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From The Desk of the Editor-in-chief…

COVID 19 AS A CATALYST

"EVERYTHING HERE -Happens for a reason—Bhagwad Gita"

We are all born and raised in a flawed environment. We learn to pick up behaviours which limit ourselves, but the world demands something different. Taking the right decision can get hard when one is not open to new experiences. The society always changes, righteous behaviours from the past may now be inappropriate.

COVID-19 was an unexpected event that nobody had seen coming. In the blink of an eye, the world changed and the virus drastically shattered economic, social and healthcare structures. As these systems crumbled, the environment shifted, and the world was suddenly thrown into a state of chaos and uncertainty. Businesses shut down, thousands of labourers began the long migration back home and scientists all over the world struggled to find a chink in the virus' armour. The future seemed bleak, with inflation, poverty and cases of infection steadily climbing each day. Yet even as the going seemed tough, hope was just on the horizon.

While COVID-19 did shake the world order it also brought with it unprecedented change and opportunities. The pandemic acted as a catalyst of innovation and drove home the necessity of self-sufficiency and self-reliance. Prime Minister Narendra Modi's Atmanirbhar Bharat Abhiyan targeted the creation of a healthy environment for local businesses to grow and flourish as well as expanding the scope of production and service sectors. The transition from a physical world to a rapidly growing digital world lead to the creation of several new opportunities.

Even as the government worked towards it goal of economic independence, the market expanded swiftly as brands established and cemented their online presence. Formal institutions of learning and development shifted to a new structure of communication, made possible only by the development of a stable system of network connectivity and the internet. A new market opened up for sanitary goods and home delivery of basic necessities. Fuel prices dropped as did the air pollution levels. Families got time to sit down and bond together. Consumers started focusing on sustainability and became more environment conscious. Thus, even in the most adverse circumstances, we adapted and adjusted.

While the pandemic is far from being over and the virus continues to be a matter of concern, we have learnt to make the best of the situation and go on despite the personal and professional losses that we have faced. Humanity banded together as countries came together internationally to cooperate and provide aid and save lives. And that is the strength of the human spirit- to endure and go on despite grief and hardships that one might encounter, for this life is all but a trial of strength and persistence. Alongside these efforts to overcome the pandemic, we must work together to end hunger, promote education and the resumption of learning, and protect the planet. By doing so, we will be contributing to a fair, just and inclusive recovery.

Sanjeev Bansal

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An Analysis of the illegal Wildlife Trading of a Pangolin in India

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Asian pangolins are a profoundly compromised animal varieties bunch, basically because of the apparent therapeutic worth of their scales. Expanded interest from China has brought about pangolins being the most dealt with vertebrate the world. Two pangolin species are accounted for to happen in India which is Chinese pangolin (Manis pentadactyla) and Indian Pangolin (M. crassicaudata). The Indian pangolin (Manis crassicaudata) is under danger because of hunting for nearby utilization and unlawful dealing of scales and meat. The lack of logical investigations on the environment of the M. crassicaudata has debilitated precise evaluations of its preservation needs. No companion inspected concentrates on exist enumerating these species' present circulation or status inside India. In this paper, I additionally examination the report of momentum status of pangolins dependent on my research paper, Indian Pangolin (Manis crassicaudata), a jeopardized mammalian species under IUCN red rundown. In public and global market the Indian Pangolin are profoundly in exchange essentially for its meat and scales. In checking illicit natural life, exchange of Indian Pangolin on public and worldwide level untamed life DNA crime scene investigation assumes a significant part in the distinguishing proof of species from the held onto material. During the research, I noticed that human Indian pangolin struggle is available, on the grounds that this species harm to crops and in the reaction human killed this species. Conventional healer likewise utilized this species in customary medication. This is the most traffic creature in India. It is presumed that this species has dangers and declined quickly because of deforestation, clashes and ethno restorative employments of this species.

Keywords: India, Pangolin, Trafficking, Seizures, Hotspot of poaching, Trade route, IUCN and WPSI

INTRODUCTION

Natural life poaching is straightforwardly connected with unlawful untamed life exchange. Despite the fact that poaching is perceived as a significant danger to natural life in India, it has not been broke down quantitatively, due to an absence of information. Consequently, the comprehension of poaching or illicit untamed life exchange and its actual ramifications on preservation has not been considered by strategy creators. The lack of information on poaching in the public space additionally hampered logical exploration on poaching. The absence of a logical way to deal with dissect poaching makes a hole among the real world and a viable answer for lessen its suggestions on untamed life preservation. Poaching has additionally been influenced by quick financial improvement in India and the area, which has led to expanded interest of untamed life. Secured regions, made to ration natural life, face tension from poaching and segment development. Financial improvements influence poaching and segment changes and influence preservation. Examining this pattern at the nation and the worldwide level can assist with anticipating future situations and foster viable methodologies to decrease misfortune to biodiversity.

Natural life implies the local wild fauna and vegetation of an area. According to Section 2 of the Wild Life (Protection) Act, 1972, "natural life" incorporates any creature, honey bees, butterflies, scavenger, fish and moths; and sea-going or land vegetation which structures part of any living

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space. India has almost 6.5% of the world's known natural life species, and is one of the mega different nations of the world. Security of backwoods and untamed life bears more noteworthy importance in the current situation as a result of developing strain on woods and the money related worth engaged with the natural life exchange. India is a shipper, exporter and a channel for untamed life that enters the $ 25 billion yearly worldwide exchange. India was one of the underlying individuals from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), accordingly vowing global help to an optimal reason, both in its homegrown and worldwide arrangement on natural life. The worldwide worth of untamed life exchange as given by global requirement organizations is second just to opiates in the unlawful scene. There are different offices endowed with the obligation of against poaching and some of them are Customs, Wildlife Protection Department, Railway Protection Force, Directorate of Revenue Intelligence, and so on The laws focusing on untamed life insurance incorporate, The Wildlife (Protection) Act, 1972 (Last altered in 2006), The Indian Forest Act (1927) and Forest Acts of State Governments, and so forth.

OBJECTIVE OF STUDY

Indian Pangolin is broadly dispersed in India, with the exception of the dry locale, high Himalayas and the North-East. It tends to be found at height up to 2500 m. The species likewise happens in Bangladesh, Pakistan, Nepal and Sri Lanka. These species are dealt chiefly for their scales, which are accepted to treat an assortment of ailments in customary Chinese medication and as an extravagance food in Vietnam and China. In Africa, pangolins are sold as a type of shrubbery meat, for custom or otherworldly purposes, and use in conventional African medication. Pangolins, accepted to be the most dealt creatures worldwide, are generally pursued across India for their meat, skin and scales. The most valued body a piece of the pangolin is its scales, which many accept have restorative properties and can fix illnesses like piles and jaundice. It is being killed for its scales and have been recorded as Endangered in IUCN Red rundown of undermined species. Our central goal is to; a) Generate standard data on nature of Indian Pangolin, which is essential for its protection. b) Spread mindfulness training among neighborhood networks to quit killing of Indian Pangolin. Thus, interest for normal assets is soaring, and the locales uncommonly assorted biological systems, just as its remarkable species, similar to the pangolin, are under danger. Pangolins are known as the watchmen of the backwoods since they shield woodlands from termite obliteration, keeping a decent environment. The essential danger to most pangolin species is unlawful hunting and poaching for nearby use and illegal global exchange. Late gauges dependent on seizure information propose that what might be compared to more than 895,000 pangolins were dealt all around the world somewhere in the range of 2000 to 2019.

ILLICIT UNTAMED LIFE EXCHANGE

Indian pangolin Manis crass Caudata, Endangered Listed as Endangered on the grounds that it is liable to hunting and expanding levels of poaching, basically for its meat and scales, both for neighborhood use and for unlawful global exchange. Accessible proof recommends this exchange is bound for East Asia where scales are utilized in customary drugs. It is associated populaces with this species will fall by essentially half in the following 21 years (age length assessed at seven years) given the critical decreases in Manis pentadactyla and Manis javanica throughout the last decade and the exchange of exchange thoughtfulness regarding other pangolin species following the previous' breakdown.

Natural life exchange is any deal or trade of wild creature and plant assets by individuals. It tends to be in live creatures or their parts, items and subordinates, including plant concentrates and portions of creatures utilized in meds, traveler doodads, skin, wood, fish or other food items.

Indeed, live creatures structure just a little piece of

the exchange. Natural life exchange can be at the nearby town level, local retail and discount levels or global import and fare levels. Natural life exchange is a genuine preservation issue since it negatively affects the practicality of numerous untamed life populaces and is one of the significant dangers to the endurance of vertebrate species. Today, untamed life violations are one of the most productive unlawful exchanges the world. The merchants of untamed life materials comprise the most compelling gathering of natural life guilty parties and they work in profoundly coordinated way. Organizations of such coordinated untamed life lawbreakers have worldwide presence and they make most extreme business acquire from these wrongdoings.

WHY ILLICIT UNTAMED LIFE EXCHANGE AN ISSUE?

Much of the time, unlawful untamed life exchange has prompted over-abuse of the designated species, to where the actual endurance of these species is becoming troublesome. This angle has been acclaimed on account of Tigers, rhinos, elephants, Star Turtles and others. Over reaping for exchange has likewise influenced populaces of numerous freshwater and marine species like otters, freshwater and marine turtles, corals, sharks, fish and other ocean fish. Moreover, unlawful natural life exchange in a roundabout way compromises the occupations of a huge piece of our human populace who are subject to untamed life items from woodland and beach front biomes to support them. These occupants not just rely upon the assets from the wild for food yet additionally for their occupation and medical care. It is consequently essential that these natural life assets are overseen reasonably and moderated by the law. Certain explanations behind upsurge of Illicit Natural life Exchange India

Illegal natural life exchange is driven essentially by the colossal benefits acquired by the dealers. Low hazard and low punishments make the exchange exceptionally rewarding. Unlike other regular wrongdoings, no shame is appended to the guilty parties who perpetrate natural life violations. Wealthy markets in Asia, Europe, USA and the Center east are the power driving the illicit exchange of natural life.

Craze for adornments made of creature body parts (ivory, tiger teeth/bones), utilization of creature body parts or plants in customary medications, keeping the skins or horns or prongs as superficial points of interest, social convictions or even odd convictions are different variables driving the illicit exchange untamed life and their parts and items.

