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Message from President's Desk

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Message from Provost's Desk

Education is critical for humanity's growth, wealth, and well-being. Civilized conduct.. View More

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Happening Around the World









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GSFC University Newsletter Editorial Board



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Message from President's Desk

Shri P.K. Taneja, IAS (Retd.)
President - GSFCU
Former ACS Industries, Home and Forest & Environment, GoG



"As leaders in education, our job is not to control those whom we serve but to unleash their talent. If innovation is going to be a priority in education, we need to create a culture where trust is the norm."

George Couros

At GSFC University, we think that a leader concentrates on the skills of the young and provides them with a platform to exhibit their talents, rather than one who imposes himself and his beliefs on others. We believe in the holistic development of our students at GSFC University, and we strive to offer them a variety of opportunities to do so.

At GSFC University, we are dedicated to providing learners with wide-ranging interdisciplinary learning that involves meaningful and satisfying knowledge, skills, attitudes, and values. We will guarantee that the ecosphere is well-coordinated, allowing new knowledge to fructify and fruitful innovations to flourish. Without a doubt, the University plays a critical role for students and faculty, enabling individual achievement via intensive involvement, ultimately contributing to the achievement of the national objective of a socially aware skilled country. We will have a number of sparkling drives that will pique the students' attention, followed by a number of exceptional efforts that will support their quest, all under the banner of "Education Re-envisioned."

We warmly welcome new students and talents to the institution, and we look forward to exploring the new frontiers of the youthful endowments. I am confident that the fresh and young students will infuse the campus with energy and vigor and rock the place.

Message from Provost's Desk

Dr. Nikhil Zaveri Provost (Vice Chancellor) **GSFC University**



"Education is not the learning of facts, but the training of the mind to think."

Albert Einstein

Education is critical for humanity's growth, wealth, and well-being. Civilized conduct, growth, peace, development, and human dignity are all embodied in education. Education aids in the development of character, the strengthening of morals, broadening perspectives, and preparing a nation for a better future. The entire purpose of human creation would be useless without it.

At GSFC University, we genuinely think that better-educated people are more responsible and caring, aware of their state's role and duties, and more aware of their rights and obligations. Consequently, we place a premium on students' holistic growth and preparing them for employment to make them more progressive and advanced in all fields. Our students are the sole basis for our continued existence, survival, and expansion. By offering assistance to teachers and infrastructure, we view ourselves as facilitators in their pursuit of knowledge. We use a variety of pedagogical techniques to guarantee that our students have an enriching experience. We serve as catalysts for them to realize their full potential as successful individuals and generous human beings. Our delight stems from their achievement, and their joy stems from our success.

I welcome all the newly admitted students to the university and wish them success in every field of their life.

From Editor's Desk

Ms. Sneha Bajaj Chief Editor - 'Eventia' **GSFC University**



"Wisdom is not a product of schooling but of the lifelong attempt to acquire it."

- Albert Einstein

This quote emphasizes a very important point which is that wisdom cannot be taught in schools, it can only be acquired with life experience. We, as a parent, teacher or child, tend to ignore this. This quote has another connotation that implies that continuous learning is something that is required for being successful in any field. Continuous learning is the key to upgrade oneself. GSFC University focuses on the same concept not only for the students but also for the teaching and other non-teaching staff of the university and that's what makes it different than others.

This issue of the bulletin focuses on the university's developmental programmes, such as PINUP and the Foundation Course. Not only that, but we've put a strong emphasis on hands-on sessions, guest lectures, spiritual elements of life, and science. I am grateful to the whole Eventia team for their unwavering support.

Happy reading!

With Best Regards,

Ms. Sneha Bajaj

Chief Editor – 'Eventia' & Assistant Professor GSFC University

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Guestinspiration Post

Mr. Ghanshyam M Patel Technical Director, CIFC I Pvt. Ltd. New Delhi



What is nanotechnology?

Nanotechnology is the term given to those areas of science and engineering where phenomena that take place at dimensions in the nanometer scale are utilized in the design, characterization, production and application of materials, structures, devices and systems.

> What is nanotechnology and how it works?

Nanotechnology is the understanding and control of matter at the nanometer scale, where unique phenomena enable novel applications. Encompassing nanoscale science, engineering, and technology, nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale.

What does nanotechnology deal with?

Nanotechnology is a field of research and innovation concerned with building 'things' - generally, materials and devices - on the scale of atomsand molecules. A nanometer is one-billionth of a meter: ten times the diameter of a hydrogen atom.

How nanotechnologies affect our everyday life?

Nanotechnology has the huge potential to transform people's lives for the better. We start using cheap, lightweight solar plastics, which makes solar energy widely available. Nanoparticles can clean up toxic chemical spills, as well as air-borne pollutants.

What are nanotechnology's advantages and disadvantages?

Nanotechnology offers the potential for new and faster kinds of computers, more efficient power sources and life-saving medicaltreatments. Potential disadvantages include economic disruption and possible threats to security, privacy, health and the environment.

How can we avoid the effects of nanotechnology?

Dispose of cleaning materials in a sealed bag to prevent further release of the nanomaterial. Use sealed or closed bags/containers, or covers all containers when not in use. Restrict access to areas where nanomaterials are used. Use liquid products where possible to help reduce airborne exposures.

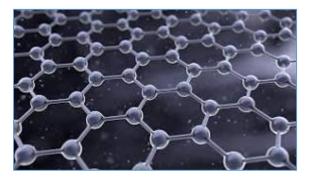
Does nanotechnology improve our society?

Nanotechnology is helping to considerably improve, even revolutionize, many technology and industry sectors: information technology, homeland security, medicine, transportation, energy, food safety, and environmental science, among many others.

Why nanotechnology is so important?

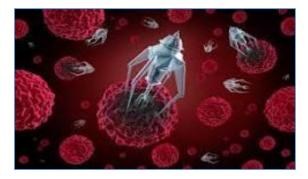
Why is nanotechnology important? Nanotechnology improves existing industrial processes, materials and applications by scaling them down to the nanoscale in order to ultimately fully exploit the unique quantum and surface phenomena that matter exhibits at the nanoscale.

Why are nanomaterials special?



