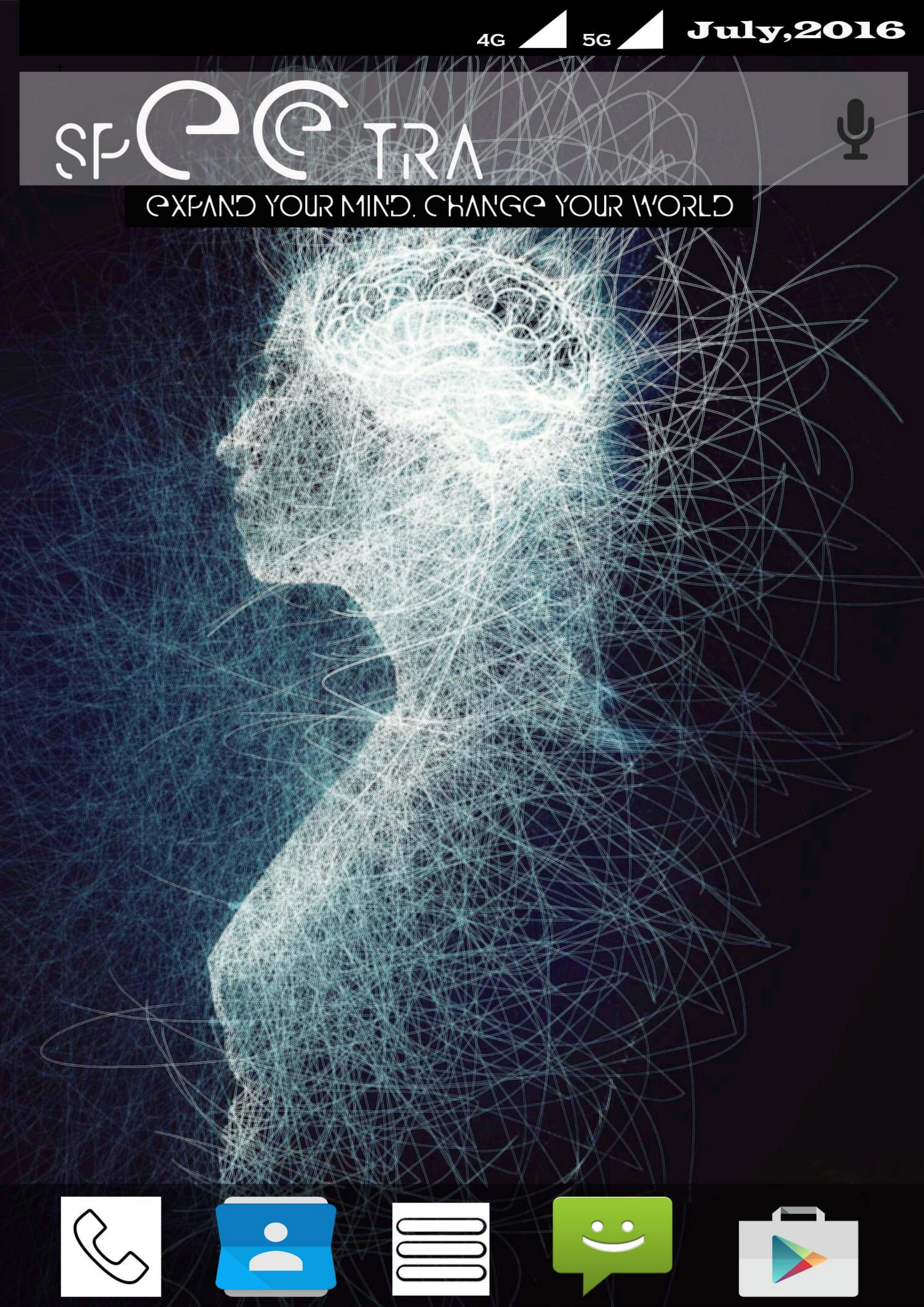
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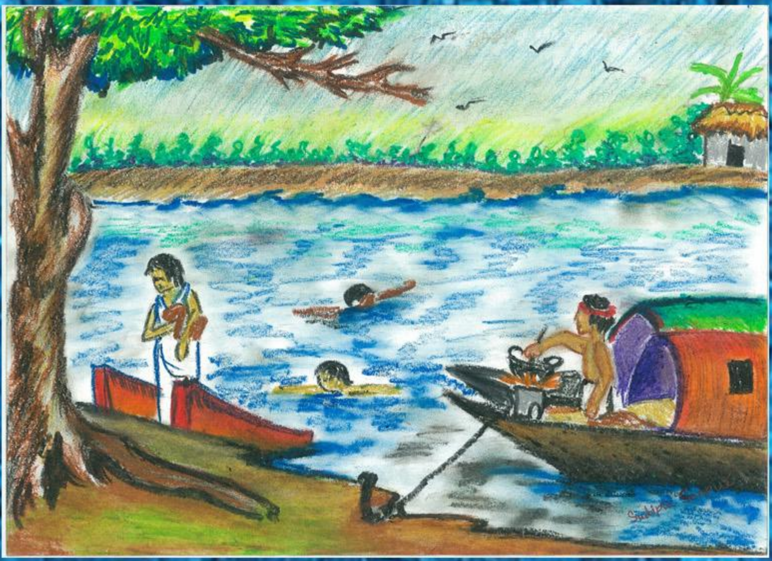
July,2016
SPECTRA
EXPAND YOUR MIND. CHANGE YOUR WORLD

Sudipta Sanpui of ECE 1st year



Avishek Pramanik of ECE 1st year

Maitry Dhar of ECE 1st year

Bhaskar Debnath of EE 2nd year

PRESENT 4TH YEAR

PRESENT 3RD YEAR

PRESENT 2ND YEAR

PRESENT 1ST YEAR

FROM THE DESK OF THE CHAIRMAN

Dear all,

It gives me great pleasure to know that students of ECE department of Camellia Institute of Technology are going to publish the first issue of their departmental magazine “ECE SPECTRA”. This magazine provides an insight of bright minds and their views on modern world.

I want to congratulate faculty members for their dedication to help students, to achieve greater heights in academic excellence. Camellia Group has always encouraged young minds to explore unchartered territories and such initiatives are always welcomed.

My heartiest congratulations to the Editorial Board for publishing this magazine.

I wish all students, faculty members and staff success in all their future endeavours.

With best wishes.

N. R. Datta
Chairman

Message from Director

Dear All,

*It gives me great pleasure to know that students of Camellia Institute of Technology are going to publish the 1st issue of Departmental Technical Magazine '**ECE SPECTRA**', 2016. This magazine provides an insight of bright minds and their views on modern world.*

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My heartiest congratulations to the Editorial Board for publishing this magazine. I wish all students, faculty members and staff success in all their future endeavours.

With best wishes.

Message from Principal

It gives me immense pleasure to pen a few words for ECE SPECTRA, newborn magazine of ECE Department, exclusively meant for exploring creative minds. It provides strong platform for students and teachers to exhibit their writing talent, poetic prowess, artistic ability, imagination and creativity, technical competence through informative articles, mind blowing poems and scintillating paintings. Apart from creative collections ECE SPECTRA is also source of different information related to fast changing technical world.

*Expand your imagination, give a nice shape to that and then try to scribble it on ECE SPECTRA which definitely will '**change your world'**.*

I congratulate all the contributors and the editorial board for bringing out ECE SPECTRA.

Let there be more contributors in future.

Message from Head of the Department

The Department of Electronics & Communication Engineering has consistently maintained an exemplary academic record. The greatest asset of the department is its highly motivated and learned faculty. The available diversity of expertise of the faculty with the support of the other staff prepares the students to work in the global multicultural environment. The graduates of the Electronics & Communication Stream have been selected by some of the leading Software Industries. The Department not only aims to make our students technically sound and knowledgeable but also to nurture their wisdom and make them a better and responsible human being. We hope that we will continue to deliver our best to serve the society and mankind. It is also expected that our students will continue to pass on the skills which they have developed during their stay at this department to the whole of the world for a better society.

Editorial Board

FROM THE DESK OF EDITOR…

It gives us great pleasure to bring you the first issue of 'SPECTRA', the 1st magazine of department of ECE.