INDIAN PANGOLIN

Indian Pangolin (Manis Crassicaudata) or Thick followed Pangolin is the most pursued creature in India and world's most dealt wild warm blooded animal. The exceptionally jeopardized Indian Pangolin is going to become terminated, just about a 100,000 Pangolins are caught each year in India for unlawful exchange. All through the scope of bears in Asia, a blend of dangers loss of reasonable living space, expanding human struggle, and unlawful natural life exchange is pushing bear populaces towards elimination. However, considers in Asia are showing that unpredictable poaching and unlawful exchange is progressively turning into the primary driver of species eliminations. The Natural life Insurance Society of India (WPSI) efficiently gathers information on poaching and captures of secured species which is examined, sorted and put away in WPSI's data set on untamed life wrongdoing.

In India, the layered warm blooded animals are being poached and dealt outside secured regions even as analysts call for tending to the hole in populace status, dispersion, and biology of these two species in India, notice of a contracting

circulation and populace. India likewise has a pangolin preservation rearing focus that runs after hostage the executives of seized and saved pangolins and their delivery into nature. As indicated by the Global Association for Protection of Nature (IUCN) Pangolin Expert Gathering, poaching for unlawful worldwide exchange live creatures, meat, and scales basically bound for Asia, principally China and Vietnam are the primary dangers to the creatures. Pangolins are recorded under the Show on Worldwide Exchange Imperiled Species. Exchange each of the eight types of pangolins is illicit of the eight known types of the pangolin, one of the world's most dealt creatures, India is home to two pangolin species, the jeopardized Indian pangolin (Manis crassicaudata) and fundamentally imperiled Chinese pangolin (Manis pentadactyla). The creatures have been at the focal point of the discussion encompassing the zoonotic beginning of the novel Covid illness (Corona virus).

SPIKE IN HUNTING FOR EXCHANGE

Along the Konkan coast, SNM sets up camera traps dependent on the direction given by neighborhood local area individuals. On the opposite side of peninsular India, in the northern Eastern Ghats (NEG), a mix of camera traps and meetings with networks living in towns around the Papikonda Public Park in Andhra Pradesh has hurled intriguing bits of knowledge on why pangolins are losing ground. The people group chases pangolins for business (scales for exchange) and individual (meat, scales for making rings) reasons. A little level of pangolin scales is utilized for implied therapeutic purposes (for the fix of heaps and kidney stones) and molded into rings to avoid dark enchantment. "Indian pangolins are known to live in a gathering of conditions; yet we didn't have even the remotest clue where to search for them." We realize pangolins are pursued in this scene, yet methodical data on their event in this area is missing," In adjoining Odisha, salvage records uncover the commitment of living space annihilation to the weakness of the bashful creatures to poaching and socio-financial aspects. Pangolin salvage records (1973 to 2008) kept up with at Nandankanan Organic Park, Bhubaneswar, and shows that Indian pangolins are spread through beach front spaces of Narrows of Bengal to the sloping woodland spaces of Eastern Ghats in Odisha. The Nandankanan zoo has India's just pangolin preservation reproducing focus. Pangolin hunting was for the most part pioneering in northern Eastern Ghats, happening when trackers go over a functioning tunnel. It was in every case deftly chased. Nonetheless, the expanded business worth of the scales has pushed up the stakes fundamentally, and the trackers are continually keeping watch for the species,"

CRAWLING TOWARDS PANGOLIN PRESERVATION

Connections between the worldwide well being emergency and the unlawful double-dealing of untamed life have been at the center of attention since it was proposed that wet business sectors selling natural life, for this situation, pangolins, might have worked with the exchange of Corona virus to people, takes note of the World Untamed life Wrongdoing Report 2020. With the pandemic, while many accept that Refers to ought to be altered to incorporate general wellbeing and creature wellbeing measures into the Show's dynamic cycles, others have squeezed for a more extensive prohibition on natural life exchange and increasing 'One Wellbeing' approach.

Assessments of the number of pangolins have been unlawfully exchanged late years are hard to compute given that seizures address just a little part of the creatures killed. In any case, the size of the unlawful exchange dependent on seizure records recommends that wild sourcing is unreasonable. Endeavors to cultivate pangolins for business purposes have fizzled, and the deficiency of millions of wild pangolins to illegal business sectors can't be maintained.

Individual seizures made lately have been included the sizes of a huge number of pangolins, characteristic of profoundly coordinated criminal activities, as per the World Natural life Wrongdoing Report.

Statement: "In India, we have a thought that pangolins are being poached and dealt generally outside ensured regions. The vast majority of their environment is outside ensured regions," said Agni Mitra, provincial delegate chief, Wildlife Crime Control Bureau (East).

STATEMENT: Nearly 6000 pangolins were poached in India somewhere in the range of 2009 and 2017, regardless of a boycott, as indicated by a 2018 TRAFFIC India report. Saket Badola, Head of TRAFFIC India said chronicled records enlighten

us regarding the pangolin conveyance in India. "As of late, seizure information likewise demonstrates the dispersion, yet we don't have the foggiest idea about their populace gauges or pattern. What we need to address is the hole in populace elements examination and scientists in India are turning.

CONCLUSION

However wild creatures and plants are the survivors of any untamed life offenses from the outset place, it has a pouring down impact on the biological system of specific locale. It is obvious from the established directions that untamed life is our irreplaceable asset. Man creature debate circumstances require earnest improvement to keep away from these turning into a wellspring of responding activity against the creatures being referred to by the influenced individuals, and later focus of unlawful exchange creature parts and items.

In India, in the same way as other different nations, the issue isn't of the laws however that these might be ineffectively conveyed and wretched and applied. Frequently, positive endeavors to address untamed life exchange concerns are undermined by absence of political drive and administration disappointments. Without political sponsorship, disincentives for over-abuse and illicit exchange, like punishments for legitimate requirements, are really regularly powerless. As indicated by WWF India, there is a dire necessity for information and activity to bring the lawful natural life exchange inside supportable levels and stop all unlawful exchange that has jeopardized and surprisingly pushed numerous species towards termination.

Regardless of administrative security, illicit abuse and exchange pangolin body parts keeps on happening in India, which is having an apparently harmful impact on pangolin populaces their existing administrative measures subsequently, the research suggest that a progression of extra measures are required to assuage manipulative tension on pangolins in India and to guarantee the protection of the species. These incorporate proceeding to bring issues to light of the degree of the exchange and the preservation issue of pangolins with therapeutic clients and experts, ancestral networks and individuals from the general population, to produce support for and catalyze protection activity. In any case, they likewise remember critically required exploration for pangolin populaces in India, on flow off take levels both for immoderate use locally just as for exchange, nearby and public level interest for pangolin subsidiaries, and investigation into the means through which neighborhood and ancestral networks can become accomplices and stewards in pangolin preservation in India. same time, drives are expected to diminish worldwide interest for pangolin subsidiaries, which is at present being met partially by pangolin body parts from India, and on which preservation activity has begun which incorporates this load of components that the shifty danger to pangolins in India can be decreased, and their drawn out protection got.

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Energy Problems in Developing Countries

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INTRODUCTION

Energy problem is a global problem facing by developing countries. Energy consumption in developing world will fall into one of the two categories. Non-renewable and renewable energy. Those who live in urban areas, will access the non-renewable energy like petroleum products, natural gas, and electricity, while those who live in rural areas, rely on renewable energy like crop waste, wood, animal dung, etc. The world's energy consumption is about 13 TWY which is the 55% of the primary energy. The different sources of the global consumption of 13 TWY are biomass (10%), nuclear (6%), hydro (7%), fossil (77% of which 25% from natural gas, 45% from oil, 30% from coal). Energy problems in developing countries is rising with the global population, rising industrialization, used energy services or e-products like electric gas stove, smartphones, laptops, electric iron, microwaves, mixer, etc on daily basis to improve living standards and economic growth. The purpose of this report is to examine which energy industry and technology is providing better energy services in developing countries that minimize the negative environmental impacts, and cost-effective also.

Historic Energy Trends: Energy consumption ways have changed as new energy sources have been developed because of global environmental problem. Wood (largest source of biomass energy) used as primarily at the mid of 1800. Coal, petroleum products, natural gas, and water mills are used in the l9th century. In the mid of 20th century, coal used as the primary energy source for the electricity generation, and after sometimes a new type of energy has emerged i.e. nuclear energy used to generate electricity. These energy trends leads to devastating impact on environment. Major environmental problems are forest degradation, deforestation, loss of biodiversity, air pollution, soil degradation, loss of resilience in ecosystems, resource depletion (like water, mineral, rocks, sand, etc.), etc. To protect the environment, innovative technologies with renewable energy sources like biomass, solar energy, and wind energy are used.

ENERGY GLOBAL CHALLENEG

a. The Energy Challenge: Global consumption of commercial sources of energy or power like coal, fuels has increased steadily over the last four decades and continuously increasing as population increased. Energy challenges recently faced by different countries are:

i. The world's 2nd largest coal producer and 3rd largest importer of coal India, facing power problem after China. On Oct 7th, the Power Ministry of India said that 135 coal-fired thermal power plants of country had left an average of 4 days of coal, which results Indian Government is forced to import more coal which can cause to rise the electricity price. If shortage persists still, power cuts could become common throughout the country.

ii. According to Reuters news, 66% of gas stations in the UK triggered fuel crisis due to the shortage of truck drivers to deliver the fuel to forecourts or gas stations. Due to the shortage, price of petrol and diesel shot up to Rs. 136/L and Rs. 139/L respectively. The major cause behind the shortage of truck drivers is Brexit, another reason is trucking, a very gruelling job, where long hours are accompanied with low pay. Trucking problem is not just in the UK but all over the Europe as well. In India, 4 out of every 10 truck site idle as there aren't enough drivers for them.

iii. Hence, not only developing countries but the developed countries also concerned to increase power generation through renewable energy sources that are eco-friendly and low

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budget as well.

b. Technology Challenge: Human's hunger for energy reached at unprecedented levels. China, United States of America, India, Russia, and Japan are the world's top 5 largest consumer of electricity. More than half of energy comes from fossil fuels, which has devastating impact on environment. The world's scientist agree that we're moving towards disaster that can only stopped by weaning ourselves habits of using fossil fuels. Hence everyone is talking about green energy and focus on renewable energy technologies like solar, wind, biomass, etc.

i. China, United States, India, Japan, and Germany are the world's top 5 countries with the largest installed solar power plant (renewable energy) while China, United States, Germany, India and Spain are the top 5 countries with the highest wind energy capacity. Wind and solar energy technology benefits less water usage, mitigates air pollution, low consumption of fossil fuels, reduce carbon emission, slow down climate change, etc.

ii. Technologies like capacitors or flywheels stores energy for a few minutes or hours. Electricity grid is the only technology that tuned with wind or solar energy to store the produced electricity. Innovative technology for grid modernization is required for the improvements in renewable energy resources, storage, monitoring, protection and control and accompanying software tools. to generate environment friendly sources

iii. Biomass technology like biogas production, liquid fuels, and gasification to generate electricity could lead to reduction in air pollution, greenhouse gas emission reduction, reduction in land degradation and land reclamation.

iv. Indian Government started work on a project for electricity generation from Cow Dung, as eco-friendly source of renewable energy. The cow dung procured form the farmers under the Godhan Nyay Yojna would be used for electricity production in India.