Nanomaterials are special for several reasons, but for one in particular – their size. Nanomaterials are up to 10 000 times smaller than the width of a human hair. And this tiny size makes them very valuable for all kinds of practical uses.

What is the future of nanotechnology?



In the future, nanotechnology could also enable objects to harvest energy from their environment. New nano-materials and concepts are currently being developed that show potential for producing energy frommovement, light, variations in temperature, glucose and other sources with high conversion efficiency.

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> Is nanotechnology safe?

Lung damage is the chief human toxicity concern surrounding nanotechnology, with studies showing that most nanoparticles migrate to the lungs. However, there are also worries over the potential for damage to other organs.

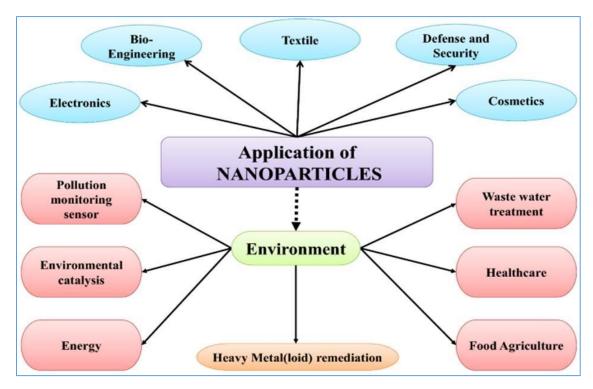
> What are the disadvantages of using nanotechnology in medicine?

Nanotechnology can even be used in the future to treat life-threatening diseases like cancer. However, it does have some drawbacks, for example, toxicity, environmental harm and organ damage caused by nanoparticles.

How long do nanoparticles stay in the body?

Unlike conventional imaging agents and therapeutics, many nanoparticles are highly stable in vivo exemplified by a recent study suggested that quantum dots may be retained in the body (and remain fluorescent) for more than 100 days.

What are the positive effects of nanotechnology?



The benefits associated with nanotechnology include among others increase in yield and quality of produce in agriculture, improved cosmetic products, directed delivery of medicines and sensor applications.

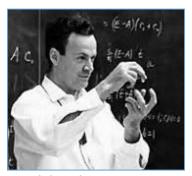
How do nanoparticles leave the body?

Nanoparticles which are not absorbed by the gut or the lungs eventually leave the body in the faeces - either directly or after they are moved up from the lungs by normal clearance of mucus and then swallowed.

Why is nanotechnology important in modern society?

Major benefits of nanotechnology include improved manufacturing methods, water purification systems, energy systems, physical enhancement, nanomedicine, better food production methods, nutrition and large-scale infrastructure auto-fabrication.

Who is the father of nanotechnology?



Physicist Richard Feynman

Nanotechnology is science, engineering, and technology conducted at the nanoscale, which is about 1 to 100 nanometers. Physicist Richard Feynman is the father of nanotechnology.

Why nanomaterials are booming nowadays?

Nanomaterials offer lightweight and strong materials for applications in the automotive and construction industries. Nanotechnology in coatings make surface materials more durable, water- and stain-resistant, offering solutions in the textile industry for both high street fashion and for high- end sporting equipment.

Will nanotechnology improve our way of life in the next 20 years?

In the next 20 years, nanotechnology will touch the life of nearly every person on the planet. The potential benefits are mind boggling and brain enhancing. But like many of the great advancements in earth's history, it is not without risk.

Which nanoparticle is more dangerous?

The National Institute for Occupational Safety and Health (NIOSH) has suggested an occupational exposure limit based on elementary carbon especially for carbon nanotubes: 0,001 mg/m3. Even spherical nanoparticles, when in aggregates, are more toxic per unit mass than larger particles of the same material.

Does nano mean small?

Just how small is "nano?" In the International System of Units, the prefix "nano" means one-billionth, or 10⁻⁹; therefore one nanometer is one-billionth of a meter. It's difficult to imagine just how small that is, so here are some examples: A sheet of paper is about 100,000 nanometers thick.

➤ Are nanomaterials the future?

Nanotechnology is an emerging science which is expected to have rapid and strong future developments. It is predicted to contribute significantly to economic growth and job creation in the coming decades.

➤ Why is nanotechnology now?

Nanotechnology has the unique ability of reproducing on its own which means exponential technology. It also represents manufacturing system meaning capability of making more manufacturing system in turn meaning factories will be capable of building products cleanly, cheaply, and rapidly.

GUIITAR Council Recognized as a Nodal Institute by the Government of Gujarat

Dr. Saroj Shekhawat CEO, GUIITAR COUNCIL



GSFC University, GUIITAR Council, Students Startup Innovation Policy (SSIP), Institution's Innovation Council and Startup Gujarat organized a webinar on "How to Commercialize Your Idea?" on 25th August, 2021 at 04:30 to 05:30 P.M. through Google Meet Platform.

Mr. Kirankumar Parmar, Sr. Manager, GUIITAR Council has welcomed invited speaker, GSFC University Management, CEO-GUIITAR Council, Dean, Associate Deans, Students, Faculty and Participants.

Ms. Anjali Nair, B.SC. Biotechnology, SoS, GSFC University has introduced invited speaker Ms. Samiksha Ganeriwal, the founder of Kagzi Bottles Pvt. Ltd. to the participants.

Ms. Samiksha started with the mission of her company "To change the ways India Packages & Lead a Plastic Free Revolution". She said since the 1950s, 8.3 billion metric tons of plastics have been produced and half of that in the past 15 years alone. India generates 25,940 tons of plastic waste every day but collects only 60% of it. She has also worked on bio-platic.

Ms. Samiksha explained alternatives of plastic usage in innovative way such as paper bottles, paper pouches, terracota boxes, terracotta bottles, edible cutlery from rice husk, paper mask, bagasse containers etc.

Ms. Samiksha further shared her innovative product "Paper Bottles" made from paper waste which is India's first eco-friendly, sustainable and 100% compostable replacement to single-use plastic bottles. The waste paper pulp is moulded into two halves, which are then coated with a waterproofing solution and glued together using hot press to create the bottle. Paper bottles are mostly used for packaging of toiletries like liquid soap, shampoo, lotions, powders etc. and can hold liquid for at least six month. Food grade waterproof barrier is used inside and outside of bottles. One paper bottle cost is Rs. 20. Her family and friend helped her for initial investments to convert her idea into prototype and commercialization. Now, she is looking funds from angel investor/venture capitalist for setting up manufacturing plant for mass production.