The name and fame of an institute depends on the standard and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students.

'SPECTRA' presents the achievements of students and contributions of teachers.

We would like to place on record our gratitude and heartfelt thanks to all those who have contributed to make this effort a success.

We profusely thank the management for giving support and encouragement and a free hand in this endeavour. Last but not the least we are thankful to all the authors who have sent their articles. We truly hope that the pages that follow will make an interesting digest.

Saswata Sundar Laga
Editor, SPECTRA
Assistant Professor
Dept of Electronics

PREFACE

Established in the year 2007, The Department of Electronics and Communication Engineering enjoys a respectable stature in Camellia Institute of Technology. The department has always been on a progressive path as it aims to produce globally competitive and socially sensitized engineering graduates to bring out quality in the frontier areas. The highly experienced and dedicated faculty members who have a strong commitment towards providing quality engineering education in the domain of ECE, through periodically updated curriculum, best of breed laboratory facilities, collaborative ventures with industries and by effective teaching learning process. Apart from classroom teaching there are frequent lectures delivered by renowned speakers drawn from industry and R & D establishments by involving themselves in the sponsored projects executed by the faculty members of the Department.

VISION: To emerge as a centre of excellence that imparts latest technical education in Electronics and Communication Engineering, nurtures Research interest among faculty members and students and produces competent and skilled technocrats with high degree of Credibility, Integrity, Ethical standards and social concerns.

MISSION:

- To create a quality teaching learning environment within the department which will nurture versatile students who excel in industry.
- To motivate students and faculty members continuously for involvement in current Research and Development activities to meet the ever-changing demands in time and space.
- To empower the faculty and staff for carrying out all their endeavours with a student centric focus.
- To develop students as responsible human-beings, good engineers, confident professionals to face the challenges of the world of work and top of all respectable citizens of the country.

CONTENTS

Best Practices: Resource for Teachers

Prof. Uttam Kumar Day, ECE Department

I have collected here, without examples or detailed explanations, a collection of practices that constitute excellence in college teaching. Recognizing that teaching is both art and science, I advance this list of dimensions of excellence as a starting point for discussions about the performances that we as teachers strive for and may help each other obtain. Becoming an excellent college teacher is a continuing life-long professional challenge, the dimensions of which often go unrecognized.

The Best Practices chosen here focus on those aspects of classroom teaching competence that are visible to one and to others and thus become useful for formative evaluation. Practices do apply to most adult education environments, in both vocational and academic areas, albeit in differing degrees. It is my attempt to specify which of the myriad things and relations in teaching deserve close study. I have endeavoured to learn to do each of these things in my college teaching. I have organized those under ten headings.

Lecture Practices: effective ways to present new information orally to fit differences in learning styles.

Group Discussion Triggers: effective ways to present a common experience to engage a group in a discussion. Awareness of complexity and enhanced understanding result when learners discuss the meaning of events with each other

Thoughtful Questions: effective ways to formulate questions that foster engagement and confidence. What does it mean to think? Some people would like to be able to think better, or, more usually, want other people's thinking to improve

Reflective Responses to Learner Contributions: effective ways to establish mutually beneficial communication by reflective listening.

Rewarding Learner Participation: effective ways to support learner actions with well-timed, encouraging positives. All teaching moves learners into areas of risk and incompetence. So often the job of a teacher is to find nascent deftness when it is easier to notice the maladroit.

Active Learning Strategies: effective ways to foster active, constructive participation

Cooperative Group Assignments: ways to assign formal cooperative tasks. One form of active learning deserves special attention because it overtly places the learners as workers, demands that each process beliefs and construct expression with co-workers, and forces the achievement of a group goal.

Double Loop Feedback: facilitating mutual awareness of how one learns to learn the times when the teacher should correct performance are often the most difficult as well as the most significant. It is easier to identify errors and deficiencies in the actions of others than to communicate them in a way that continues their willing engagement in correcting them.

Fostering Learner Self-Responsibility: allow learners to plan and evaluate much of their learning. Effective teachers offer ways for the learners to take an active role, for at least a portion of the course, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate strategies, and evaluating the outcomes

Involve Learners in Evaluating Their Learning: Teachers and learners together work to find out what learning occurs within the unique context every course presents. Classroom Assessment Techniques gather information to guide the adjustments both teachers and learners need to make to improve learning.

HUMANS VERSUS ROBOTS

Riya Dey, Sonia Bhowmick, Senjuti Roy of ECE 3rd year.

As humans step off their home planet into the surrounding solar system and beyond, they do not go alone. Machines have preceded them. And as people go into space, machines will go along. Of all the machines we have used and imagined, none have captured our interest and feelings so strongly as the class of machines called robots.

But what exactly is meant by the term "robot"? Moreover, how is it decided that it is better to use a robot for a job rather than a human? What are robots like in the early twenty-first century and what they will be like in the future? Will humans ever become more robot-like?

WHAT ARE ROBOTS?

Let's begin with a bit of speculation on why robots are so interesting to us. Humans have always tried to create "life" from inanimate objects. From literary history, there have been robot-like figures such as Pinocchio and Frankenstein, and from more recent popular culture we have *Star Trek*'s Data and the Terminator. These entities could be good or evil, and were deliberately created in our image.

THE UTILITY OF HUMANS AND ROBOTS

Obviously, humans and robots should be used where and when each are most useful. As technologies for robots improve the number of those tasks that robots are better at will increase.

Currently robots are better than humans at a number of things. Machines can perceive beyond the human visual spectrum, they need a smaller mass of consumables (e.g., food), they are more expendable, and they can be built to better tolerate environmental extremes (e.g., cold and radiation).

WHO'S SAFE, WHO'S NOT?

"There's no question that technical change is accelerating, and to the extent it accelerates, what it does is create dislocations and transitions," says economist Joel Nar off with Nar off Economic Advisors.

The Pew Research Centre ranked occupations most and least susceptible to automation. If you are editing papers or working in a film projectionist's booth, the outlook isn't so good. But if you are a fire-fighter or a sports trainer, you should be fine.

Pew says these jobs are most at risk from robots:

- Proof readers
- Motion picture projectionists
- Secretaries and stenographers

Those least susceptible to being replaced include:

- Athletes, sports instructors and athletic officials
- Railroad conductors and yardmasters
- Foresters and conservation scientists

People need to be "constantly educated, re-educated and retrained" for jobs that employers want to fill, Nar off says.

HUMAN WORKERS AREN'T COMPLETELY DOOMED

Fortunately, there's still plenty of work for humans to do. In a survey of hiring managers and human resource professionals, CareerBuilder and Economic Modelling Specialists International found:

- Just 1 in 5 companies reports that it has replaced workers with automation.
- 68 percent of those companies say they created new jobs after automating others.
- 35 percent of the companies said the automation was followed by higher overall staffing levels.

Tom Kloza, co-founder of the Oil Price Information Service, recalls one experiment in automation that backfired for oil giant Shell. About a decade ago, it tried to use robots to pump gas.

OTHER AUTOMATION FAILS

The grocery store is another place where automation's shortcomings have been on display. While supermarket scanners work well when used by trained employees, self-scanners have produced mixed results. It can be infuriating when you have to wait for an attendant to intervene or override the computer when there's a line of customers behind you. You might have heard an error-prone automated register say "Place your item back on the belt!"

"What shoppers want at the last touch-point in the store is 'human,'" says analyst Phil Lempert of SupermarketGuru.com. He says better speed at checkout isn't what consumers want, even if that can be delivered by the technology.

THE HUMAN ADVANTAGE

Humans typically prevail over the robots in sci-fi movies. And in real life, we still command the upper hand over robots when it comes to employment prospects.

"Somebody has to program the robot; somebody has to maintain the robot. It's not as if the robots just show up," says John Silvia, chief economist with Wells Fargo.

Come to think of it, maybe the job with the best outlook is "manager of robots

HISTORY OF TELECOMMUNICATION

Debaditya Chatterjee of ECE 3rd year

Telecommunication is defined as the science and technology of communication over a distance. The ability to convey information quickly, accurately, and efficiently has always been one of the main focuses driving human innovation. From prehistoric man with their signal fires to the smart phone-wielding high-powered executives of today, communication still remains a key for survival and success. The history of telecommunication illustrates this never-ending push for progress as it steadily parallels human growth, becoming more widespread and efficient as the development of modern civilization unfolds.