2. Energy Industries in Developing Countries

a. Fossil Fuel Industry: Fossil Fuels is a fuel formed by natural process where buried dead organisms decomposed from millions of years. All fossil fuels burned into the air to produce energy or heat which is used in power stations, power engines, to drive generators to supply electricity. Environmental impact of fossil fuel industry are: 1) The largest amount of Carbon dioxide (CO2) generated during fossil fuel combustion to the Earth's atmosphere which is the main cause of Global Warming. Energy stored between the bond of Hydrogen and Carbon atoms. By burning the atoms, in the presence of oxygen, bonds are broken and stored energy is converted into heat, and forming CO2 in the process. 2) Crude oil, a liquid composed mainly of hydrogen and carbon, used for a variety of petroleum products including gasoline, diesel, heating oil, etc. When it buried a large amount of carbon is emitted in the environment. 3) Underground coal mining is the threat to the health and safety for the coal miners as many coal miners injured and killed on the job site accidents each year. According to a Harvard University study, coal mining leads to chronic health diseases, lung, cardiovascular and kidney diseases which was responsible for the death of coal miners. 4) Natural gas leaks from transmission and distribution pipelines are the significant source of methane emission, which is very dangerous for house and offices. 5) Burning of fossil fuels emits a number of air pollutants like sulfur dioxide (SO2), nitrogen oxides (NO2), acid rain, SPM, mercury, lead, etc. which is harmful for environment and human both. 6) Power plants that return the water to nearby rivers, lakes or ocean can harm the aquatic ecosystem. 7) Fossil fuel waste contains a large amount of harmful materials like coal ash, toxic heavy metals and chemicals, oil and gas waste water, etc which is very hazardous for the human, aquatic and marine lives.

b. Hydropower Industry: Hydropower also known as "Electric Power" or "Water Power" which uses the falling or fast-running water to generate electricity. Environmental impact of Hydropower Industry are: 1) Water quality is declined because of hydropower. 2) There is not limit for hydroelectric generation as finite amount of water is available on the Earth, so it's a serious problem as water is decreasing day by day. 3) Large hydropower plants

require large dam construction for filing the reservoirs that requires clearing of lands and changing river flows which results soil degradation, destroys forests, agriculture land, scenic lands, wildlife habitat, etc. 4) Dam disrupts the natural flow of rivers that erode the riverbeds, harm aquatic ecosystems, alter flood patterns, and interrupt spawning and migration of marine lives. 5) Vegetation should require to be cleared from reservoir area before flooding, as rotting organic matter releases two potent greenhouse gases CO2 and methane.

c. Nuclear Power Industry: Nuclear power uses the nuclear reactions to produce electricity. It can be obtained from nuclear fission, nuclear decay and nuclear fusion reactions. Environmental impact of nuclear power industry are: 1) Radioactive waste from nuclear power plant remain active for thousands of year which is a huge concern. 2) Cooling water system are used in nuclear power plants for overheating. For cooling system, water pulls from ocean or rivers. So fish accidently captured in the cooling system and killed. 3) Water is returned to the ocean or river after cooling the power plant which is at least 25 degree warmer than that original water so it kills the marine and aquatic lives. 4) If any accident occurs in nuclear power plant, high level of radiation spreads in the surroundings which is very harmful for ecology. 5) Terrorism threat for nuclear power plants is also a major concern.

d. Renewable Energy Industry: It includes solar energy, biomass energy, wind energy, and geothermal energy. When compared with fossil fuels, obviously renewable energy industry leads to less pollution.

i. Solar Energy: Energy from the sun which is converted into thermal or electric energy. Solar energy systems are not completely eco-friendly systems as some toxic chemicals and materials are used for photovoltaic (PV) cells that converts sunlight into electricity. Some thermal systems use hazardous fluids to transfer heat. Leaks of these materials could be harmful to the environment. Other environmental impact of solar energy are: 1) Large solar plants affect the environment near their location as the land required for the construction and placement of power plants may have long term negative impact on the habitats of native plants and animals. 2) Solar power tower creates the beam of concentrated sunlight that can kill the birds and insects that fly into the beam. 3) Some solar plants use thermal system for clearing solar collectors and concentrators, or for cooling turbine generators that affect the aquatic and marine lives. Solution: 1) Future design trends of PV systems focus on improved design, sustainability, and recycling. 2) Incentives and research to close the gap can offer a great platform for future legislation.

ii. Biomass Energy: It generated from living organisms or once-living organisms such as plants and animals. Wood, plants like corn and soya, waste are the most common biomass energy resources. Other biomass materials are modern grains, food crops, grassy and woody plants, organic residues, organic component of municipal and industrial wastes, etc. Fumes from landfills, also used as biomass energy. Biomass energy used as biofuel, biopower and bio-products. Biofuel is an alternate of petrol or diesel. Biopower converts biomass fuels into heat and electricity through burning, bacterial decay or conversion to gas/liquid fuel. Bio-products includes other uses of biomass energy like it can be used to provide kerosene (cooking oil), remove paint, clean oil spills and grease, etc. Environmental impact of biofuels are: 1) Burning biomass in a solid, liquid or gaseous state can emit harmful pollutants, SPM, a potent GHSs like carbon mono oxide (CO & CO2), nitrogen oxide (NO2), hydrocarbons into the airx. 2) A lot of water is used for irrigation to grow trees and other crops for biomass energy plants for a large scale which impact the aquatic and marine lives, drought conditions, etc. 3) Biomass energy production impact the water quality and quantity both through the consumption of bioenergy plants and conversion of land use. A biomass energy plan, corn requires more water as compared to other crops like wheat or soybean. According to a Journal of the Asia Oceanic Geoscience Society (AOGS), it's estimated that a typical corn ethanol plant with a production capacity of 100 million gal/year uses as much water as a community of 5000 people. 4) Deforestation leads to soil erosion and land degradation leads to loss of soil nutrients, are the common

problem in biomass energy production as erosion diminish the soil quality that affect the productivity of natural and agriculture ecosystem. In the production of biomass energy, soil erosion occurred in different ways – the corn acreage expansion, land use change, and residue removal. 5) It also impact the biodiversity. Land use conversion is most common factor that affect the biological abundance through the direct change of land.

iii. Wind Energy: It uses wind to provide mechanical power through wind turbines to generate electricity. Environmental impacts of wind energy are: 1) When the blades of wind turbine rotate at high speed, air pressure around the blades shift, collision between local wildlife and wind turbines cause local birds and bats death. 2) Noise and vibration emission from wind turbines is also a problem for the local people living near wind turbines. Noise and vibration arises from wind turbines because of the rotational movement of the gearbox and electrical generator, and another reason of noise caused by interaction of wind and wind turbines blades as they rotate. 3) Sometimes wind turbines caught fire and leaked lubiracationg fluids, but it's rare.

iv. Geothermal Energy: It's the heat in the earth crust. It can be used for heating and cooling purposes or be harnessed to produce electricity. Environmental impact of geothermal energy are: 1) Earthquakes arise due to the geothermal power plant as it's located near the faulty zones, and, drilling deep into the earth and removing water and steam also trigger small earthquakes sometimes. 2) Geothermal power plants have impacts on both water quality and consumption as water is used by geothermal plants for cooling and reinjection. Geothermal plants need between 1700 and 4000 gallons of water per megawatt hour, depends on the cooling technology used. 3) In geothermal power plant, air emission is divided into 2 ways – open loop systems and close loop systems. In close loop systems, air emission is minimum as gaseous are injected back into the ground after giving up their heat. In open loop systems, emit a potent GHS's ammonia, methane, carbon di oxide, hydrogen sulphide, which has a "rotten egg" smell.