Ms. Samiksha completed MBA in 2006 and at that time working on project to find solution/alternative of plastic and come up with the usage of Non-woven Polypropylene (NWPP) which is mostly used for disposable/reusable fabric. She shared idea of NWPP usages with others but received negative feedback and therefore, dropped the idea. Now she realized that if she had continued the NWPP product development idea at the age of 26 situations would be different. She said nowadays hospital

bed sheet, carry bag, mask, disposable clothes, PPE kit and many more items are made of NWPP. She advised participants to believe in him/her idea and one day you will succeed.

Ms. Samiksha explained the challenges she faced while developing the product as a women entrepreneur. She said managing family and company is sometimes a big task for her but big companies have always motivated her to achieve dream. She has not received any support from the Government to develop the product. Recently Ms. Samiksha was incubated at T-Hub, Hyderabad for startup support.

Ms. Samiksha filed a patent for her innovation paper bottle and also filed a trademark for her company logo. She encouraged students to protect their innovation by filing patent/design/copyright/trademark etc.

Ms. Samiksha Company Kagzi now works on usage of rice husk and sugarcane bagasse for packaging material development. Her company has also developed Milk box, Milk bottles, Yogurt cup and Paper pouch for food packaging.

At the last she suggested students to start working on innovative ideas for the betterment of environment.

Dr. Saroj Shekhawat, CEO, GUIITAR Council gave feedback on the expert talk and expressed the vote of thanks.





GUIITAR Council Startup Talk by Mr. Rupesh Shah, Director, Baroda Web, Vadodara

Mr. Kirankumar Parmar Sr. Manager, GUIITAR COUNCIL



GSFC University, GUIITAR Council, Students Startup Innovation Policy (SSIP), Institution's Innovation Council and Startup Gujarat organized a webinar on "Startup Talk by Mr. Rupesh Shah" on 19th July, 2021 at 04:00 to 05:00 P.M. through Google Meet Platform.

Mr. Kirankumar Parmar, Sr. Manager, GUIITAR Council has welcomed invited speaker, GSFC University Management, CEO-GUIITAR Council, Dean, Associate Deans, Students, Faculty and Participants.

Dr. Saurabh Shah, Dean, School of Technology, GSFC University has introduced invited speaker Mr. Rupesh Shah, Founder & Director, Barodaweb to the participants.

Mr. Rupesh has described the Agriculture Age, Manufacturing Age, Information Age and Conceptualization Age to the participants. He said unique ideas will bring money for you and explain the concept of Choice-Chance-Change. He said you must make a choice to take a chance or your life will never change.

Mr. Rupesh narrated the story of two monks who visited a poor family and asked for food and night stay. Head of the family said they do not have anything to offer them as their source of income is cow milk and they have already consumed it. The Senior Monk understands the situation and instructed the junior monk to release the cow at night and decided to leave the family in the early morning before the wakeup. Junior monk has argued with the senior monk on releasing cow as it is the only source of income of poor family but the senior monk was not convinced and did not explain why he had given such an order. Junior monk did as the senior monk instructed and left the village in the early morning. Senior monk died and the junior monk became senior and visited the same village after a few years. He was surprised when he met the poor family as they have a big house and one of the rich families in the village. The Monk asked the head of the family how this happened. Head of the family said when we woke up in the morning we didn't find our cow and we realized that you had stolen our cow. We are very disappointed as our source of food is not available and my children have nothing to eat. We work hard, find alternative resources for income and decide to become rich. Now, the monk realized why the senior monk instructed him to release the cow. Conclusion of the story is to be visionary and think out of the box.

Mr. Rupesh narrated another story of tortoise and rabbit in four different versions.

- Race 1: Tortoise wins the race
 The moral of the story: Slow and steady wins the race. Do not take any opponent lightly.
- Race 2: Rabbit win the race

Раве

The moral of the story: Fast and consistent will always beat the slow and steady. It is OK to make mistakes, but realize the mistakes quickly and correct them.

- Race 3: Tortoise wins the race
 The moral of the story: To identify your core competency and then change the playing field to suit your core competency.
- Race 4: Both win the race.

 The moral of the story: It is better to be individually talented but, if you work together with other talented people in a team, you could achieve even higher.

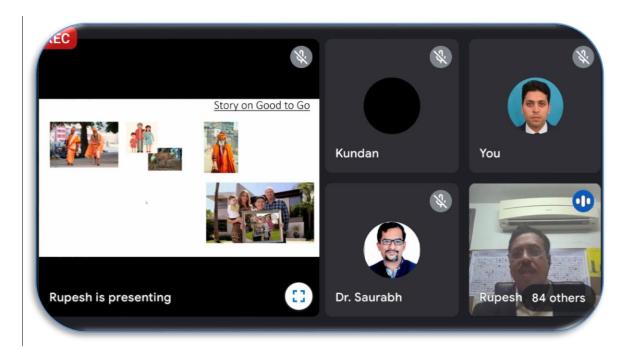
Mr. Rupesh explained the definition of vision and shared how he achieves his vision by dedication and hard work. His vision is to have clients in every corner of Baroda city and today he has more than 1500+ clients in Baroda.

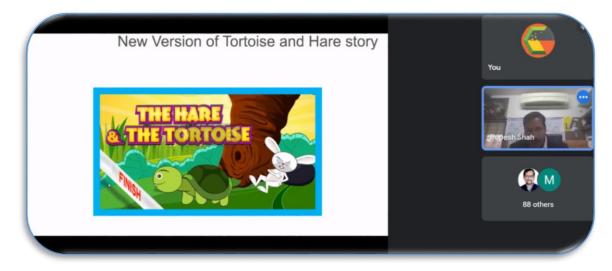
Mr. Rupesh shared his journey from college to the company setup and achieving 1500+ clients at Baroda. He has set up a Company after reaching 200+ clients to minimize various initial costs.