So here I want to share some of the UN- told facts related to TELECOMMUNICATION highlighting its history...

1. Prehistoric Era: Fires, beacons, smoke signals, communication drums, horns: Man's first attempts at distance communication were extremely limited. Prehistoric man relied on fire

and smoke signals as well as drum messages to encode information over a limited geographic area as they attempted to contact neighbouring clans. These signals also needed to have very simple, pre-decided meanings like "safe" or "danger" or "victory" or could be used as a form of alarm system in order to alert prehistoric clans to predators or invading clans.

2. 6th century BCE: Mail: Cyrus the Great was a Persian emperor at the height of Persia's power in the 6th century BCE. The empire was so vast that Cyrus couldn't easily communicate from one end to the other: He is credited as having established the first postal system in the history of the world. Other ancient powers like Egypt, Rome, and China eventually built their own postal systems later on.

3. 5th century BCE: Pigeon post: Persia and Syria are credited with establishing the first pigeon messaging system around the 5th century BCE due to the discovery that pigeons have an uncanny ability to find their way back to their nests regardless of the distance. Travellers would bring doves and pigeons along with them, attach messages to them and release them to fly back home. Later on, pigeons would be used by Romans to report the outcomes of sporting events and by Egyptians for military communications.

4. 4th century BCE: Hydraulic semaphore: In the 4th century BCE, the hydraulic semaphore was designed in ancient Greece as a method of communication, and it was vital during the first Punic War. Very much like early smoke signals or beacons, it involved a network of identical containers on separate hills, each with a vertical rod floated in it. These rods would have predetermined codes inscribed at various intervals. Someone who wished to communicate would signal another with a torch; they would synchronize and then simultaneously open their spigots and drain the water until it was at the desired code. This system also had the same limitations as smoke signals - the messages had to be pre-determined prior to sending them.

5. Circa 490 BCE: Heliographs (shield signals): The heliograph or shield signal was first documented during the famous Greek battle of Marathon that took place in 490 BCE. A heliograph involves the shining of the sun on a polished object like a shield or mirror. Interestingly enough, in this instance, the signal given was not really understood, since its meaning had not been clearly agreed upon prior to it being used.

6. 15th century CE: Maritime flag semaphore: The ability to communicate between ships was very difficult before the 15th century. At that time, flag semaphore, a special code involving the positions of two hand-held flags, was introduced. Each position and motion represented a letter or number. This made it very easy for fleets to communicate.

7. 1672: First experimental acoustic (mechanical) telephone: Robert Hooke is first credited with creating an acoustic telephone in 1672. Hooke discovered that sound could be transmitted over wire or string into an attached earpiece or mouthpiece. At the time, it's not clear that he was aware of the implications of this discovery, as his notes point toward his desire to use this device to make music.

8. 1790: Semaphore lines (optical telegraphs): Using the maritime flag semaphore as a starting point, the Chapped brothers, two French inventors, created the first optical telegraph system in 1790. The optical telegraph was a system of pendulums set up somewhere high like on a tower or the top of a town clock. The telegraph would swing its mechanical arms around and sign messages from one tower to the next. It was the first telecommunications system in Europe.

9. 1838: Electrical telegraph: Samuel B. Morse had been working on the idea of a recording telegraph with friends Alfred Vail and Leonard

Gale. They discovered that when connecting two model telegraphs together and running electricity through a wire, you could send messages by holding or releasing the buttons in a series of intervals. This became known as Morse code and lay the foundation for modern land-line phones.

10. 1858: First trans-Atlantic telegraph cable: At this point, most of Britain and the United States had telegraph stations and were able to regularly communicate within their own countries, but a man named Cyrus Field from New York wanted to lay the first transatlantic telephone cable to connect England and the United States by telegraph. This project, though it was met with many setbacks, was finally completed in August of 1858.

11. 1867: Signal lamps: In 1867, the first dots and dashes were flashed by signal lamps at sea. The idea was that of British Admiral Phillip Colomb, who took the design of signal lamp inventor Arthur C.W. Aldis and implemented this method of communication as well as his own code in order for the ships in his fleet to easily communicate. This code was similar to Morse code, but eventually, Morse code became more widely used.

\12. 1876: Telephones: The year 1876 was a big one for Alexander Graham Bell. Having come to the U.S. as a teacher for the deaf, he had been trying to figure out a way to transmit speech electronically. Despite little support from his friends, he successfully invented the telephone in March of 1876.

13. 1877: Acoustic phonograph: Inventor Thomas Alva Edison made incredible strides in sound recording and transmission when he completed the first acoustic phonograph in August of 1877. He had been trying to improve and finalize the model for the telephone when he realized that by attaching a needle to the phonograph diaphragm and a tin-foil cylinder on which the needle could record spoken words, he could record and play back sounds.

14. 1880: Telephony via light-beam photo phones: In 1880, Alexander Graham Bell took the money he'd received for successfully creating the telephone, set up a lab and got to work improving his invention. The fruit of his labour was the photo phone, a device capable of transmitting sound in a beam of light. In essence, Bell had made the first wireless call in history!

15. 1893: Wireless telegraphy: Nikolai Tesla was the first to successfully transmit radio waves wirelessly through a transmitter in 1893. He patented his work, which was lucky because shortly after that, Guglielmo Marconi, another inventor, alleged that Tesla had copied his work. During the legal battle that ensued, this was found to be untrue. Tesla continued to experiment with wireless transmission and attempted to create a more efficient light bulb.

16. 1896: Radio: Undaunted by his defeat in the U.S. courts, Marconi kept working on his own versions of wireless transmission of sound. In 1896, he sent his first long-distance wireless transmission. The signal was sent over a distance of 2 kilometres. The recipient of this signal waved a white kerchief to show that it had been received. This earned Marconi a place in the history books as the man who gave us the first radio.

17. 1915: First North American transcontinental telephone calling: Alexander Graham Bell is back in the history books again after he made the first coast-to-coast call by phone in January of 1915 to his assistant. It was the first long-distance call made in history from a land-line. It has significance because it made long-distance communication all over the country a reality.

18. 1927: Television: Phillip T. Farnsworth made media history on September 7, 1927, when he demonstrated the first working television set. He had been working on a method to transmit images: What he discovered was that you could encode radio waves with an image and then

project them back onto the screen. This gave us the first television prototype.

19. 1927: First U.K.-U.S. radio-telephone service: The first radio-telephone service from the U.K. to the U.S. was established in January of 1927. The phones were initially radio phones, so there were some issues with fading and interference. Initially, it was only one circuit and received about 2,000 calls a year, and the cost for three minutes of conversation time was nearly $10.

20. 1930: First experimental videophones: In 1930, AT&T had decided to create a two-way experimental videophone they called the Icon phone. This allowed people to see, hear, and respond to those they were speaking to in real time. The idea, although different, did not meet with much commercial success.

21. 1936: World's first public videophone network: The world, now in the throes of World War II, sees the first public videophone network installed in Nazi Germany in March of 1936 during a trade fair. It was for use by "Aryans only" for a limited time each day from 8 a.m. until 8 p.m. It was left installed there even after the trade show was over.

22. 1956: Transatlantic telephone cable: The first 36-circuit transatlantic telephone cable was installed in 1956. The cable stretched from Newfoundland to Scotland. This now made phone calls much less expensive than the older radio telephone system.

23. 1962: Commercial telecommunications satellite: The Communications Satellite Act was officially passed in 1962, allowing telecommunications to finally go into space. AT&T was in the process of constructing their satellites, and two short years later, they would have put six telecommunications satellites into orbit.

24. 1964: Fibber-optic telecommunications: In 1964, Charles Kao and George Hock ham published a paper that proved that fibber-optic communication could be possible as long as the fibbers used to transmit the information were free of impurities. This discovery reopened the door Alexander Graham Bell had first created with his photo phone, allowing sound to be transmitted over beams of light.

25. 1969: Computer networking: In October of 1969, the first data travelled between nodes of the ARPANET, a predecessor of the Internet. This was the first computer network and was invented by Charley Kline and Bill Duvall.