3. Energy Services in Developing Countries

a. Residential Sector: According to U.S. Energy Information Administration, more than half of energy use in homes for lighting, refrigeration, fan, mixers, and air conditioning. A number of factors affect the amount of energy used by an individual households includes climate and geographic location, type of home, number of household members, number, type, and efficiency of energy consuming devices used in home and the amount of time they're used. Several ways of energy consumption services are

i. Electricity: Used for all types of energy products like laptop, smartphones, mixers, lighting, ac, cloth iron, steam iron, etc.

ii. Natural gas: Used for cooking, space and water heating, etc.

iii. Heating oil: Used for space and water heating, clothes drying, etc.

iv. LPG: Used for cooking, space or water heating, etc.

v. Solar Energy: Used for electricity generation, solar heating for swimming pool, solar water heater, solar house heating, charging batteries with solar power, cooking, etc.

vi. Wind Energy: Used for electricity generation, charging batteries, etc.

vii. Geothermal Energy: Used for space cooling, space and water heating.

viii. Kerosene: Used for space heating.

b. Commercial Sector: According to U.S. Energy Information Administration, Electricity and Natural gas are the dominant energy sources in commercial buildings. China is the largest commercial energy consumer.

i. Lighting is the largest single use of electricity.

ii. Office equipment like computers, servers, laptops, printers etc also contributed to increase the electricity consumption.

iii. Other electric products like electric cattle, microwaves, charging smartphones, air conditioner, heater, refrigerators, water coolers, televsion, etc also increase the electricity consumption.

c. Industrial Sector: Industrial sector use energy

for production, manufacturing and for lighting. According to the US Energy Information administration, Industrial production use half of the global energy and expected to grow new future as population and increases. World industrial sector representing different industries includes:

i. Energy Intensive Manufacturing:

- Food: Food, beverage and tobacco product manufacturing.
- Pulp and paper: Paper manufacturing and printing related activities.
- Basic chemicals: Inorganic chemicals, organic chemicals (e.g., ethylene propylene), resins, and agricultural chemicals; includes chemical feedstocks.
- Refining: Petroleum refineries and coal products manufacturing, including coal and natural gas used as feedstocks
- Iron and steel: Iron and steel manufacturing, including coke ovens
- Nonferrous metals: Primarily aluminium and other nonferrous metals, such as copper, zinc, and tin
- Non-metallic minerals: Primarily cement and other non-metallic minerals, such as glass, lime, gypsum, and clay products

ii. Electronic Manufacturing Industry: Mobile, television, smartphones, smartwatches, circuit boards, laptops, desktops, electronic gadgets, etc.

iii. Nonmanufacturing:

- Agriculture, forestry, fishing: Agriculture, forestry, and fishing
- Mining: Coal mining, oil and natural gas extraction, and mining of metallic and nonmetallic minerals
- Construction: Construction of buildings (residential and commercial), heavy and civil engineering construction, industrial construction, and specialty trade contractors

d. Agriculture Sector: Increasing use of agrochemicals like synthetic fertilizers and pesticides, higher production cost, and deterioration of ecosystem health have advocated to change the traditional method of agriculture.

i. In the open areas, drying products like meat, vegetables, fruit were left to dry, cause highest loss of perishables. After harvest, using solar thermal energy, provides a longer storage time. Farmers can also transport them.

ii. Farmers can also use solar energy for heating and cooling agriculture food products.

iii. Farmers can also used solar energy for agriculture irrigation and small scale farming as the solar water system have built in inverter and energy storage for water supply every 24 hours.

iv. Agriculture industry use biomass energy to produce heat, electricity and transportation fuel.

e. Transportation Sector: Petroleum is the main source of energy for transportation. Petroleum products made from crude oil and from natural gas processing, including gasoline, distillate fuels (mostly diesel fuel), jet fuel, residual fuel oil, and propane. In transportation sector, energy services used in several ways. These are:

i. Biofuels: Ethanol, Biofuels added to gasoline and diesel fuel.

ii. Natural gas: Used in cars, buses, trucks, and ships. Natural gas is also used to operate compressors to move natural gas in pipelines.

iii. Propane (a hydrocarbon gas liquid): Used in cars, buses, and trucks.

iv. Gasoline: Used in cars, motorcycles, light trucks, and boats. Aviation gasoline is used in many types of airplanes.

v. Distillate fuels: Used mainly by trucks, buses, and trains and in boats and ships.

vi. Jet fuel: Used in jet airplanes and some types of helicopters.

vii. Residual fuel oil is used in ships.

4. Energy and Environment in Developing Countries

a. Causes of Environmental Degradation: Major causes of environmental degradation are

industrialization, modern urbanization, transportation, over-population, deforestation, etc. There are various reasons for environmental degradation. These are:

i. Population growth impacts on the environment directly through the use of natural resources, energy consumption, and production of waste that cause loss of biodiversity, air, water and land pollution, etc.

ii. Poverty plays a major role for environmental pollution as either it fuel demand for cooking or livelihood for their survival as they directly depend on natural assets. Poverty can be seen as population growth as increasing demand led to higher cost of everything.

iii. New construction, urbanization, industrialization, energy power plants, and agriculture caused deforestation result soil erosion, increased greenhouse gases in the atmosphere, flooding, climate change, natural disasters, etc.

iv. When livestock like sheep, cows, pigs, cattle gazed at large scale, producing a greenhouse gas, methane and carbon, highest contributor to global warming. Australia is a big contributor for livestock farming.

v. Urbanization is occurring at quicker rate, as poor families are moving to town because of lack of opportunities for employment in villages, which affects the transportation, water supply, food supply, water supply, sewage, municipal waste, etc. The outcome is water, air and soil quality decreases which affect the human health and ecology.

b. Environmental Impacts

i. Ozone layer protects the earth from harmful ultraviolet rays. Ozone layer depletion caused because of production and emission of CFCs chlorofluorocarbans. Other substances are hydro chlorofluorocarbons (HCFCs) and volatile organic compounds (VOCs). These substances found in vehicular emissions, refrigerators, and industrial process.

ii. Global warming caused by burning fossil fuels (coal, natural gas, etc.) produced carbon dioxide and nitrous oxide, deforestation and tree clearing, increasing livestock farming, etc.

iii. Biodiversity maintain the balance of ecosystem in terms of restoring nutrients, save water, protect climate, combating pollution, etc. Main causes of the loss of biodiversity are deforestation, electricity generation through different energy resources, overexploitation of the natural environment, global warming, population growth, environmental pollution, destruction of habitats, etc.

iv. Environmental degradation impact on human health can range from death caused by cancer, malaria, diarrhoea, every minute in developing countries. Other disease are asthma, typhoid, lead-poisoning (life –threatening diseases like serious organ damage, especially to the kidneys and nervous systems), polio, trachoma (eye infection), amoebiasis (infecting the large intestine or kidney), etc.

v. E-Waste contains very harmful toxic chemicals and substances and it's especially dangerous during the summer because when electronic waste gets heated, toxic chemicals are released into the air and further harm the climate. Specially lead, when released into the environment, damage the human kidneys, vascular system, central and peripheral nervous system, etc.

c. SPM (Suspended Particular Matter) in Cities: For determining air quality, we must determine the level and pollutant type. Rain and snow precipitation, various pollutants present or released by vehicle emissions, burning of fossil fuels, generating power from coal based thermal plants, commercial industries, tobacco, and smoking of particles are some important factors that generate SPM which worsen the climate conditions.

As we know there were various particles present into the air either they are liquid or solid or small which consists of nitrogen, sulphur, carbon and other malicious particles. These particles adversely impact the health conditions – resulting into several health issues like – adverse impact to the lungs, breathing system results in problems like Asthma, Respiratory tract, Chronic disease, Pneumonia, Mental retardation etc.

Pollutants level generally varies from one specific point or place to another within the time limit 60 minutes. To calculate SPM (Suspended Particular Matter) in cities we must compare

the data as per provided rules and regulations and as per particular slandered for given cities. Suspended Particular Matter ranges from PM_(2·5) to PM_10 . PM value less than from PM_(2·5) can be more dangerous for Human. It adversely impact the breathing capacity of human effecting heart and lungs badly.

Now discussing about air quality and pollutant in Indian Metro Cites. It is deteriorating day by day with urgent priority basis. On an average every 1 person in Delhi, India, dies due to high suspended particle in every 60 minutes. Government needs to look into this matter, as there were no designated programs to calculate or to minimize it as citizens of Delhi every year faced this worsen condition.

Also as a person one needs to minimize the use of high emission vehicle instead of it one can use carpool system, even odd system – applied by Delhi government earlier, walking, cycling etc.

Government Policy and Actions: Some developing countries have shown a significant commitment for protecting the environment. India's green energy achievements in the vision of Hon'ble PM Narendra Modi are:

d. India: Indian Railways, the fourth largest railway in the world, covered the rooftop of more than 1000 stations with solar panels and continuously installing solar panels on rooftops of various station and buildings. Indian Railways pursued environment friendly and energy saving initiatives like using LED lights and high efficiency devices into the office buildings. Indian railways also committed to become an organization that emits carbon 'net-zero' by 2030.

e. Japan: To reduce CO2 emissions via transportation, Japan is combining railways with other modes as railway could not fulfil the requirements of every customer and railway mode generally has a lower environmental impact than other transportation modes. Japan Railways also launched battery powered shinkansen (bullet train) to save environment. Japan Railways branch offices and community residents have been planting trees near tracks and stations as a part of Railway Line Forestation Programme since 1992. 260,000 trees are planted by 38,000 people.

f. India: Organic farming is the best alternative to avoid harmful effects of chemical farming. According to Wikipedia, India is the world's 2nd largest organic farming country. Union Ministry of Agriculture and Farmer Welfare estimated an area about 78 million hectares is using for organic farming in India.

g. Australia: To protect environment, Australian Government make some laws in July 2020 like new farm activities like land cleaning may require approval from the federal environment minister under national environment law and also supporting organic farming as it grow during 2015-2020.

h. Indian railway launched first solar-powered diesel electrical multiple unit (DEMU) train on 14 July 2017, under 'Make in India' initiative. A total of 16 solar panels fitted in six coaches, each produced 300 Wp. It's the first time solar panels used as grid in the world. Solar power generates approx. 17 units of power in a day for the lighting system in the coach. According to E-paper of The Economic Times, Indian railways will be able to save approx. RS 672 crore, 1.2 lakh kilo litre of diesel, and reduced 2.7 lakh tonnes of carbon dioxide emission every year.

CONCLUSION

The situation in developing countries is more difficult than developed countries as they have to focus on economic growth, new energy trends with environmental protection. According to World Bank estimate, between 1995 through 2010, India has fast progress in terms of environmental protection in the world. Still, India has a long way to meet with the environmental quality similar to the developed countries.

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Cloud Computing Technology and its adoption in law firms

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Cloud computing is the practice of locating computing resources on the Internet in such a way that they may be very dynamic and scalable. This type of distributed computing environment may easily scale up to manage more system traffic or take on new duties. As a result, cloud computing allows for a great deal of freedom in processing decisions and on a worldwide scale. The development of the cloud has thrown traditional legal paradigms into disarray. The existing limitations of information privacy regulation in the context of the cloud are examined in this article. It also offers normative suggestions for making the cloud a fundamental feature of the growing Internet. These recommendations are based on robust and effective information privacy protections that are adaptable to technological developments. This article looks at three aspects of personal data processing that have changed as a result of the cloud. The nature of information processing in businesses is the first area of change. Data transfers are becoming worldwide in nature for many companies. They are no longer point-to-point transactions within a single country. The legal divide between national and foreign data processing has become less significant as a result of this evolution. Computing activities currently vary by country, based on load capacity, time of day, and a variety of other considerations. These developments in the volume and character of multinational data processing do not mesh well with the jurisdictional notions of EU law. The multi-directional character of current data flows, which occur today as a networked set of activities designed to provide a corporate result, is a second legal challenge. Established notions of privacy legislation, such as the definition of "personal information" and the meaning of "automated processing," have become difficult as a result of this evolution. These notions are also not harmonized internationally. As a result, officials from the European Union and the United States may disagree on whether particular cloud activities violate privacy laws (International Law) and if these should be adopted by the legal firms and corporations.