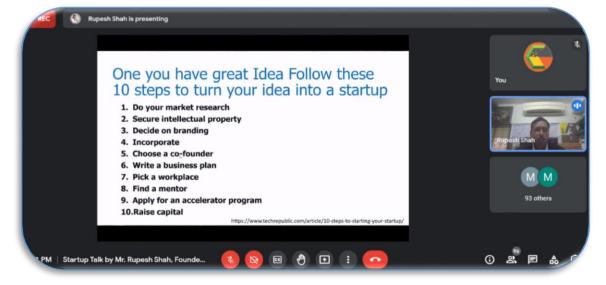
At the end Mr. Rupesh suggested 10 steps to convert Idea into Startups with examples.

- 1. Do your Market Research
- 2. Secure Intellectual Property
- 3. Decide on Branding
- 4. Company Incorporation
- 5. Choose a Co-founder
- 6. Write a Business Plan
- 7. Pick a Workplace
- 8. Find a Mentor
- 9. Apply for an Accelerator Program
- 10. Raise Capital









Finvest Chronicle

Dr. Chetna Parmar Associate Professor – SoM GSFC University



Economic Recovery Update:

The global economy continued to grow at healthy pace with steady recovery in most major economics reflected in pick up in aggregate demand, improvement in consumer confidence, buoyant job markets. The revival was led by US and Eurozone with uptick in consumer spending, rise in job opening, robust sequential GDP growth.

	% of Population		
	Given 1+Dose	Fully Vaccinated	Population (in million)
Canada	71	56	38
U.K.	70	57	68
Israel	64	59	9
Germany	62	52	84
EU	59	50	448
U.S.	58	50	331
Brazil	50	20	213
Mexico	37	20	129
India	27	8	1380
Russia	23	15	146
Indonesia	18	8	274

Source s: Bloomberg JM Financials

In India, the new daily cases plateaued in July, 2021 and net addition to total cases fell to 1.2 million compared to over 2 million a month ago. Consequently, total cases rose to 31.6 million as of 31st July 2021. The active cases moderated slightly to INR 0.42 million compared to 0.5 million as of 30 June 2021

on back of steady recovery rate. The vaccination has been increasing at a steady pace and India is expected to vaccinate at least 60% of its adult population by end of 2021. The supply of vaccinates, which still remains a constant, is expected to ease going forward.

Recovery picks up pace as the restrictions are eased in most states:

The high frequency indicators witnessed a broad based sequential improvement in July, 2021 aided by the gradual removal of restrictions by most major state government. Given the distorted base effect, we have presented the 2 Year – CAGR for indicators in the table below:

Indicators	Units	Apr	Sep	Dec	Mar	Apr	May	Jun	Jul
Retail Registration Auto	% CAGR	-52.5	-10.3	-2.1	-5.7	-19.1	-46.1	-14.7	-7.8
PW		-68.5	7.2	12.4	16.6	-1.9	-37-4	0.8	17.7
PV		-65.5	-49-9	-25.5	-9.7	- 15.9	-46.1	-23.0	- 17.6
MHCV		-51.8	-8.0	-13.7	-3.1	- 15.8	-51.6	-19.0	-6.4
LCV		-60.8	38.7	18.7	21.8	3.1	-34.8	15.6	25.8
Tractors		-44.1	0.5	10.30	7.8	11.4	1.2	-3.6	6.8
Gross GST Collection		-44.5	9.3	13.3	13.9	5.8	-14.2	21.7	10.9
Average E-way Bills		NA	1.5	2.1	- 22.5	- 26.7	-4.7	-1.5	3.7
Power Demand		8.9	40.7	41.1	36.2	33.1	21.5	28.1	30.8
IMPS Spending		-18.3	3.9	6.5	4.4	5.1	4.6	5.5	7.7
Railway Fright Earnings		-21.8	4.2	2.7	0.9	2.4	2.5	2.3	5.8
Manufacturing PMI	Index	27.4	56.8	56.4	55.4	55.5	50.8	48.1	55.3
Services PMI	Index	5.4	49.8	52.3	54.6	54.0	46.4	41.2	45.4
Unemployment Rate	%	23.5	6.7	9.1	6.5	8.0	11.9	9.2	7.0
Labour force participation rate		35.6	40.7	40.6	40.2	40.0	40.0	39.6	40.2

Sources: RBI Report &www.icegate.gov.in

The covid -19 2nd wave has abated in past couple of months and the new cases have plateaued. While there is still risk of resurgence 3rd wave specially driven by the rising cases of Deltas state variant in many countries, State Government have relaxed curbs imposed post the 2nd wave to a large extent?

The economic recovery which faced some headwinds during April – May 2021 was back on track. The reopening of economy and easing of restrictions led to rebound in economic activities and most indicators witnessed considerable sequential improvement in July – 2021.

Equity Market Updates:

Global equities performance was mixed with most major indices in US and Europe ending the month in positive while in Asian markets like Japan, Hong-Kong etc. delivered a negative return. The tables below give the details of performance of key domestic and global indices.

% Change in Indices	July- 21	FYTD-22
S&P 500	2.3	10.6
FTSE	-0.1	4.7
DAX	0.1	3.6
CAC	1.6	9.0
Nikkei	-5.2	-6.5
Hang Seng	-9.9	-8.5
KOSPI	-2.9	4.6
Shanghai	-5.4	-1.3
MSCIEmerging		
Market Index	-7.0	-2.9

Sources: Bloomberg

As on 31st July 2021, NIFTY 50 was trading near 19.4*FY23E price to earnings ratio, in view of the low interest rate environment and healthy earnings growth outlook, these multiples look reasonable. However on an overall basis, the valuation of equity market is no longer cheap with market cap to GDP at 92% and the gap between 10Y Gsec and 1Y – Forward NIFTY50 earning yield at 1.5% inching close to its long term average of 1.7%.

Knowledge Concavity Some of the fraud risk factors for a passenger transport company.

Ms. Tarang Dave
Dy. Manager -Finance
GSFC University



Risk of Unauthorized use of assets (vehicles) of Company (like Taxi owned by Company)?