26. 1973: First modern-era mobile phone: Inventor Martin Cooper placed the first cellular mobile call in 1973 to his rival at Bell Labs, Joel Engel. The first mobile phone had a maximum talk time of 30 minutes, and it took a year for the battery to recharge. The phone would eventually be a prototype for Motorola's first mobile phones.

27. 1981: First mobile phone network: The first commercially automated cellular network was launched in Japan in 1981. The network was originally launched only in Tokyo in 1979 and then was expanded. Simultaneously, the Nordic Mobile Telephone system was also established in Denmark, Finland, Norway, and Sweden.

28. 1982: SMTP email: Prior to 1982, the Internet was highly secure and comprised of limited network clusters between military, corporate, and some university research facilities. In 1982, Jonathan Postal wrote the Simple Mail Transfer Protocol and shifted the focus of the Internet from security to reliability using the networks as relay stations to send electronic mail to the recipient through cooperative hosts.

29. 1983: Internet: On January 1, 1983, the Internet was officially born. ARPANET officially switched its old network control protocols (NCP) and Transmission Control Protocol/Internet Protocol (TCP/IP) became standard.

30. 1998: Mobile satellite hand-held phones: The first canopy of 64 satellites was put into place by a company called Iridium in 1998. They also produced the first hand-held satellite phones, which were smaller and less cumbersome than the earlier "bag" phones. This revolutionized mobile telecommunications and would lead to the modern smart phone.

31. 2003: VoIP Internet telephony: In 2003, phone calls were now capable of being transmitted over a computer through Internet protocols. This meant that long-distance charges were not applicable, as callers would use already-established computer networks.

TESLA MODEL 3

Dhurbajyoti Adak and Uttaran Chanda of ECE 3rd year

Tesla has revealed the Model 3, its first truly mainstream electric vehicle, and claimed it has already taken 150,000 pre-orders for the car.

Elon Musk unveiled the heavily-trailed vehicle at a press conference in San Francisco, with live sales counter visible on stage showing the number of $1,000 pre-orders. The counter was stopped at around 150,000, which -- if paid for in full -- would equate to more than $5 billion in sales, and three times the number of cars Tesla managed to build in total in 2015.

The Model 3 is promised to be a high-quality electric vehicle, with a range of 215 miles, the ability to reach 60mph in six seconds and support for Tesla's Supercharger network.

Building TESLA: Inside ELON MUSK's car factory of the future

Fulfilling its sales targets for the Model 3 of around 500,000 vehicles per year will be an enormous challenge for Tesla, however. It will require a massive expansion and reconfiguration of its Fremont, California, factory, and the completion of its even-more ambitious Giga factory battery plant currently under construction in Nevada.

The Model 3 is intended to be Tesla's first genuinely low-cost vehicle, with a $35,000 price tag (around £30,000 in the UK). To sell such a vehicle at a profit Tesla needs to cut the cost of its batteries dramatically, for which it needs scale and its own manufacturing facilities -- both of which it lacks, currently. Tesla will also face competition from established car makers, including GM's Chevvy Volt low-cost electric car.

Tesla Model 3 pre-orders stack up as Elon Musk unveils lower-priced car

Prototypes go on show in California in front of 800 fans as chief executive Elon Musk reveals 115,000 preorders ahead of 2017 launch. Tesla Motors has finally unveiled its long-anticipated lower cost electric car, the Model 3, at its design studio in Los Angeles. Costing $35,000 and up, before government incentives, the Model 3 is less than half the cost of Tesla's previous Model S and Model X SUV and aimed at the mass market. The car will go at least 215 miles (346km) on a full charge, which is around 85 miles less than the more expensive Model S, but about double what drivers of competitors cars costing similar, such as the Nissan Leaf and BMW i3.Tesla Motors has finally unveiled its long-anticipated lower cost electric car, the Model 3, at its design studio in Los Angeles.

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The Model 3 looks like a shorter version of the Model S, with a similar sleek profile, elongated hood and a panoramic glass roof. It will seat five adults, has the same large touchscreen panel on the centre console, Tesla's AutoPilot self-driving features and will reach 60mph from a standstill in six seconds.

Cars costing $35,000 or more accounted for 5.5m vehicles last year in the US, 35% of the market, according to data from True Car. A success or not, Tesla's Model 3 is already changing the industry, spurring competitors to speed development of electric cars and improve their battery range.

At the unveiling of the Model 3 this evening at the company's design studio in Hawthorne, California, Tesla CEO Elon Musk said the car will deliver at least 215 miles of range beginning at just $35,000 — that's a bold claim, and an important one for Tesla to meet. Musk is "fairly confident" that deliveries will begin by the end of 2017, and "you will not be able to buy a better car for $35,000, even with no options." And it will be one of the safest cars in the world, according to Musk.

Tesla says more than 130,000 preorders — buyers need to put $1,000 down — have been placed, and that number will continue to rise.

But today is all about the Model 3, the pinnacle of the Tesla Motors master plan. Elon Musk laid it all out in a blog post ten years ago:-

- Build sports car - The Tesla Roadster.
- Use that money to build an affordable car - The Model S.
- Use that money to build an even more affordable car - The Model 3.

  At the announcement of the Model 3 this evening, Elon Musk even thanked Model S and Model X purchasers for funding the development of the car. The Model 3 is the culmination of a decade's worth of work. Elon Musk is betting billions on it, and it needs to deliver. The future of Tesla Motors, quite literally, rides on its success.

Tesla Motors – Third Quarter 2014 Shareholder Letter

• Highest ever quarterly deliveries at 7,785 vehicles, despite factory shutdown in July

• Highest ever peak deliveries in a single day of 907 vehicles

• Majority of Q3 deliveries in North America; 65% increase in NA Sept 14/Sept 13

• Dual Motor and Autopilot introductions further accelerate Model S demand

• Model S orders and deliveries alone expected to increase by 50% in 2015

• Reducing number of Model S options to ramp production faster.

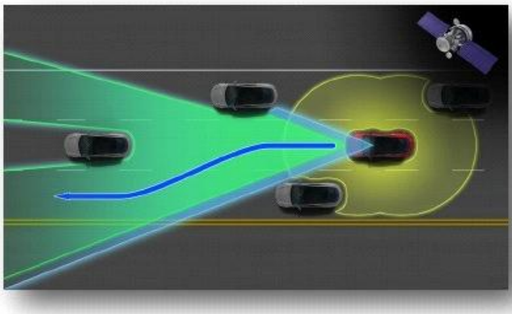
Dear Fellow Shareholders:-

Over the past quarter, despite losing almost a month of production due to factory retooling, we delivered the highest number of Model S vehicles ever, with several new records set in North America and worldwide. We also substantially broadened the appeal of the Model S by introducing Dual Motor all-wheel drive and Autopilot. Based on net orders since that introduction, excluding the extraordinary initial demand peak, we are confident of a 50% increase in both net orders and deliveries for Model S alone in 2015. Our focus will be on scaling up Model S production over the coming year, so no major platform changes to the hardware are planned in the near term. There will, however, be several significant over-the-air software releases – at no cost to owners – that provide added functionality to the Model S fleet.

Product and Market Initiatives:-

The Model S is the world's first production car with Dual Motor electric drive. By having two electric drive units, torque can be adjusted at the millisecond level digitally and independently to the front and rear wheels, thus providing unparalleled performance and traction control.

This is a fundamental improvement in traction control relative to a gasoline car, which has inherently high powertrain latency and a mechanical shaft connecting the front and rear wheels that is incapable of reacting intelligently to all road conditions. The dual Model S drive units are also able to act independently, providing powertrain redundancy if one fails.



Sensor Map of Safety Features & Autopilot System

The Tesla Model X will Have Those Crazy Falcon Doors

Increasing Capacity To Meet Demand:- To accommodate accelerating Model S demand and prepare for the rapidly growing order book of Model X reservations, we are investing to increase production to more than 2,000 vehicles per week by the end of 2015. We began this process with a production shutdown this summer to transition to our new, higher volume final assembly line and expand our Model S body centre. The ramp to our target production rate took longer than expected due to system integration challenges, reducing our production by almost 2,000 vehicles. Being unable to increase production fast enough, not lack of demand, is a fair criticism of Tesla. That said, we expect our annual production will increase by over 50% in 2014, again in 2015 and probably for several years to follow. This is unusual in the car industry.