There could be various factors such as size and nature of the firm, depending on which the firms could decide upon the adoption of cloud over traditional methods already existing. Finally, a transition to a process-oriented management strategy is being implemented. Cloud-based technology, whether software or hardware, no longer requires users to own it.

This paper basically, focuses on the legal aspects of cloud computing which are beneficial for legal firms, in accordance with the laws and the adoption of cloud computing technology by the law firms.

Keywords: Cloud Computing, International law, legal aspects, law firms

INTRODUCTION

Cloud computing refers to IT services and resources such as infrastructure, platforms, and software that are delivered to consumers through the internet rather than through on-site IT hardware and software installations. Cloud computing allows businesses to save money, share costs with other customers on the same cloud, and increase productivity while their IT infrastructure is upgraded and updated on a regular basis by the cloud computing provider. Despite these advantages, cloud computing must be carefully assessed in light of the dangers it entails, including security, performance, service availability, contractual remedies, and supplier stability, to name a few. The fundamental distinction between traditional IT outsourcing and cloud computing in terms of international law is where the data sits or is processed, as data can be disseminated throughout and stored in numerous data centers across the world. Furthermore, utilizing a cloud platform may result in duplicate copies of such data being stored in several places. Even if a "private cloud" is run by a single customer, this is true. In fact, corporate customers should consider that cloud computing is vulnerable to damage or disruption as a result of earthquakes, terrorist attacks, floods, fires, power outages, telecommunications outages, computer viruses, denial of service attacks, or other attempts to harm the relevant systems. Data centers may be positioned in places prone to severe earthquakes, or they may be targeted for break-ins, sabotage, and intentional acts of vandalism, as well as potential outages if the facilities' operators are experiencing financial difficulties. Above all, systems aren't truly redundant, and disaster recovery plans can't account for every contingency.

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Furthermore, cloud computing goods and services are highly technological and complicated, with the potential for faults or vulnerabilities. Any flaws or vulnerabilities in such products or services, as well as damage to or failure of such systems, could cause service interruptions, lowering revenues and profits while also tarnishing the business brand. Finally, internet, technology, and media businesses control a vast number of patents, copyrights, trademarks, and trade secrets, and they routinely engage in litigation over claims of infringement or other intellectual property rights violations involving the cloud.

In view of the foregoing, there are a number of legal considerations that should be carefully evaluated as corporate customers contemplate cloud computing as an IT outsourcing strategy. From an international law standpoint, the implications of outsourced data management, contract terms and conditions, intellectual property rights, and sufficient insurance coverage are among the essential factors to be addressed. As a result, conducting due diligence on the proposed cloud vendor is an important risk reduction step.

Moving to the cloud allows for secure, remote access as well as more reliable, efficient, and collaborative workflows all at a lower cost. Cloud-based legal software is also easier to set up and use than on-premise legal software. Despite this, many law firms have yet to embrace cloud-based solutions. Cloud computing, on the other hand, will become nearly ubiquitous among legal firms of all sizes in the coming years. Firms who adopt cloud-based legal technology first will gain a competitive advantage; this will become increasingly significant as the practice of law shifts to a modern approach that prioritizes efficiency, convenience, and client-friendly procedures.

Depending on the size of their firms and the nature of their activities, lawyers use the cloud in a variety of ways. Storage/backup (55 percent), disaster recovery (50 percent), email (35 percent), document management (29 percent), and case management were the top five uses of the cloud among law firms according to the 2013 ILTA report (18 percent).

In addition to these back-end office operations, solo and small businesses are more likely to use forward-facing cloud applications to engage directly with clients. Client portals and virtual law offices, as well as online billing and scheduling systems, are examples. Cloud-based solutions like e-discovery platforms during litigation and virtual data rooms for transactions and deal-making are used by both large and small law firms to assist the practice of law. Hosted spam filtering, mobile device management (MDM), and hosted data centers are some of the other cloud options that are growing more popular.

The following main topics, among others, will be addressed like location, Security and Performance, Legislation and Regulatory, Intellectual Property, Data Retention and Insurance. Location is considered where the data are at any given moment, and which law regulates the contract and the resolution of future conflicts; the customer may or may not be able to control this issue through contract, as applicable law in some jurisdictions can restrict the adoption of relevant contractual provisions. Security and Performance is applicable to verify what happens if the data center goes down due to a "force majeure" event, the Internet goes down, or the cloud is hacked, Backup, data restoration, disaster recovery, security, and service levels are all applicable. How might these risks be dispersed through contracts. Legislation and Regulatory including privacy are imperative but each jurisdiction has its own set of standards for information pertaining to defense, health, and financial services, all of which have an impact on cloud computing. Export or trade restrictions, as well as stringent regulatory provisions and limits on the movement of certain types of data across borders, may have an impact on where data in the cloud may be stored and who can store it, as well as the transfer of data and applications to and from the cloud. Trade secrets and attorney-client privileged information must be protected by suitable non-disclosure arrangements, and IP rights provided to customers and IP claims against vendors must be correctly analyzed. Therefore, Intellectual Property rights are important. There are a variety of legal and tax reasons in each area that compel corporate clients to keep data for longer periods of time than a cloud vendor is willing to do. This is called Data Retention. Moreover, Insurance related issues will be taken into context as lot of personal information of individuals will be reviewed and therefore legal issues may arise.

LITERATURE REVIEW

According to Christopher Millard and W Kuan Hon, Cloud computing is a method of offering

computer resources as a utility service across a network, most commonly the Internet, that is scalable up and down based on customer needs. In Cloud Computing, there are three service categories: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Furthermore, Cloud Computing deployment options can be classified as Private cloud, Community cloud, Public cloud, or Hybrid cloud. Data processing, storage, networking, and other connectivity services are the most common uses for IaaS. This can be applied to several regulations dealing to data location, data security, and personal data processing by the government by the exact data processing, storage, and transmission arrangements During active processing and deletion procedures, in terms of data placement, security, and data storage on hard drive or memory. As a result, IaaS provides consumers with greater control and flexibility, subject to any technological or contractual limitations imposed by the provider. These are critical considerations in terms of liability, such as infringement of intellectual property rights and Data Protection Law compliance. PaaS is a greater level of abstraction than IaaS, which requires customers to manage their own virtual computing resources. PaaS is an integrated computer infrastructure and programming/hosting platform that often includes database and web server services. PaaS will provide less flexibility and control than IaaS. PaaS cloud platforms can be utilised as provider-hosted services or as part of a user's private Cloud Computing infrastructure. Finally, SaaS is a step up from PaaS in terms of abstraction. SaaS services can even serve numerous users with a single running application. The cloud supply chain is intricate. Hardware and/or software components from several manufacturers or providers may be combined in a cloud service. The cloud services themselves can be tiered or mixed. Cloud computing frequently entails the usage of multiple 'layers' of services, which may or may not be transparent to users. The classification of a service is determined by which levels and actors are taken into account. The utilisation of the cloud is growing more advanced. Customers are rapidly integrating diverse cloud applications and support services with one other and with older internal systems, as opposed to traditional IT, which allows enterprises to install and operate different applications. To conclude, multiple components may be engaged in a single cloud service, with various deployment strategies and tiers, as well as complex cloud supply chains and contractual agreements. [1]

According to Fa – Chang Cheng and Wen – Hsing Lai, the major goal of this article is to focus on the topic of maintaining information privacy using cloud computing technology that has recently been developed. The characteristics of cloud computing technology will be discussed first in this article. The influence of technology will next be explored in terms of the disparities in legal protection of information privacy on the Internet between different jurisdictions. The impact of such technology will be explored in terms of the legal protection of personal information on the Internet in various jurisdictions. As defined in Buyya "A Cloud is a type of parallel and distributed system consisting of a collection of inter-connected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resource based on service level agreements established through negotiation between the service provider and consumers." Unauthorized copying, which has plagued software developers for years, is no longer a problem for cloud computing service providers. Because the computation takes place on the servers of the providers, copying or reverse engineering will be extremely difficult. As a result, intellectual property protection is simplified. Furthermore, cloud computing service providers can be certain that their customers are using the most recent version of their software at all times. Finally, they can utilise sophisticated data mining algorithms based on consumer data to present clients with highly targeted advertising. Customers are more interested in cost savings. Consumers of computing services pay service providers when they use their services. They don't have to spend a lot of money up front to buy computers with the processing power and storage capacity to meet peak demand, which lowers the barrier to entry for new businesses. Cloud computing's benefits can also be downsides. Despite the fact that cloud providers can afford to hire security experts and install anti-virus software, the facts of remote access, virtualization, platform sharing, border crossing, lack of data control, and massive use of third-party services and infrastructures all make security and privacy a major concern. Although the newly developed cloud computing technology may have altered the rights of both businesses and individuals, the authors' intention is not to explore the protection

of legal rights pertaining to businesses, such as unfair competition, trade secret protection, and so on. With this in mind, the purpose of this paper is to address the critical issue of regulating information privacy protection on the Internet in the context of the recently emerging cloud computing technology. This paper will first introduce the current status of information privacy protection in cyberspace in the United States and the European Community, and then discuss the potential problems for these two legal approaches when attempting to regulate activities based on the newly developed cloud computing technology. It is fair to say that several laws exist in the United States that can be used to protect information privacy in cyberspace. The purpose of this study is not to go into great depth on specific laws. This legislative phenomenon implies that different types of information or entities are regarded differently when it comes to information privacy. It also demonstrates that different laws may control distinct aspects of information privacy at the same time. The impact of technological advancements on the legal infrastructure must frequently be considered. Occasionally, the potential influence will result in a new legal challenge. It can sometimes draw attention to a pre-existing legal concern. The latter problem is the protection of information privacy as cloud computing technology develops. The goal of this paper is to analyse the optimal scenario from two perspectives: substantive legislation and accountability practise, in which the legal infrastructure can respond to such developments in the area of preserving information privacy in cyberspace. [2]