In Transport (taxi) Company, in case if the Taxi or other transport vehicle is owned by the company itself, then there is risk of unauthorized use of such assets. The drivers may use vehicles of the Company for their personal purpose in an unauthorized way, without any approval or permissions.

This would lead to depreciation of Company's Assets without optimal business use. Such risk can be avoided by proper tracking system of Company's vehicles and timely physical verification of their condition & usage.

Risk of excess amount charged by Drivers from customers in an unauthorized way?

In Transport (taxi) Company, it may be possible that the Drivers would charge excess amount from the customers in an unauthorized way. If the proper controls and awareness would not be in place, the Company may not be able to identify such unauthorized collection by the drivers from its customers. Further, such fraud may lead to have an adverse impact on the reputation of the Company in long term, if that would not be detected in timely manner. Further the Company may require to refund such excess amount in case legal action taken against it.

Such risk can be avoided by implementing the online collection system with proper trail of customer wise collection.

Risk of system (IT) Fraud?

If the Transport Company is operating through online mode, fraud can be executed by hacking the Website of the Company or through manipulating the Website of the Company by unauthorized personnel or hackers. So, fraud can be executed in such companies through unauthorized system (IT) manipulation.

Such risk can be avoided by implementing appropriate IT controls (like firewall and password management system) and antivirus devices.

> Risk of manipulation in reporting of customer count and collection of revenue?

There is a risk of misreporting through manipulation in the actual customer count that availed the Company's Services. It may be possible that, the drivers provide the transportation service to the customer and collect the amount privately without initiating the Company (by charging

some fewer amounts than Company's prevailing rate). This may lead an adverse impact on the Revenue of the Company.

Such risk can be avoided by sound and automatic taxi booking and reporting system.

<u>Unauthorized "pledging" of Company's Assets?</u>

In transport (taxi) Companies, fraud may be executed by taking loans or borrowing money for personal purpose by unauthorized pledging of the assets (i.e. taxies) of the Company. Further there may be risk of raising the fund in the name of Company in an unauthorized way.

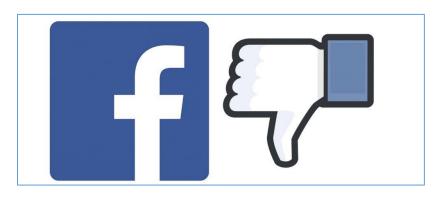
Such risk can be avoided by sound internal control, documentation of ownership papers of Company's Assets and clear delegation of power to authorized signatories.

Students' Corner The How, What and Why of the Facebook Outage.

Mr. Kshipra Jadav CSE – III Semester GSFC University



Let's go in-depth about how exactly Facebook went offline.

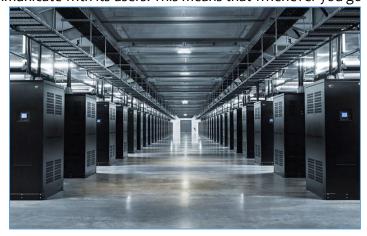


4th October 2021 was a historic day for Facebook Inc. A seemingly small human error led the entirety of Facebook and it's major services like Instagram and Whatsapp to be down for more than 6-8 hours. How exactly did it happen? Did a hacker finally "hacked" Facebook's servers? Did someone just pull the plug on Mark Zuckerberg's whole empire? Stick with us while we cover the whole Facebook outage in detail to finally answer the question "What exactly went wrong on October 4th?"

Facebook's Backbone

Before we get to the actual reason on "what went wrong", we first need to establish some basics about how Facebook actually works behind the scenes. So, the thing is, Facebook has two types of servers on the ground which it uses to communicate with its users. This means that whenever you go

to facebook.com or use any of its services, from Facebook's perspective, you go through 2 levels of servers and then it responds with the data you need. Now, as we all know, the Internet is a network or networks. That's how it got its name. The good thing about the internet is that everything is connected and the bad thing about the internet is that since everything is connected, the speed at which data is transferred from one point to other



decreases due to the sheer amount of data being transferred through one line. To overcome this

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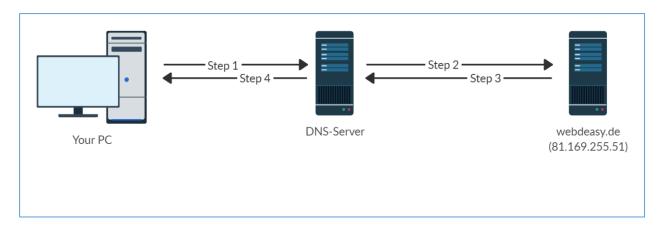
problem, Facebook made their own internet. Quite literally. They have their backbone servers spread throughout the world and they contain all the precious data and the good stuff in them. They're the "big boys" to say. The "small boys" are the relatively small servers which too are spread throughout the world but of course, in different locations. What's the use of this? Well, the "big boys" are practically invisible to the general public. They can only communicate with the "small boys" and nobody else. Whereas, the "small boys" are visible to the general public and that's exactly where your request goes to whenever you use Facebook or any of its services.

But why go through 2 layers of servers just to get the data? Well, since the "big boys" are invisible to the general public and Facebook has laid down fiber cables just for the "big boys" to communicate with the "small boys" and within themselves, the data transfer speeds are exponentially fast. This is like saying - If you want to go from point A to point B and instead of taking the usual route, you take a shortcut which practically nobody knows about. Hence, you would reach point B faster because of no traffic." Similarly, whenever you request some data from the Facebook servers, your request first goes to the "small boys" which in turn forward your request to the "big boys" and since they're connected through the high-speed route as discussed above, your data gets to you much faster than usual.

What Went Wrong?