Tesla is out with its third quarter shareholder letter, and the highlights include 33,000 vehicle deliveries expected for the year and the highest quarterly delivers ever, with 7,785 Model S sedans landing in driveways around the world. The lowlights: The Tesla Model X SUV has been delayed – again – now to the third quarter of next year.

Why is the Tesla Model 3's dashboard so weird?

Judging from the $200 million in deposits Tesla has already raked in, the Model 3 has quickly found its fans in the last 24 hours — so quickly, in fact, that Elon Musk is openly wondering how he'll make all those cars. Don't get me wrong, the car looks nice (complaints about the grille-less front end aside). And from the all-too-brief moment I spent in it as a passenger last night, I get the impression that this is probably going to be a great car, just like the Model S before it. But I can't stop thinking about the dashboard, a Spartan expanse of absolutely nothing broken only by a steering wheel and a plain 15-inch touch screen Lenon a floating mount that looks like it could've been pulled off a ovo workstation pilfered from an office cubicle. In place of the instrument cluster, the driver has to sneak peeks at the speed by glancing at a widget in the upper left of the big screen.

Why'd they mess with a good thing?

He obvious explanation is that Tesla had to cut corners to bring the Model 3's base price down to the promised $35,000, and I do think there's probably an element of that. But a $35,000 car is still not a cheap car, and if you look across the auto industry at $35,000 vehicles, you'll see a lot of attractive interiors.

Another plausible explanation is that the interior simply isn't done. That is true: there will be more to this car by the time it's released a year and a half from now, but I was told by a Tesla staffer at last night's event that the dash is essentially production-ready in its current state. In other words, the details may change, but the overall concept isn't likely to change much; I would be shocked if a traditional instrument cluster magically sprouted between now and late

2017.The remaining explanation, I believe, is the biggest one: the Model 3 is a self-driving car.

Tons of ink has been spilled in recent months about how radically the interiors of cars could change in a world of autonomous driving — the notion that we'll reclaim hours of our lives every week for work and play simply by letting our cars take the wheel is, after all, an enticing one. Mercedes envisions that we'll rotate our seats to face each other like a tiny living room; Volvo thinks we might have a big cinema display that rotates into place for watching movies; BMW thinks the windscreen itself will be the display. And by completely dispensing of the driver-centric cockpit in the Model 3, Tesla is signalling that it wants you to sit back and ride.

WHY ENGINEERING IS PREFERED AMONG ALL OTHER JOB OPTIONS

Rajesh Sen of ECE 3rd year

Engineering is an exciting profession, but one if its greatest advantages is that it will leave you time for all other things in your life that you love!

Engineering is a great outlet for the imagination- the perfect field for independent thinkers.

Engineering takes teamwork, and you'll work with all kinds of people inside and outside the field. Whether they're designers or architects, doctors or entrepreneurs, you'll be surrounded by smart, inspiring people.

Come up with solution no one else has thought of. Make your mark on the world.

Creative problem solving will take you into uncharted territory, and the ideas of your colleagues will expose you to different ways if thinking. Be prepared to be fascinated and to have your talents stretched in ways you never expected.

Engineering not only earn lots of respect, but they're highly paid. Even the starting salary for an entry-level job is impressive.

An engineering degree offers you lots of freedom in finding your dream job. It can be launching pad for jobs in business, design, medicine, law and government. To employers or graduates schools, an engineering degree reflects a well-educated individual who has been taught ways of analysing and solving problems that can lead to success in all kinds of fields.

Field work is a big part of engineering. You may end up designing a skyscraper in London or developing safe drinking-water system in Asia. Or you may stay closer to home, working with a nearby high-tech company or hospital.

Everywhere you look you'll see examples of engineering having a positive effect on everyday life. Cars are safer, sound systems deliver better acoustics, medical tests are more accurate, and computers and cell phones are a lot more fun! You'll be giving back to your community.

Imagine what life would be like without pollution controls to preserve the environment, life-saving medical equipment, or low-cost building materials for fighting global poverty. All this takes engineering. In very real and concrete ways, engineers save lives, prevent disease, reduce poverty, and protect our planet.

ENGINEERS ARE BORN TO DIE

Shayan Dhar of ECE 1st year

If I Die in My Exam Room
Put My Pen And Paper On My Chest
Box Me Up, Send Me Home
Tell Dad, I tried My Best.
Tell Mom Not To Be Sad
As There Will Be No One To Trouble Her Any More
Tell Brother To Be A Good Person, And Live Life Freely
As From Now All My Gadgets And My Bike Key's Are His
Tell Sister Not To Be Upset,
Because Her Brother Will Never Rise Up After This Sunset
To Disturb Her With Her TV Serials.
Don't Tell My Friends,
Because All Of Them Are Kamina's.
And All Will Start Enjoying
As There Will Be No One To Take Treats From Them
And Tell My Love Not To Cry,
Because IM An Engineer
And Are Born To Die……………………….

UNIVERSAL BROADBAND COMMUNICATION

Ranjana Kumari of ECE 1st year

NETWORKING

Universal Broadband Communications delivers and entertainment through a brand new digital platform that utilizes, broadband technology, set top boxes, tablets, cell phones, solar technology and a global educational platform.

UBC education solutions is designed to re- create our current failing educational system globally to one that is more sustainable, positive and affordable with the latest and best content available to all people and cultures around the world.

GLOBAL EDUCATION

UBC creates system that connect and educate the world, providing an opportunity to bring all people together into one mind and one heart beyond all limitations.

RESIDENTIAL EDUTAINMENT

UBC provides quality "Edutainment", a combination of education and family entertainment suitable for all ages. Families now have the opportunities to customize what is delivered into their homes with one low monthly fee.

UBC provides Industry solutions, Product Engineering solutions, related software product through seamless integration of software and services.

UBC's solutions are dedicated to battering and enriching the lives and lifestyles of people, promoting health consciousness, accident prevention and life safety, and additional promoting probity and responsibility in the conduct of IT industry.

"A Mind Is A Terrible Thing To Waste"

WORD GAME

Sangita Bhowmick of ECE 1st year

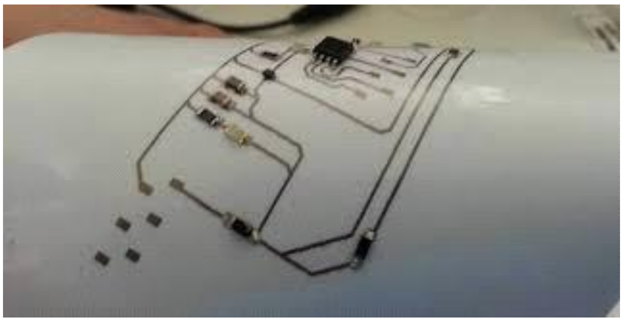
WS1 (Grade 1, KS1)
APPLE
BATH
BEEF
CLUB
CRIB
DESK
GAME
HORN
HOSE
MAID
MASK
MOTHER
MORNING
SHOP
SHOW
STEP
STEW
TENT
TEST

Z	L	J	T	O	E	N	L	Q	S	A	Y	A	H	R
Q	H	M	S	T	E	P	D	H	B	A	T	H	R	R
O	O	P	L	M	R	G	B	N	E	V	C	V	P	G
W	R	Z	A	P	P	L	E	M	E	G	S	H	O	P
H	N	V	W	Z	D	O	P	S	F	D	T	L	J	T
B	Q	W	H	R	O	G	A	M	E	Z	E	Q	R	J
T	H	A	V	J	S	Q	Y	R	Y	T	W	Q	R	Q
E	S	C	L	U	B	V	M	O	R	N	I	N	G	P
S	Q	Q	C	Q	S	W	J	C	O	M	Q	G	E	Z
T	M	O	T	H	E	R	D	P	E	A	Q	R	B	J
J	N	M	W	V	H	V	N	C	R	I	B	C	W	M
Y	Z	D	E	B	O	P	M	T	P	D	N	D	B	A
S	L	J	D	E	S	K	J	E	M	C	Z	O	M	S
W	T	W	M	W	E	N	P	N	G	L	V	Z	Q	K
S	H	O	W	R	Q	G	G	T	A	P	R	Z	P	M

INKJET PRINTED ELECTRONICS

Jasmin Ara of ECE 3rd year

Steve Hodges wants to make it easy to prototype electronic devices, so he is found a way to print circuits with an inkjet printer. Hodges, head of the sensors and devices group at Microsoft Research in Cambridge, says "It makes electronics more accessible. We are empowering people to learn about circuits, play with designs, and make their own devices. Ultimately, we hope some people are going to sell these things across a wide range of products."