According to CDW, Law firm adoption of cloud computing is growing. In fact, a third of lawyers surveyed this year by the American Bar Association (ABA) reported using cloud-based hosted solutions at them practices. Research shows that when it comes to cloud computing, law firms are not that far behind other industries. And by all indications, this penetration of the cloud into the legal market will accelerate over the next few years. Cloud-based solutions like e-discovery platforms during litigation and virtual data rooms for transactions and deal-making are used by both large and small law firms to assist the practise of law. Hosted spam filtering, mobile device management (MDM), and hosted data centres are some of the other cloud options that are growing more popular. Big firms increasingly rely on cloud-based infrastructure to ensure that all team members can function seamlessly, wherever they are. Pressure on lawyers to drive down costs also have led to the rise of virtual law firms those that comprise networks of experienced lawyers who work largely from client sites or from their own space and interact with other virtual firm members online. As the integration of mobile devices into law practices accelerates, the cloud serves a critical role in enabling lawyers to access files and sync documents between multiple computing platforms. Likewise, cloud technologies are key to storing the Big Data collected by large firms. For solo and small firms, third-party cloud packages provide a cost-effective way to gather and analyse marketing and revenue data capabilities that would be too expensive to develop in-house. In addition, firms that operate a private cloud remain responsible for ongoing monitoring and security to ensure the protection of sensitive client data. When cloud computing services first emerged, legal ethicists speculated that the transfer of client files to cloud platforms outside of the lawyer's control could compromise his or her ethical obligation to preserve confidentiality of files and safeguard client property. Lawyers should determine what types of security measures are used to protect the physical servers that house client data. While the advantages of cloud computing can be significant, there are important security, reliability, and accessibility concerns to be taken. In a cloud system, trust is crucial. As a result, CDW provides and sources the most tried-and-true, dependable, and secure cloud services available. [3]

As per Hussam Hourani, Mohammad Abdallah, cloud computing technology is a very large scale computing paradigm which is distributed. Being very important topic, different services are provided on the internet platforms which speeds up the processes for faster delivery. They have highlighted the legal, contractual and security aspects related to the cloud computing technology. The three main cloud computing service models have been highlighted here, namely, Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS). The model can be selected based on the client requirements and specifications. Also, the technology can be deployed on the basis of three models, which are private cloud, public cloud and hybrid cloud.

As mentioned in the paper, the legal challenges

with respect to cloud computing technology are liability, compliance, copyright, applicable law, data portability, data protection. The parties involved must follow the contracts and align with the laws for successful execution of the models.

Security is one of the very complex challenges in a distributed architecture and is an issue which needs to be taken care of, while adoption of technology in any corporate or law firms. The main concepts related to cloud security are mentioned as software security, infrastructure security, storage security, network security. There are solutions proposed by different researchers to deal with these issues, such as Homomorphic Encryption and Intel SGX architectures. Basically, a connection between the service providers, customers and the legal entities in very crucial for the adoption of the cloud computing technology by any firms. [4]

According to Daniele Bourcier, Primavera De Fillippi, cloud computing represents a series of resources offered as a service, available on-demand, a pay-per-use basis available over the Internet platforms. In this paper, they have described the various risks and opportunities associated with its implementation and also a model for the implementation of an automated system.

It has been mentioned that cloud computing is being already deployed in the private sector and it is also gradually gaining popularity in the public sector as well. Clouds can be an asset as a legal minefield for companies and their lawyers. Cloud users can face certain sort of situations which could include data breaches, hosting of illegal content and inability of getting access to important information of any business.

The various sorts of risks and opportunities involved with cloud computing consists of costs, security, privacy and confidentiality, liability and responsibilities. As cloud computing adoption is increasing at a fast pace, the laws also need to keep this pace up simultaneously. Everything has to be regulated with the help of contracts only, which will keep on increasing. Large number of researchers are exploring the cloud computing technology, its adoption and ICT for governance and policy modeling. [5]

As per the study by Carlos A. Rohrmann and Juliana Falci, the paper highlights cloud computing and information security aspects. Also, some legal issues of contracts, contracting parties, their goal and main points of the contract have been addressed. Cloud computing allows the organizations to store and process their data remotely, which can be accessed anytime through our devices. In order to maintain the legal certainty, it is necessary to have a contract in place between the provider and the client. As mentioned in the paper, the benefits include cost reduction, availability, energy efficiency, etc. Some risks which have been highlighted are possibility of information leakage, data security, which can be addressed in the contract and also in the Service Level Agreement (SLA).

A clear contract is very vital due to the sensitive information which is to be managed. The parties mentioned in the contract are the Cloud Service Provider (CSP) and client company using the services. The description of the object of the contract is also very significant. The client must be agreeing to the terms of the service agreement for adopting the services.

It is very important for each party to understand the contracts having the duties and obligations clearly mentioned over there, in order to avoid any further issue which could be very problematic for the parties involved in the contract. [6]

According to Kevin Curran, Eugene McNamee and co- authors of this paper, cloud computing is providing various benefits to the law firms, legal departments, professional firms which are providing services and operating globally. The key features of this technology are helping the law firms to meet the client expectations and remote access to the data. This paper has highlighted the various aspects related to cloud adoption by legal firms, various issues and challenges, etc.

Law firms face different issues with the confidential documents with the authorized parties and various clients. The adoption of cloud services is enabling the organizations to switch from the traditional methods to modern technology providing them with various benefits. They have also mentioned the results of a study related to the uses of cloud computing adoption which are listed as backup, recovery, email, document management and case management.

It is necessary to address both risks and benefits which are associated with this technology. The

parties should review the Service Level Agreement (SLA) to ensure the data security part as this document addresses several important informative points. As the law firms and legal entities are always having quite personal and very confidential sort of data, with which any sort of data breach could lead to a big problematic situation.

Thus, it is very important to make a right decision while choosing the Cloud service platform, so that the issues related to architecture, compliance, privacy, etc. can be handled. Some existing and emerging practices for ensuring the client data security have also been mentioned in this paper, such as Cryptographic algorithms, Homomorphic Encryption (HE), Oblivious RAM (ORAM), Searchable Encryption (SE), etc. Basically, considering the beneficial aspect of cloud computing adoption, law firms should carefully look into the data safety and security aspects as well. [7]

This paper has basically highlighted the facts that the countries are trying to adopt technologies to secure the rights of the citizens through strict rules and regulations between the service providers and clients both. The authors have highlighted the overview of the various laws governing the usage of cloud computing technology, the various problems the countries face and the importance of the legal documents and contracts between the parties involved. [8]

This paper has mainly mentioned about the innovations in the Information technology field that is adding more business value to the enterprises on technical and strategic aspects. But there are some internal and external issues also associated. The enterprises thoroughly need to understand and figure out all the factors associated with the adoption and then accordingly consider to use the technology further. [9]

PROPOSED METHODOLOGY

Through the literature review of the previous research work, there are a few objectives which can be highlighted which could be discussed as follows.

A. To study the legal aspects of Cloud Computing:

There are many legal issues faced in Cloud Computing such as Security, Risk allocation, Date Retention issues, 3rd party contractual limitations, Regulatory compliances, Control over physical location of the data, Security breach, Trade secret protection, Hacking of cloud provider, financial liability of cloud vendor, Legal issue for force majeure, IPR issues, jurisdiction and court of law. Moreover, due to servers being located in different regions and countries cloud computing creates issues such as conflict of laws and applicable law in the jurisdiction. Due to multiple parties involved the liability shifts from one party to the other. It is difficult for the client to legally blame the provider for a breach due to the lack of contractual privity between the parties. It is imperative to define liabilities in agreements of the provider. A customer should be given the right to conduct due diligence and understand delivery of services. The integrity of virtualization ensures data security. Standard service level agreements which are usually non – negotiable provides Cloud services. The client also has the right to know where and by whom their data is stored, accessed and transferred. Options in the agreement should also be given if the user wants to change their provider in the future. If the Cloud system is ever hacked the first arises does the owner have the right to claim damages for their lost profits which can't be said with any certainty as there are lots of factors involved. The location of data in cloud services is generally uncertain. The country where the data is stored is not known to the owner. This raises the question what law to be followed and the jurisdiction if any such conflict arises. Moreover, the owner of the data and the parties involved should be aware of the country's court system which will govern on the conflict between the parties. No Cloud Computing provider will offer the owner a 100% guarantee and therefore there is always a risk involved.

It is necessary that the customer and the cloud provider should have a mutual understanding of their roles and responsibilities. Cloud providers should assure the security of their information security systems. However, it's important to have a plan for the unexpected if the owner wants to terminate the contract between the provider and the owner. The owner must be prudent enough to conduct a due diligence and conduct negotiations on the

terms of the contract to have an ease of business relationship in the future. Moreover, the owner must have the knowledge where the Cloud service provider will store their data so that the owner can be accustomed to their local laws and therefore be prepared for any legal action ahead. The contract must also have a provision to discuss possible data breaches in the future. The owner must also be allowed a certain trial period to test the performance of the provider's service and know about their vulnerabilities. It should also be incorporated in the contract if the client wants to end their contractual relationship and the obligations of both the parties. Finally, its necessary that the owner should have the right to audit the Cloud Computing provider provided the regulatory and compliance requirements.