Now, for this network to function properly, it needs to be maintained. According to Facebook, a regular maintenance check is nothing new and they do these things often. So, this maintenance check was scheduled to happen on October 4th and a part of the network of the "big boys" was scheduled to be taken offline. As per Facebook's blog post about this outage, they issued a command which was supposed to check the "availability of the global backbone capacity". In simpler terms, they were just checking how many of the "big boys" were currently up and functioning. Now, by mistake, instead they executed a command (we don't know what it is) which effectively disconnected all of the "big boys" from the internet. Hence, the shortcut that was mentioned in the above paragraph is now blocked. The "small boys" have no way of communicating with the big boys now since they have been disconnected from them. But, (and there's always a but) the problem didn't stop here. You see, if it were that simple, the "small boys" when requested for data by someone would just give an error or something since they're not connected to the "big boys" anymore. But, the "small boys" also do the job of handling the DNS queries too. What is DNS you ask? DNS or Domain Name Service is the phonebook of the internet. Remember in the good old days when we just had yellow pages where a person's number was written in front of their name? Well, apparently, the internet uses the same thing to function. Whenever you want to access Google or Facebook or any damn site on the internet, you need their IP address to access them. IP addresses are just like phone numbers. They are unique and you need someone's phone number to call them. Hence, just like when you tap on a contact's name and their number is automatically dialed for you, here - you enter the website's name and it is automatically converted to that site's IP address which inturn takes you to the website. This conversion is handled by the DNS. It is just a long phonebook where each site's URL (www.google.com) is stored together with it's unique IP address (142.250.67.228). It was made for the user's ease of access to the internet so that we wouldn't have to type these long, boring and hard to remember IP addresses everytime we want to visit a website.

Page



Now, the DNS at the "small boys" side was smart. Since the "big boys" were disconnected from the "small boys", it saw the disconnection and essentially thought "Hey! These IP addresses don't exist anymore! Let me delete them." and hence even though the names remained, their IP addresses were deleted. Now, whenever we want to go somewhere and we get lost, we ask the local shop owner or a rickshawala for directions, right? And it is 90% guaranteed that we will get the correct directions from them. In the world of networking, the BGP or the Border Gateway Protocol does the same thing. Whenever a request is made, it essentially asks the BGP "Hey! I want to go there. Which route do I take?" and then the BGP guides it correctly. The "small boys" are designed in such a way that if they cannot communicate with the "big boys", they too will step out of the BGP chain. This basically means

that even though the "small boys" were alive and kicking, the BGP effectively kicked them out of its broadcast route. Hence, whenever a request asked for www.facebook.com it just returned an error since there was no route leading to www.facebook.com in the first place.



This basically says that even though the "big boys" were online and functioning (since only the connection between the "small boys" and "big boys" was broken) they were not reachable since the internet effectively forgot where the "small boys" were. This is similar to you deleting a contact from your phone. Even though the person's number that you are deleting still exists and their number exists and functions too, since you deleted their contact, there is no way for you to reach them because along with their contact, their phone number was deleted too.

How It All Came Back

Since both the "big boys" and the "small boys" had disappeared from the face of the Internet, they had to be physically rebooted and fixed inorder to get them back online. Well, the thing is that all of these data centers had top level security measures in place to prevent tampering and it is a good thing too. It turned out that the engineers who were physically present just didn't know how to fix the issue.

So, Facebook had to send their engineers onsite to fix the issue but even that took time since the security in the place was so tight that it took a while before they could access the mainframe and switch everything back up and hence there was this big time gap of around 6 hours before everything was normal.

Conclusion

While we were writing this piece, apparently, Facebook was down again. Thankfully, this time for just 2 hours. Since no technical details have been provided by Facebook, we think that this was just a minor issue in the configuration of their servers since the only statement Facebook gave for it was "Sincere apologies to anyone who wasn't able to access our products in the last couple of hours, we fixed the issue, and everything should be back to normal now."

There is a lot to learn from this outage and people have learnt and improved a lot from this outage and other outages in the past too. While other outages in the past were way more severe and catastrophic than this, this outage too can make us realise how one bad command can make Mark Zuckerberg lose \$7 billion.

Think Aloud What does Dharma actually mean?

Mr. Dhairya Patel Teaching Assistant – Physics GSFC University



In the modern-day, Dharma is often erroneously translated as religion. Dharma does not mean religion. The Sanskrit word for faith is "Panth". Dharma is one of those words which everyone knows, but very few actually understand. We teach very little of this very fundamental concept. And to understand India, one has to understand Dharma. Indeed to understand life, one has to understand Dharma. It is not something that has easy answers; it needs explanations. So, what does Dharma actually mean?

Dharma as a concept may have emerged from Dharmic religions, which is Hinduism, Buddhism, Jainism and Sikhism. But it does not mean that if you do not follow these religions, Dharma does not apply to you. A Christian may have discovered gravity, but it does not mean that if you are a non-Christian, gravity does not apply to you; it does. It's the same way with Dharma.

Dharma is that which binds, which sustain, which balances the universe. Dharma as a concept applies not just to human beings but to the entire universe. From the plants to the ants, to the animals; the tigers, the lions, the elephants, the sun, the moon, the stars. Dharma applies to life. Even the Gods and Goddesses are subject to the laws of Dharma. See the Mahabharat; for example, Lord Krishna, who is God himself, is cursed at the end by Maa Gandhari, who is a human being. And what does Lord Krishna do when Maa Gnadhari curses him? He accepts it with grace.

Now, One can be calm inside in a state of low consciousness, or one can be in a state of balance with consciousness. Another thing to understand about Dharma is that it's not a list of do's and don't s. How can you have a list of do's and don't s for all time? Because as the age changes, the Dharma of the time also changes. How can you have a similar list of do's and don't s for all people? Cause all people are different, so, therefore, we will have a different set of do's and don't s. Can that soldier's list of do's and don't s be similar to mine? Of course not because that soldier's life is different. So, therefore, the soldier's Swadharma is different from mine, which brings us back to that you cannot have a list of simplistic do's and don't s for all time and all people. Dharma expects you to make up your own mind, make your own choices and then live with the consequence. There is not all one-powerful, all-knowing, all-merciful God with a long white beard who will come down and save you. We will dedicate ourselves. Dharma does not treat you like a child; It treats you like an adult. You will suffer or benefit from the consequences of your own actions. If your steps are in consonance with Dharma, then you will help, and If not, then you will suffer.