Hodges worked with Yoshihiro Kawahara at the University of Tokyo to hack a standard inkjet printer. The trick is to load the printer cartridges with special ink containing silver nanoparticles developed by Mitsubishi Chemical in Japan. When the ink is deposited on to high quality photo paper or thin plastic film, the silver nanoparticles instantly fuse together This process is called self-sintering to produce a thin layer of pure silver. Crucially, it works at room temperature; silver nanoparticle inks require heat treatment. Hodges and Kawahara have attached electronic components such as resistors, capacitors, sensors and LEDs by using conducting glue. They have also used circuit stickers. Components having back with conductive double-sided sticky tape can be peeled off and stuck down to matching points on the circuit. Applications of Printed electronics are Radio frequency identification (RFID) tags, monitoring, data storage, display and visual effects, toys.

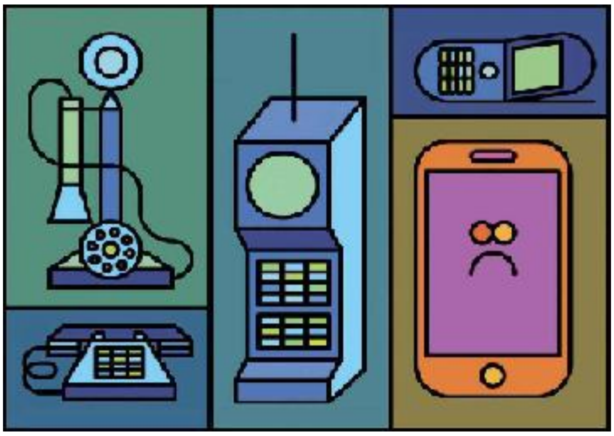
TEK-QUIZZARD

Bidyut Manna and Souvik Mal of ECE 1st year

1. Who was the youngest president of India?
2. Which cities of India are known as “Twin City”?
3. In which country, 80% of its population likes the blue colour?
4. In which country, people celebrate the new year on 21st March?
5. Which famous poet is also known as “Y.Y.”?
6. Which famous cricketer wrote “Out of my Comfort Zone”?
7. Who is the father of Intelligent Quotient?
8. “What Bengal thinks today, India will think tomorrow” – who said?
9. Who is the first test tube baby in India?
10. In which country plants also have hospitals?
11. Who are the founders of Snapdeal?
12. In IPL cricket who scored the highest number of half centuries and also highest number of duck?
13. Who scored the fastest century in Test cricket?
14. Which country is known as “City of cake”?
15. What is on the right hand of “The Statue of Liberty”?
16. Who is known as the father of Modern Cartoon?
17. In which country, the two sides of the national flag is different?
18. What is the original name of Spiderman?
19. What is the name of childhood coach of Sachin Tendulkar?
20. Which country celebrates its Independence day on 15th August except India?
21. Who invented “Pressure cooker”?
22. Gandhiji had seen only one cinema in his entire life. What is the name of the cinema?
23. In the cricket history, at first two players were given “Man of the Match” award in a match. Who are they?
24. Who is the inventor of mobile phone?
25. When “Titanic” got drowned, how many passenger were in the ship?
26. Who is called the “Einstein of football”?
27. Which cricketer is known as “Terbunator”?
28. Who is the director of “PK”?
29. Which is the largest platform in the world?
30. Who wrote the novel “Idles”?
31. What is the name of the autobiography of Sachin Tendulkar?
32. “I came, I saw, I conquered” – who said?
33. What is the full form of NASA?
34. Who is the founder of “www”?
35. “Sare Jahan Se Achcha” – who is the singer?
36. Who is the first women chief minister of India?
37. Who is known as “Uncle Sam”?
38. What is the original name of Aamir Khan?

The End of the Smartphone?

Sayani RoyChoudhury of ECE 3rd year



RECENTLY I WAS LISTENING TO A TALK—OSTENSIBLY

About the future—in which the smartphone was pictured as an evolutionary end point that would last indefinitely. I thought, nothing is forever, and forever comes very quickly in technology. I started to worry about what would come after the smartphone, and what the end of the smartphone's dominance would mean to the electronics industry. The smartphone has been an incredible success both in technological and business terms. I often think of it as the pinnacle of engineering brilliance. There is an entire ecosystem of parts, systems, software, even design philosophy, that has built up around it.

Anything that can be made from smartphone technology can be made quickly, easily, and inexpensively. It has been the most successful electronics product ever. But there are dark clouds on the horizon. The good news is that practically everyone has one. The bad news is that practically everyone has one. Moreover, the new models seem to offer diminishing advances in performance and features that are easily apparent to users. The ads for Apple's iPhone often say that the new model is

its best iPhone ever. Well, of course. Imagine if the ads said that the new model wasn't quite as good as the previous one! I remembered my father's old rotary-dial telephone from my youth. He still had it in the

1990s, and several times I suggested that he should get a new telephone.

"What for?" he would say. "The New ones do the same thing."

And I would think, He has a Point there.

The standard landline telephone Lasted almost a century.

In electronics, this probably does qualify as being forever.

Meanwhile, other things—turntables, tape decks, cassette players, beepers, and so forth—came and then were suddenly gone as if they had never existed (although turntables are making something of a comeback to cater to the neonostalgic crowd).

Perhaps, like my father's phone, the smart phone will endure for decades. But also, like that old telephone, it may be something everyone will have, and there will be no compelling reason to buy a new one.

Certainly, the smartphone can be further improved. We need better battery life, faster and wireless charging, and I'd like to see the camera have optical zoom. But on the other hand, users may not see the need for better displays and faster processors.

Meanwhile, the supporting infrastructure will see evident improvements— gigabit wireless speeds, greater coverage, better integration with Wi-Fi, and cheaper service plans. However, my concern here is with the smartphone itself. I think of it as the little engine that could—pulling the entire electronics industry in its frantic rush to keep up with the acceleration required by Moore's Law. What if that little engine that could runs out of steam?

I know that I'm asking unanswerable questions, and my own response is only to propose a dream goal—that we invent another electronic device that everyone wants and needs. Maybe the smartphone will drive the market, but maybe not. Either way, I feel the need for some new device that I just can't do without. I look forward to wanting that new gadget.

HOW TO RECYCLE AN E-WASTE

Shantam Ravish of ECE 3rd year

E-waste or we can say electronic wastes. So this has become the concern for all of us. The most rapidly growing segment of the municipal solid waste stream. It contain many valuable things such as discarded computers, office electronic equipment's, mobile phone, television set, refrigerator and many more things. So most of us think that if this type of equipment's are not working properly so now it has become simply a waste. But it is not like that, we can reuse this so called wastes, we can recycle this. E-wastes contain valuable, recoverable materials such as aluminium, gold, silver, plastic and many more. In order to conserve the natural resources and the energy needed to produce the new electronic equipment's from virgin resources, electronic equipment's can be refurbished, reused and recycled instead of being landfilled.