B. To study the benefits and challenges associated with the adoption of cloud computing technology in law firms:

Modern technologies are quickly making their way into practically every industry, and the legal profession is not immune to their allure. Even today's law firms and lawyers are interested in leveraging technological improvements into their legal activities and procedures. Despite this, many lawyers and legal firms are hesitant to incorporate modern technology into their daily operations. Cloud computing is a rapidly expanding technology that is widely employed in many industries. Law companies can take the next step forward in terms of technology by incorporating cloud computing into their operations. However, they must first comprehend the concept, uses, benefits, and drawbacks of cloud computing in order to make the best use of it. Today's law firms are linked to multiple computer systems at the same time. With the use of an internet connection, one can access information from anywhere in the world at any time. When lawyers have access to all of their files and records and opposing attorneys do not, it gives them a huge edge in court or mediation sessions. Operating system independence is a benefit of cloud software. Users can choose between the Mac and Windows operating systems, depending on their preferences. Many programs can also be accessible via computers, tablets, or cellphones from remote locations. Installing cloud software is less expensive, and it has nearly no or insignificant maintenance costs. Rather having a large upfront investment, they need a little monthly subscription. Furthermore, no professional IT workers or outside consultants are required to set up the software. Even though customer files are on the hard drive of the computers, major and little accidents and disasters in the office can erase them. Offsite backups are also slow and expensive, and they may not be enough to protect against large-scale disasters. Backup files kept in cloud storage can safeguard you from calamities and even severe catastrophes. Although cloud computing has tremendous advantages, it also has numerous disadvantages. To determine whether the cloud is the correct step for them, companies should assess the liabilities and compare them to the benefits. While cloud computing might make tasks easier and save time, it can also raise ethical concerns. Attorneys must always be cautious that technology does not jeopardize their ethical obligations. Before implementing new technology, several legal firms sought advice from their state bar associations. To date, all state bar councils have endorsed the use of cloud computing as long as attorneys do so responsibly.

Cloud computing should be used with caution and prudence by law companies. Companies have no control over their cloud service provider, who could tamper with sensitive data. These service providers may disclose sensitive information with outside parties or duplicate their case notes. Law firms should always conduct thorough research before selecting a cloud computing service provider. They should ensure that the service provider they choose has a solid professional track record. Keeping sensitive material on the internet can be risky because the possibility of it being hacked or stolen is constantly present. Law businesses should use cloud services that have robust protection and security procedures that are difficult to break. Firms should keep track of what safeguards are in place against a breach and what actions must be taken in the event of a breach, and take the necessary procedures as needed. internet connection and availability are crucial aspects of cloud computing technology. If legal companies are located in places without internet connection, it is preferable for them to conduct tasks

manually rather than using computer software. Furthermore, a Denial of Service attack can bring the cloud provider's servers down. This may prevent law firms from gaining access until the system is restored.

Cloud computing is a cutting-edge technology with many benefits and drawbacks. Law businesses should use cloud computing technologies wisely, taking advantage of all of the chances and benefits while also conquering and dealing with the issues that come with it. Cloud computing, when used wisely, may benefit law firms and contribute to their growth and success.

C. To study the hesitance faced by law firms in India adopting cloud computing:

It has been observed that the legal business has always been hesitant to adopt cloud technology, and this is without malice. Due to the vast amount of secret and private information, documents, and evidence prevalent in the legal business, there has always been an understanding within the industry that allowing this data to be maintained on web-based servers puts the industry in jeopardy. Even though the legal business has had its fair share of concerns about cloud computing adoption, things are finally turning around. Some challenges, such as data leaks/breach and data theft, have been plaguing several industries for quite some time. In a nutshell, these are possibly some of the most compelling reasons for businesses to migrate to a cloud-based environment. The legal sector believes that storing sensitive data locally is just as vulnerable to theft as storing it in the cloud. Their viewpoint has influenced how people think about the issue. Despite their oversight of the area and the most basic security procedures, the problem persisted. In fact, the perception that data is less secure when it leaves the organization has faded. Fortunately, a succession of data breaches across several industry sectors around the world supports this. The Wall Street Journal reported in March 2016 that cyber hackers had breached the servers of a number of law firms, including the well-known Weil Gotsha and Cravath. As time goes on, several legal firms are finally realizing that traditional information technology security will never be adequate. That so, it's crucial to highlight that Cloud technology can give the level of protection they'll need to avoid data breaches, phishing, and other security threats. In general, Cloud computing is not new to other businesses, but it is certainly new to law firms, who have just recently begun to recognize the hybrid technology. Similarly, the retail business only began moving a few years ago; the legal industry will likely take more time to understand the benefits and drawbacks of cloud computing. They'll also be aware of how cloud vendors interact with their law business.

D. Scenario of Indian law firms to law firms abroad associated to Cloud Computing:

According to American Bar Association, the percentage of people who use the cloud increased somewhat from 2019 to 2020, from 55 percent to 58 percent. Small businesses and solo practitioners continue to lead the way. Despite some worries, lawyers continued to utilize Google Apps, iCloud, and Evernote at higher rates than specialized legal cloud services. Clio and NetDocuments scored first and second, respectively, among legal cloud services. Lawyers are becoming increasingly familiar with cloud technologies, which appeal to them because of the convenience of accessing data from anywhere, the low cost of entry, predictable monthly costs, and reliable data backup. Especially noteworthy, over 30% believe that cloud services give greater security than they can supply on their own. Confidentiality or security and a lack of control are at the top of the concerns. Nearly 94 percent of lawyers consider the vendor's reputation to be crucial in their decision-making process. Client-focus is not a motivating force for lawyers who use or are considering using cloud computing, according to the results of the 2019 Survey. Client requirements, expectations, and wants should be a top priority for forward-thinking lawyers and firms. Large companies use the cloud less than solos, small businesses, and medium-sized businesses. These findings could be due to a lack of familiarity with large firm technologies or the reliance of large firm lawyers on IT departments. Cloud services are now part of the IT equation for a small but growing majority of lawyers and companies, according to the 2019 Legal Technology Survey. In 2019, reported increase in cloud use remained largely

stable. However, with the rise of mobile apps that run on cloud services, the continued lack of actual attention to confidentiality, security, and due diligence issues remains a serious and worrying concern. Client concerns about whether their outside legal firms are making appropriate efforts on cybersecurity will continue to be fueled by the outcomes on security processes, and the data indicate that they should be concerned.

In India, cloud computing use is still limited. The delayed growth and adoption of cloud computing in India can be attributed to a number of policy and legal challenges. The lack of an effective cloud computing policy in India is to blame for the country's low cloud computing adoption. However, legal concerns about cloud computing in India are the primary cause for the country's cautious acceptance of the technology. In India, Cloud Computing is still untrustworthy. The lack of a legal framework for cloud computing in India, as well as the absence of privacy regulations, data protection legislation, and inadequate data security in India, are the key causes of this predicament. In India, due diligence on cloud computing is lacking, and businesses and people are using it in violation of different Indian regulations. In India, cloud computing service providers are required to comply with cyber law due diligence. Although cyber law due diligence is already well established for Indian companies, cloud computing and e-commerce service providers are not taking it seriously. In cases of cloud computing adoption in India, privacy violations, data breaches, data thefts, cyber-crimes, and other issues will undoubtedly develop. Even if a corporation or individual provides cloud computing services in India, it must adhere to a number of regulatory regulations and cyber due diligence standards. Due diligence standards for various corporate organizations and stakeholders are outlined in the information technology legislation of 2000 (IT Act 2000). Cloud computing service providers in India are subject to the same due diligence obligations.

CONCLUSION

As the study from the past research work has been mentioned, there are various aspects associated with the adoption of cloud computing technology in the law firms and corporations. The adoption of this technology provides us with various benefits such as mobility, data security, costs effectiveness, reliability, availability, etc. As we have studied that the adoption of cloud in any organization could help the people to achieve many sort of functionalities through one single platform only. The usage of cloud computing technology in any firm will offer more efficient workflows with even more affordable costs for the service. The platform is also quite easy to be used and is based on the latest trends. This technology definitely provides the organizations with better data security as the data is stored according to the client's convenience on the online platform. This really makes the data private and easily accessible from any place. The firms can deliver better experience to the clients and even time management for the tasks also becomes easier simultaneously. This technology also provides with the benefits of reducing the costs of the local storages and high maintenance of the storages. The system is also not very complex, just needs to be taken care with respect to the laws related.

The basic advantages that the adoption of this technology would provide to the people associated with the legal bodies include mobility, security, collaboration, insight, automation, client experience, cost savings. Using the files on cloud platform can make it very easy for collaboration as anyone can edit and view the updated files at any point of time, hence making them spend lesser time on the management of documents. There is possibility for the automation of various processes here, which are frequently required. This can also help the clients to have better experience as the service providers can assess their queries anytime. These are the essential factors which are there, with respect to the law firms and lawyers for providing top services to their respective clients.

Along with the positive side of any product or service, there exist some challenges or risks which are required to be studied and considered. As the law firms deal with very crucial and confidential sort of data which is closely associated with the clients, hence it is very important to ensure the security through some established laws and legal documents as well. As of now, there are not much strong laws present for the platforms providing cloud services in India. The laws need to be stricter in this field of service providers. There should be

the use of Service Level Agreements (SLA), for the understanding of the various important points of contract between the cloud service provider and the clients. There are several risks such as hacking, data breaches, loss of crucial data, etc. which need to be taken care of, which can be done efficiently if the legal aspects are associated with the services. There needs to be a presence of some guidelines, which is very necessary which would be required to be followed by all the cloud service platform providers. The contracts are highly required to ensure the protection of data, clearly mentioning the various mechanisms to be followed by the cloud providers and the clients as well.

As IT services and here specifically, cloud services are providing the organizations with so many benefits which are quite helpful for them to improve in future, the legal firms should also try to move on from the traditional methods to the cloud computing technology slowly and gradually. The lawyers and associated corporations can come up on the top of the list by adopting the latest cloud services for the purpose of legal practices management, contract management and documents management to meet the various needs of their clients. But at the same time, it is also very crucial to start with the usage with the assistance from some expertise of the particular field and attain proper knowledge of the methods of working and accessing the platform. Also, the parties involved should be aware of the challenges and risks associated and ensure the usage with avoiding such situations which could cause any such issues.

Looking at the trends that cloud computing adoption scale is hiking up everyday, within next few years, majority of the firms will shift towards the cloud platforms, collaborating with some or other service providers. Since there are a lot of benefits for law firms with using cloud that it cannot be avoided at all. The firms will try to catch up with the latest technologies in future times.