In that sense, Dharma is very empowering. It is all in our hands; that we ourselves are divine within. Dharma really is not about choices presented to you by life but what you do with the options offered to you. Life is unfair to everyone, but some react negatively with anger and resentment and make things worse for themselves, like Ravan. And some respond to this unfairness with grace, with nobility, and they lead a better, more meaningful life like Lord Ram or Goddess Sita. For example, we can consider Dharma as a piece of the diamond as opposed to carbon. Somehow the same molecules have rearranged themselves. It is the pressure that has created the diamond. But the diamond is so

beautiful. And beauty is attained by responding positively to the forces that life puts upon you. And you may not be in control of what life does to you. But you are in control of how you react. How we react opens up choices for us. If the world is unfair to you and we respond with resentment and anger and turn everyone around us against us, and then we will find that the world becomes even more unfair to you.

We can, of course, then choose that 'Yes, the world is unfair to me. It is unfair to everyone else as well.' as Gautam Buddha had said, "Grief is the fundamental reality of the universe". The first of his four noble truths. So how can I react to it that? Fine. Negative energy has come to me. Can I try to give out positive energy to those around me and then maybe some around them, will give me positive energy back in turn and I might get into a positive spiral'. So the choices I make define what the next set of options offered to me are.

Dharma adapts to what state of life you are in.

There are four levels of Dharma:

- 1. **Sanatan Dharma**-One which is timeless, which is Dharma for the entire universe and present for all time.
- 2. Yug Dharma-The Dharma of the age.
- 3. Kul Dharma-The Dharma of the nation or the community that we live in.
- 4. **Swadharma** My own Dharma, which I have to define by myself. No one else should tell you what your Swadharma is because it's a bit like no one else can tell you you are in love. Only you can.

And an ideal life is where your Swadharma is in alignment with your Kul Dharma, is in alignment with your Yug Dharma and is in alignment with your Sanatan Dharma. If your Swadahrma is not in alignment, you may be misguided about defining what your Swadharma is.

So what is Dharma?

Can it be that Dharma is more of a journey than a destination? Cause when we actually reach that destination of ideal alignment, we will get Moksh. We will not be here anymore. So in a sense, it is a continuous search. And if there is one way which can perhaps encapsulate, it is tough too, but if it can, it is a state of balance. Being in a state of Dharma is when our actions and words align with our thoughts and our emotions. So the stillness that I attain within, will make the responses that I give to live and events that are happening outside of me.

So how do you know you are in Dharma? Are you with Dharma? The answer is - you are balanced inside; you are calm inside.

Lesson to Learn

PINUPS - President's Initiative for Nurturing Unlimited Potentials of Students

Ms. Sneha Bajaj Assistant Professor – English GSFC University



An important part of the mission of GSFC University is to improve the quality of the graduating student experience. Students seek to elevate their knowledge and skills during their studies to build bright careers. In the process, teachers play a vital role in providing support with sympathy so that students become comfortable and forthcoming to share their concerns and proper communication between them takes place. As such, students have immense potentialities to perform, but, due to various reasons, such as, social, cultural, and psychological, students are unable to bring out their potentials, and their performance remains limited. Hence, they require various support services from instructions to incentives. Universities need to become innovative in order to transform the students' persona in a way that when they become graduates they turn out to be confident, committed individuals by whom the nation gets citizens who can contribute to the development and growth of the society.

GSFC University envisions its students as industry-ready and employable with holistic development following a student-centric approach. The President of the GSFC University feels concerned about the future of the students and the role played by the University in fulfilling the vision. Therefore, it requires a special initiative whereby at least 5% of the brightest students of the University can be guided, supported and mentored with special activities so that they become distinct in their identity to make a mark in the real-life world. The name of the initiative has been decided as PINUPS - President's Initiative for Nurturing Unlimited Potentials of Students

Objective

The objectives of the initiative are:

- To groom the bright students for a better career and life.
- To evolve practices for providing support to the students to enhance academically.
- To guide students in exploring better alternatives for career building.
- To provide effective mentorship for refining the personalities of the students.
- To help the students by nurturing their unlimited potentials for a better outcome.
- To strengthen the students' knowledge base by offering additional academic inputs.
- To help the students by bridging the skill-gap with extra activities.
- To offer activities in order to develop a positive outlook and attitude towards the world.
- To instill the values of life in order to make the students better human beings.
- To enhance overall competence, capability and confidence for taking up challenges of life.

Implementation

To implement the initiative into action, it has been decided to identifying the 5% of the brightest students from each school either on the basis of their CGPA obtained in the examinations, and 12th std. marks for the first-year students, or by conducting a separate called as Test for Assessing Students' Caliber (TASC) for assessing the quality of students at our University each year.

Meanwhile, the right teachers may be identified as career guides or counselors to mentor the students and have to be prepared as a mentor by training them through exclusive workshops. Workshops for Mentorship

Раве 28

Syllabus

MODULE 1- Mentors and Mentorship – preparing perspective

MODULE 2- Developing Professional Approach to Mentoring

MODULE 3- Communication Skills for Effective Mentoring

MODULE 4- Socio-Intellectual Development

Workshop I - 6th March 2021

The first workshop has been conducted on 6th March 2021. A morning session has been conducted by Dr. Dhvani Patel on 'Mentoring the Mentors' where she discussed goal setting and how to create a concern and love for education & commitment for the self & society from 10.00 am till 1.00 pm. The afternoon session has been conducted by Prof. Pushpanathan who shared his expertise on 'Developing Professional Approach to Mentoring'. He discussed mentoring style, SWOT analysis & conflict resolution with 4Cs collaboration, communication, creativity & critical thinking from 2.00 pm till 5.00 pm.













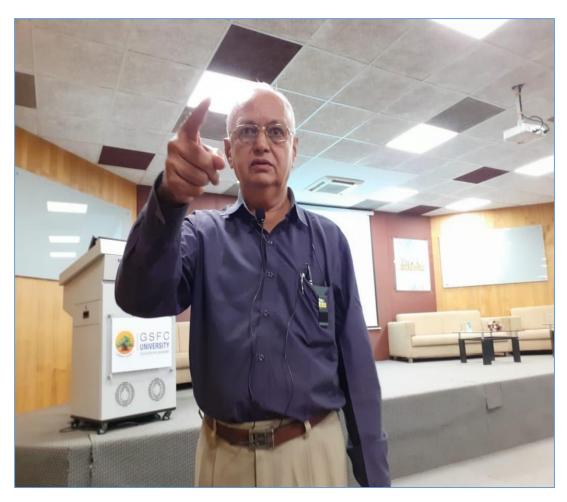
Workshop II - 21 August 2021

The Second workshop on mentoring has been conducted on 21st August 2021. A morning session has been conducted by Dr. Rajendra Singh Jadeja on 'Communication Skills for effective Mentoring' where he discussed what communication is and what is mentoring and what interconnectivity is. He also discussed the components of effective mentoring. Ms. Sneha Bajaj assisted him in the session which started from 10 am till 1.00 pm.