AMOUNT OF ELECTRONIC WASTES WORLDWIDE

Rapid changes in the technology, changes in media, falling prices have resulted in a fast growing e-wastes worldwide. Display units, processors, memory and audio useful components have different useful life. Processors are most frequently out-dated (by software no longer be optimized) and are more likely to become e-waste, while display unit are most often replaced while working without repair items, due to change in wealthy nation appetites for new display technology. An estimated 50 million tone of e-wastes are produced each year. The USA discard 30 million computer each year and 100 million of phone are disposed in Europe each year. The Environmental Protection Agency estimates that only 15%-20% of e waste is recycled, the rest of these electronics go directly into landfills and incinerators. The USA is the world leader in producing electronic wastes and producing 3 million tons e -waste each year. China already produces 2.3 million tone domestically just next to USA .And despite of being banned e-waste imports, China remains a major e-wastes dumping ground for developed countries. Society today revolved around technology and they need most recent and updated products. Cell phone companies are making cell phones that are not made to last so that the consumer will purchase new phones. Companies give these products such short life that they know that consumer will purchase the products again.as we know that this is creating lot of harm to us to our society.it has various brutal effects, and some of them which we can say will be, suppose cathode ray tubes and this make lead ,barium and other heavy metals leaching into the ground water and release of toxic phosphor, printed circuit board produces air emissions as well as discharge into rivers of glass dust, tin, lead, brominated dioxin and mercury. Due to computer wires hydrocarbon ashes released into air, water and soil and many more environmental hazards are increasing day by day and this hazardous things are very much needed to control at a very high level. Government should also take proper measures to control this wastes and recycle this products at a very high level. There are some management techniques which we will discuss here to make aware of the things.

E WASTE MANAGEMENT

RECYCLING:-Audio-visuals components, televisions, mobile phones and other computer components contain valuable elements and substance suitable for reclamation, including lead, copper and gold. One of the major challenges is recycling the printed circuit board from the electronic wastes. The circuit board contain such precious metals as gold, silver, platinum etc. and such base metal as copper, iron, aluminium etc. One way e-waste is processed is by melting circuit boards, burning cable sheathing to recover copper wire and open pit acid leaching for separating metal of values. As properly disposing of or reusing electronics can help prevent health problems, reduce greenhouse –gas emissions and create jobs there have been called to reform "the methodology for e waste disposal and reuse in developing countries" with reuse and refurbishing offering a more environmental friendly and socially conscious alternatively to down cycling process.

CONSUMER AWARENESS EFFECT:- The consumers that means we the people should understand the values of electronics devices,we should not waste it or take this situation lightly.If our electronics goods is not working up to the mark then we should try to repair them instead of throwing them out and making that device into a waste.The one should see the processes for the recycling and reusing the electronic goods and make sure that they utilise this things at very best level ana as well as make aware of this things to others also so that the different members of society also get aware of these things.

BENEFITS OF RECYCLING:- Recycling raw materials from end of life electronics is the most effective solution to the growing e-waste problem.Most electronics devices contains a variety of materials including metals that can be recovered for future use.By dismantling and providing reuse possibilites,intact natural resources are conserved and air and water pollution caused by hazardous disposal is avoided.Additionally,recycling reduces the amount of greenhouse gas emission caused by the manufacturing of new products.Another benefit of recycling e-wastes is that many of the material can be recycled and reused again.Materials that can be recycled includes ferrous and non ferrous metals,glass and various type of plastics.Non ferrous metals mainly aluminium and copper can be resmelted and remanufactured.Ferrous metals like iron and steels can also be used.Benefits of recycling are extended when responsible recycling methods are used .In the U.S responsible recycling aims to minimize the danger to human health and environment that disposed electronics can create.Responsible recycling ensures best management practices of electronics being recycled,worker health and safety ,and consideration for the environment locally and abroad.In Europe,metals that are recycled are return to companies at the reduced cost.Most of the companies used there own recycling process as this make the cost reduced and it is beneficial for the environment also.So what we all should take care is reusing the whole units,recycling of constituent materials,recycle those components that cannot be repaired and last but not the least responsible disposal of hazardous and non hazardous wastes in permitted landfill.

GSM

Uttaran Chanda of ECE 3rd year

GSM telcos want SUC at a flat 3% now, 1% eventually; say Jio differs:

NEW DELHI: India's GSM telcos have said that the annual fee for using airwaves should be a flat 3% for all airwaves, whether auctioned or not, which should gradually be brought down further to a flat 1%, which will help remove complexities around the current structure involving multiple rates and will aid industry growth.

In a letter dated April 7 to telecom secretary JS Deepak and to Telecom Regulatory Authority of India Chairman RS Sharma, Cellular Operators Association of India's (COAI) described as "an initial step in the right direction" the Telecom Commission's proposal to levy spectrum usage charge (SUC) of 3% for airwaves bought in the next sale, lower than the 5% in last year's auction.

The proposal needs to be cleared by the Cabinet. SUC is the annual fee that telcos pay the government for using the natural resource.

"The high SUC burden on operators adversely impacts investment in infrastructure...there is an urgent need to reduce the SUC rate for all existing spectrum assigned to the operators to a low and a uniform rate across bands and technologies," COAI said, while pointing out the complexities in the current SUC regime, which involves separate rates for auctioned spectrum and a weighted average for overall airwave holdings, which includes non-auctioned bandwidth.

COAI represents top telcos such as Bharti Airtel, Vodafone India and Idea Cellular, besides newcomer Reliance Jio Infocomm. However, the letter clearly specifies that Jio's views on this matter are divergent.

The top telcos have historically held different views on SUC. While the telcos need to pay the multiple rates as SUC, Jio, being the holder of BWA spectrum, needs to pay a flat 1%. Incumbent telcos have long argued for Jio to be brought at par with them, or their SUC to be brought to Jio's levels eventually, citing the need for a level playing field. Jio has opposed this view, saying it will go against extant rules.

Once the TC's proposal is cleared, incumbent carriers will need to pay a weighted average of the new SUC (3% for airwaves in upcoming auctions and 5% in the previous two auctions) and older fee (3-8%) for the non-auctioned airwaves they hold. The SUC on BWA spectrum in the 2300 MHz band - held by Jio - continues to be a flat 1%.

In the latest letter, the industry body has argued that firstly, the SUC is an administrative charge across the globe wherever spectrum is allocated though auctions and it is pegged at a mere 1% to cover the administrative expenses. Hence the letter says that, "a high SUC burden adversely impacts the investment in the infrastructure".

The operators further highlighted that multiplicity of SUC rates leads to ambiguities while entering into transactions such as M&A, spectrum trading, spectrum sharing and even liberalizing airwaves, hence a uniform SUC rate will simplify calculations.

The body has also quoted Trai's recommendations in 2014 that the **SUC** should be brought down to a flat **3%** for all airwaves, including the broadband wireless spectrum which at present attracts an SUC of **1%.**

Hazards of Placement of Mobile Towers in Residential Areas

Bhaskar Sarkar of ECE 3rd year

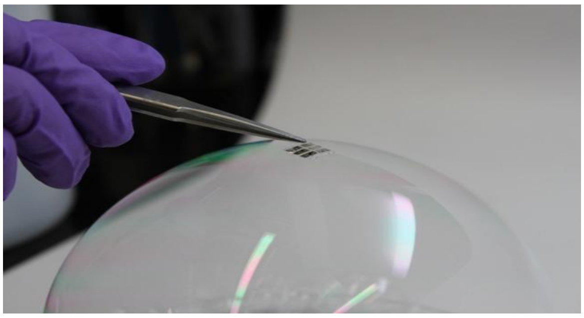
Development of science and technology has been in India from British period. Recently

telecommunication has been especially important as for the growth of Information Technology and its impact the economy of the country. The growth of cell or mobile phones and wireless technology has increased the growth of mobile towers in the country. While all of us, enjoy using mobile and wireless technology, now we have to introspect the placement of mobile towers in residential areas to be long lived and save our future and future generations. Mobile towers are touching skyline making the air toxic and polluted. In a survey, it is said that at a radius of 300 meter of the mobile towers, there should not be any residential area. The most affected are neonatal women and children than the normal population. Mobile towers thronging on the rooftops of residential apartments, hospitals, schools, and educational institutions are very unfortunate to see. The younger the child, the thinner the skull of them and deeper the penetration of mobile electromagnetic radiation to them. The most affected as said are children, adolescents and neonatal women. Health risks like lack of concentration, memory loss and digestive disturbances are caused by radiation. The radiation also leads to the disappearance of butterflies, bees and sparrows. A 2004 German government study found that people living within 1300 feet of cell towers had three times the normal cancer risk. A French medical study of people living within 1000 feet of cell towers documented an unusually high level of complaints of extreme fatigue, memory loss, headaches, sleep disorders, depression, skin problems, hearing loss, and cardiovascular problems. The Indian government has banned mobile towers in school and hospital premises and directed cellular firms to take permission from resident welfare associations before setting up base stations in residential areas, in efforts to limit the harmful effects of electromagnetic radiation exposure. Long-term exposure to cell phone and cell tower radiation, on an average of thirty minutes a day over ten years, causes an increased risk of brain cancer. Around 600 milli watts per square metre is considered safe. But, mobile tower emits more electromagnetic radiation than safe limit. Property owners' get a huge amount of around Rs. 10,000 – 30,000, by giving rent for the placement of the mobile towers. To be safe from all these hazards of mobile towers, we should maintain or take some necessary measures. To maximize the health, we should have proper nutrition and good hydration. People who are staying within 400-500 meters of radius should get tested their house for radiation. Eat foods with high antioxidants. Do not buy any place near the mobile tower area also if the price is low. If any illegal placement of tower is seen by anyone, he/she should complain to the police station or approach to the court. So, to be in safe world we need to protest against illegal act in society and mainly the erection of mobile towers in residential areas. Please, requesting all of you to have a safe and great life ahead.