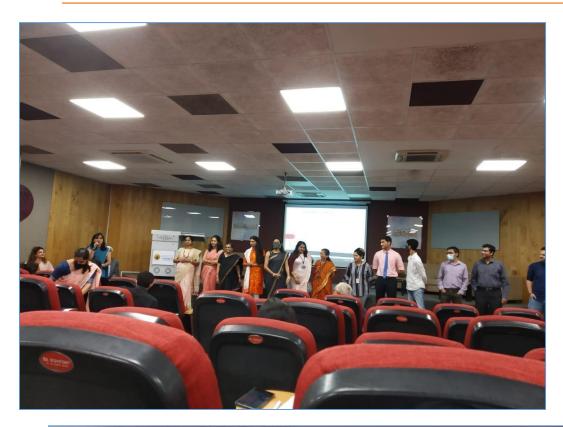
The afternoon session has been conducted by Dr. Ramesh Kothari who shared his expertise on 'Socio-Intellectual Development'. He discussed how mentoring can help society, what are the characteristics of a good mentor and how creative a mentor can be. Dr. Rupesh Patel and Ms. Ankita Patel assisted him during the session from 2.00 pm till 5.00 pm.













The entire process of mentorship should be well monitored so that the entire initiative gives the benefits to the students maximally. Meritorious students may be appointed as Academic Associates to leverage their strength for enhancing the academic caliber of other students through peerlearning. The main goals as a mentor are to provide personal guidance, encouragement, and emotional support to students. A mentor can only guide and support a student if he/she has a strong relationship based upon mutual trust and respect. Mentors build close relationships with their students by meeting with them on a regular basis; this provides students with a feeling of stability. A mentor, by showing up on time, acknowledging the mentee's thoughts and worries, listening to his or her issues, being honest, and consistently showing that the mentor cares, a student can become a strong, and good human being. Such a process will help to elevate the academic performance of students and to enable developing holistic personalities.

Foundation Course report

Ms. Shivani Joshi Teaching Assistant – English GSFC University



Foundation course aims at emphasizing on educating the students about various aspects of on and off-campus life, creating well-rounded personalities who can contribute to the society, can adapt to their surroundings and turn out to be great thinkers and problem solvers in all walks of life. GSFC University conducts the foundation course for the newly admitted students.

With a view to acquaint with ethos of university and help students settle down in university atmosphere, encourage them to build sense of self confidence, explore creative pursuits and develop minds and bodies to make them wholesome and well- rounded global citizens, GSFC University organized 3rd Foundation Course for 10 days for the batch of students enrolled in 2020-21. The Foundation Course was held during 23 August 2021 to 4 September 2021.

The topics focusing on the objectives of the Foundation Course were delivered as expert talk, engaging activities and workshops. To facilitate the students who were not able to join on campus, the sessions were also streamed live via google meet, zoom and YouTube.

To ensure the holistic development of the students, the topics were divided into four – Body, Mind, Intellect and Soul.

Body Sports Activities Prevention of Lifestyles in Young Adults First Aid Zumba – Body fitness Self Defense	Mind Session on positivity Origami – Fine arts 5S Grooming & Etiquettes Mind Management –Emotional Wellbeing Good Habits
Intellect Story-Board – Ideas as a sequence of Images Traffic and discipline on road Light the Fire in your Heart Life & Literature Placement Talk Mono Prints	Soul Who am I? Heartfulness & Meditation Yoga Life Inspiration By Dr. Jaideep Sharma

The program coordinator was Dr. K Santoshkumar and the main coordinators of the foundation course were Ms. Sneha Bajaj and Ms. Shivani Joshi.

The faculty coordinators for both the groups were:

- 1. Dr. Sanjukta Bose Goswami
- 2. Ms. Kalyani Joshi
- 3. Ms. Khyati Joshi
- 4. Mr. Dhairya Patel
- 5. Ms. Rujul Desai
- 6. Dr. Yesha Master
- 7. Mr. Sameer Soni
- 8. Dr. Trupti Gajaria
- 9. Ms. Bhargavi Sonavane
- 10. Ms. Heena Sheikh

Glimpse of Foundation Course

Annexure - VI Glimpse of Foundation Course











































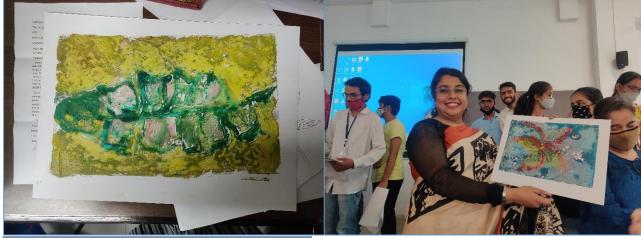
















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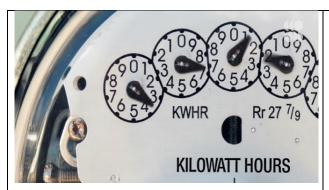








Happening Around the World - Infolinks



Title: - We've Been Wrong About How We Build Homes

Link:- https://youtu.be/qBRg9qwj2to



Title: - Launching Soon: NASA's First Asteroid Deflection Test

Link:- https://youtu.be/w85djkEERUM



Title: - How to make Self-balancing one wheel electric Scooter at home Part-2|| DIY

Link: - https://youtu.be/4lqlXYEYcFk



Title: - You're Breathing in Microplastics, But What Does That Mean for Your Health?

Link: - https://youtu.be/R4MyifvIfbY



Title: - Top 4 inspire award project | National Level Science Projects | innovative ideas

Link: - https://youtu.be/ikUlG07zspk





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