TEK-BULLETIN

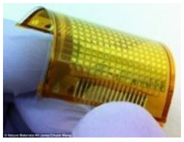
Solar cells developed as thin as a soap bubble

Imagine solar cells are so thin, flexible and lightweight that they could be placed on almost any material or surface, including your hat, shirt or smart phone or even on a sheet of paper or a Helium balloon. Researchers at MIT have now demonstrated just such a technology: the thinnest, lightest solar cells ever produced. Though it may take years to develop into a commercial product, the laboratory proof-of-concept shows a new approach to making solar cells that could help power the next generation of portable electronic devices. The new process is described in a paper by MIT professor Vladimir Bulovic, research scientist Annie Wang, and doctoral student Joel Jean, in the journal Organic electronics. Bulovic, MIT's associate dean for innovation and the Fariborz Maseeh (1990) Professor of Emerging Technology, says the key to the new approach is to make the solar cell, the substrate that supports it, and a protective over coating to shield it from the environment, all in one process. The substrate is made in place and never needs to be handled, cleaned, or removed from the vacuum during fabrication, thus minimizing exposure to dust or other contaminants that could degrade the cell's performance.



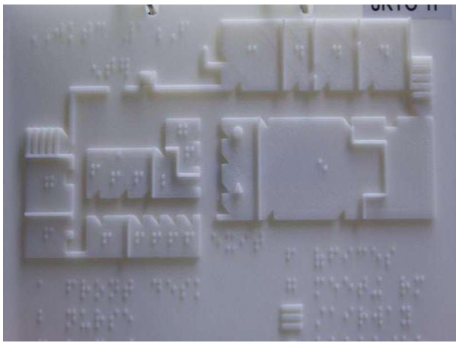
Smart paper skin can imitate the functions of human skin

Scientists have created what's been dubbed the world's first interactive 'electronic skin' that responds to touch and pressure. When the flexible skin is touched, bent or pressed, built-in LEDs light up – and the stronger the pressure, the brighter the light. The researchers, from the University of California, claim the bendy e-skin could be used to restore feeling for people with prosthetic limbs, in smart phone displays, car dashboards or used to give robots a sense of touch. The skin was created by Ali Javey, a professor of electrical engineering and computer science at the Berkeley campus of the university. It was built from a layer of polymer, or plastic, thinner than a piece of paper, melted onto the top of a strip of silicon. Once the plastic had hardened, flexible electronic circuits were layered onto the skin.



3D printing tech helps device Braille maps for the blind

Using a high-tech 3D printer, a Rutgers undergraduate and his professor created sophisticated braille maps to help blind and visually impaired people navigate a local training centre. The three plastic tactile maps are for each floor at the Joseph Kohn Training Centre, a state-funded facility for the blind and visually impaired in New Brunswick. And the goal is to print maps for all the centre's students. "It was a very fulfilling experience," said Jason Kim, 25, a senior mechanical engineering student in the Department of Mechanical and Aerospace Engineering in Rutgers' School of Engineering. "I learned a lot. The most difficult part was trying to imagine what it would be like to be blind myself so I could better tackle the problem, and it opened my eyes to the whole visually impaired and blind community." Howon Lee, an assistant professor in the Department of Mechanical and Aerospace engineering whose research focuses on 3D printing, said the maps are a form of GPS for the blind and visually impaired.



Tech that lets smart watches track fingers in mid-air

As mobile and wearable devices such as smart watches grow smaller, it gets tougher for people to interact with screens the size of a amtchbook. That could change with a new sonar technology developed by University of Washington computer scientists and electrical engineers that allows you to interact with mobile devices by writing or gesturing on any nearby surface – a tabletop, a sheet of paper or even in mid-air. Finger IO tracks fine-grained finger movements by turning a smart phone or smart watch into an active sonar system using the device's own microphones and speakers. Because sound waves travel through fabric and do not require a line of sight, users can even interact with a phone inside a front pocket or a smart watch hidden under a sweater sleeve.

TEK-LAUGHTER

Wikipedia: Enter a word… I have pages to tell. Google: Enter a query… I have unlimited ways to answer. Internet: Without me, you both are nothing. Computer: Without me, You are useless…… Electricity: Keep talking.

Toyota has announced it will start integrating Microsoft Technology into their vehicles. It's perfect for the person who wants a car that crashes every ten minutes.

A tongue twister…….??
Nine Pipe Pour Bun Pipe Pour Pipe Bun Pipe Pour
Its not a tongue twister.
It is Lalu Prasad Yadav giving out his mobile number 95415 45154!
In english.

Superb Family Introduction!!!
A man is introducing his family:

1. This is my wife…. Google Bannerjee… if you ask one question she would give many relevant and irrelevant answers….!!!!
2. This is our son… Facebook Bannerjee… he makes sure that our personal matters reaches the whole colony…!!!!
3. This is our daughter…. Twitter Bannerjee… whole colony follows her…!!!
4. This is my mother… Whatsapp Bannerjee… she buzzes all day commenting on everything..!!!
5. And I am, Orkut Bannerjee… I have become irrelevant………..!!!!!!!

ANSWERS

1. Nilam Sanjeeb Reddy.
2. Hyderabad and Secunderabad.
3. America.
4. Iran.
5. John Keats.
6. Steve Waugh.
7. William Stern.
8. Gopalkrishna Gokhale.
9. Durga Agarwal.
10. Germany.
11. Rohit Bansal, Kunal Bahl.
12. Gautam Gambhir.
13. Brendon McCullum.
14. Scotland.
15. Torch Light.
16. William Disney.
17. Paraguay.
18. Peter Parker.
19. Ramakant Achrekar.
20. South Korea.
21. Denis Papin.
22. Ram Rajya.
23. Sunil Gavaskar and Chetan Sharma.
24. Martin Cooper.
25. 2227.
26. David Beckham.
27. Harbhajan Singh.
28. Rajkumar Hirani.
29. Gorakhpur Station (Uttar Pradesh).
30. Sunil Gavaskar.
31. “Playing it my way”.
32. Julius Caeser.
33. National Aeronautics and Space Administration.
34. Tim Berners Lee and Robert Cailliau.
35. Mohammad Iqbal.
36. Sucheta Kripalani.
37. Samuel Wilson.
38. Mohammad Aamir Hussain Khan.

All you need in this life is ignorance and confidence, and then success is sure.

-Mark Twain

There are many problems, but I think there is a solution, it’s just one, and it’s education.

-Malala Yousafzai

Work hard in silence, let your success be your noise.

-Frank Ocean

Perpetual optimism is a force multiplier.

-Colin Powell

Problems are not stop signs, they are guidelines.

-Robert H. Schuller

Tell me and I forget. Teach me and I remember. Involve me and I learn.

-Benjamin Franklin

Learning never exhausts the mind.

-Leonardo da Vinci

You cannot open a book without learning something.

-Confucius

ALUMNI TALK

With Sneha Das and Pooja Singh working in Ericsson in Telecom domain.

1. What are the subjects we need to study for jobs in telecom domain?

A: Mainly you have to be equipped with the subjects Telecommunication and Networking for the telecom domain jobs (especially UKD sir's notes).

2. Does supple matters for getting a job?

A: No. ☺

3. Does communication skill matters in a company for a job?

A: Yes.

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