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Technology vs Morality

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J.Robert oppenheimer the father of neuclear bomb rightly said knowledge cannot be persuied with morality.

today we are standing at the cusp of 5th technological revolution an age where increased automation and big data has led to machine learning artificial intelligence and geonomics that we have started putting faith in these new age tools and today our decisions are increasingly outsourced to machine algorithm . outsourcing decisions is good but not to the extent that morality gets affected and we run in a race where technology outsources morality. The fundamental challenge will be that while technology knows no morality, ethics or belief, the effective functioning of every human and every society is entirely predicated upon them. If people in todays world are investing in disruption and disruption only then who will invest in the jobs that gets disrupted in this process? Which started as a development in the field of technology in the form of artificial intelligence, algorithms, robotics and genomics has reached a point where not only jobs are getting replaced but, the impact has reached on to society, climate and even humanity as a whole. In a race to move forward and outshine others the next decade will be accelerated to the extent that ai, robotics and genomics will change not only the humanity but our planet as well. It is a well stated fact that technology has no morals, it is we the technologist, corporates ,government and people who have placed morals on technology as an ongoing process of development in the form a guilt without even thinking about the moral and ethical overlay replacing upon them. with the intent to move forward we aren't realizing how quickly the changes will happen, its time that we proactively think and debate and discuss of the changes that will happen to us if we continue to not take technology and morality hand in hand rather than place technology superior to morality.

This paper provides an insight into the concept of taking technology and morality hand in hand rather than overpowering each other, thus affecting human race/humanity.

keywords : algorithm, artificial intelligence, genono mics, morality, machine learning, automation, big data, humanity

INTRODUCTION

The evolution of technology-Computers, AI and cellphones, that's all that millennium's consider as transmogrification. But technology is not just what we have in our hands or at our home, according to oxford dictionary technology is application of scientific knowledge with practical purposes. It is a lot more than just phones, probably fire is a good analogy for this- one of the earliest forms of technology was to find what material is inflammable, and how you can cut it out. Talking about morality on the other hand it is looking at the affirmative and negative side of anything that an individual comes across and the way he conducts himself. As was mentioned in the introduction above, information technologies are in a constant state of change and innovation. The internet technologies that have brought about so much social change were scarcely imaginable just decades before they appeared. Even though we may not be able to foresee all possible future information technologies, it is important to try to imagine the changes we are likely to see in emerging technologies. James Moor argues that moral philosophers need to pay particular attention to emerging technologies and help influence the design of these technologies early on to encourage beneficial moral outcomes Although technology is making life easier and helping human desires to become reality, in the long run, it is said that it "will change the course of humanity"

The various aspects of –

TECHNOLOGY VS MORALITY

Machine

- Disruptive technologies in the field of machines are dictating a new future for humankind. Almost every day we hear of new advances that blur the lines between the realms of the physical, the digital and the biological. Robots are now in our

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operating rooms and fast-food restaurants. Talking about machines implies talking about industrial revolution, The first industrial revolution took British manufacturing out of people's homes and into factories, creating the beginnings of organizational hierarchy. The second one was characterized by electrification, large-scale production and the expansion of transportation and communication networks. It led to the birth of the professions – such as engineering, banking and teaching – created the middle classes, and introduced social policies and the role of government. And as electronics and information technology automated production during the third industrial revolution, many human jobs started to become service-driven. When automated teller machines (ATMs) arrived in the 1970s, it was initially viewed as a disaster for workers in the retail banking industry. Yet branch jobs actually increased over time as branch cost went down, becoming less transactional in nature and more about managing customer relationships. With development comes great unemployability. The work that machines can do is way beyond what humans can, even though it is the human who created it. Development in machines have increased the divide between rich and poor, as rich are becoming more rich by reinvesting in technology giving no scope for poor to get out of their environment and work. The shift in technology is making things difficult for those who lack knowledge and have no means to get out of the circle they are stuck in. Even if we become more technologically advanced it is really important to take humanity at the same level so that the level of equilibrium is achieved and both can get benefits from each other.

Medicine

Several decades ago, it was almost impossible to even imagine the progress that we have seen today in medicine, Less than two centuries ago, simple rules of hygiene such as washing hands before going to the delivery room, the concept that contaminated water may be responsible for the spread of several infectious diseases, and the importance of antisepsis were not realized. The structure of DNA was defined in 1953, and the human genome was established at the beginning of this century. Today, the genetic makeup that predisposes an individual to or inhibits the development of several diseases such as atherosclerosis, cancer, and arterial hypertension have been defined. Therapy based on the genetic makeup of an individual patient (i.e., pharmacogenetics/pharmacogenomics), especially in cancer, has been introduced into clinical practice. Moreover, gene expression in relationship to the environment (i.e., epigenetics), in certain instances, has been defined as gene function often is related to environmental factors. For instance, a certain gene in environment A may produce the disease, while the same gene in environment B may not produce the disease. Further, new technology allows for gene editing, these discoveries may lead to the prevention and/or cure of certain diseases by modifying gene function. All of this even though seems a step towards progress, but it won't be wrong to say that it is as equivalent as tampering with the natural environment you live in. The development in the field of gender detection at an early stage of pregnancy has led to female feticides and girl child killing. The use of medicines to cure even the slightest headache is quite common among children who a few decades ago didn't even know what headache was? It would be wrong to not point out that what did development in the field of medicine actually did in the form of a bio-weapon - CORONA VIRUS. Which was initiated the lab of Wuhan CHINA as a source to make the country strong, led to the reason of millions of deaths in a short span of 1.5 years. The fear will not go in many years to come by and the loss it has created on the face of humanity cannot be avoided.

Malware, Spyware and Informational Warfare

While there may be wide agreement that the conscious spreading of malware is of questionable morality there is an interesting question as to the morality of malware protection and anti-virus software. With the rise in malicious software there has been a corresponding growth in the security industry which is now a multibillion dollar market. Even with all the money spent on security software there seems to be no slowdown in virus production, in fact quite the opposite has occurred. This raises an interesting business ethics concern; what value are customers receiving for their money from the security industry? The massive

proliferation of malware has been shown to be largely beyond the ability of anti-virus software to completely mitigate. There is an important lag in the time between when a new piece of malware is detected by the security community and the eventual release of the security patch and malware removal tools. The anti-virus modus operandi of receiving a sample, analyzing the sample, adding detection for the sample, performing quality assurance, creating an update, and finally sending the update to their users leaves a huge window of opportunity for the adversary, even assuming that anti-virus users update regularly. Malware and computer virus threats continue to grow at an astonishing rate. Security industry professionals report that while certain types of malware attacks such as spam are falling out of fashion, newer types of attacks such as Ransomware and other methods focused on mobile computing devices, cryptocurrency, and the hacking of cloud computing infrastructure are on the rise outstripping any small relief seen in the slowing down of older forms of attack What is clear is that this type of activity will be with us for the foreseeable future. In addition to the largely criminal activity of malware production, we must also consider the related but more morally ambiguous activities of hacking, hacktivism, commercial spyware, and informational warfare.

Artificial Intelligence and Artificial Life

Artificial Intelligence (AI) refers to the many longstanding research projects directed at building information technologies that exhibit some or all aspects of human level intelligence and problem solving. Artificial Life (ALife) is a project that is not as old as AI and is focused on developing information technologies and or synthetic biological technologies that exhibit life functions typically found only in biological entities. A more complete description of logic and AI can be found in the entry on logic and artificial intelligence. ALife essentially sees biology as a kind of naturally occurring information technology that may be reverse engineered and synthesized in other kinds of technologies. Both AI and ALife are vast research projects that defy simple explanation. Instead the focus here is on the moral values that these technologies impact and the way some of these technologies are programmed to affect emotion and moral concern.

Because technologies and morals co-evolve, modern societies have to become adept at techno-moral learning or the art of 'reflective' co-evolution. Developing this skill requires a better understanding of the various ways technology and and morality challenge each other. The moral stand-still has led to technological experiments aimed at resolving scarcity and to the reinterpretation of aspects of morality that seems more flexible and helps technology evolve taking morality in power.

LITERATURE REVIEW

From the findings, the observation is-

As per findings from forging a fit between technology and morality, it is observed that technologies help change the societies in which they are introduced, and in the process are changed themselves by societal pressure. What is not appreciated is that this co-evolution of technology and society doesn't halt at the doors of morality. To establish a fit like this there are two ways-

1) Technology can be outlawed or redesigned to fit as per current morals
2) Technology-morality fir can be forged through moral change.

The article that I referred focused on a case-study of techno-moral changes; the ethical and legal debate in Netherlands on the issue of organ transplantation. As per moral beliefs it is believed that organ transplant affects the integrity of the human body, but Prometheus, patron saint confronted that in a rapidly changing society one should never stop the changes.one should accept it from the outlook that a dead bodies, organs are a source of life for the person in pain, and there is no noble work than to give life.

As per moral-path dependency there are rules and regulations which needs to be followed while talking about bringing technology and morality at power with each other- the deceased or his relative had requested the approval of transplant in his will or document. Also as per the criteria of taking out organs before all bodily functions have stopped as led to approval of a solution of brain-dead criterion. With the advent of technology and ways to save life's it cant be ignored that the relatives of deceased go through a tough call as to

donate their loved ones organ or not, and this point the technology doesn't go in hand with morality on the part of the one who have suffered the pain and grief of loss of life. The debate on organ transplantation has not reached closure because no successful fit has been forged between morality and technology. The feeling remains widespread that people ought not to die on a waiting list, and that doctors, politicians, or transplant boards should not be forced to choose among potential recipients. But in the end the moral principles of the sanctity of the body and of self-determination always take priority over the right of patients to be provided with donor organs. The scarcity issue remains unsolved because the necessary moral change is deemed out of the question. Hence, people try to find new ways to work around the present moral standstill by proposing new norms and/or technologies.

From the readings of Technology and Morality:- influences on public attitude towards biotechnology, it is observed that in the era of breath-taking scientific discovery, the new technological progress in the field of biotechnology has raised issues of moral concern and religious consciences. Propends of the new technology claims that new advances in biotechnology will lead to positive resolution in agriculture , food production and medical care. Still there are concerns that biotechnology is inherently unpredictable and uncontrollable so it is a possibility it will be mismanaged thus affecting the humanity aspects of morality. Critics have identified a moral objection to biotechnology based on the commodification of life that biotechnology, especially genetic engineering, makes possible. Such concerns constitute intrinsic objections that through the use of biotechnology we are "tampering with nature" there are a few background characteristics which influences the view mentioned-

1) **GENDER-** included because it is inextricable linked to the economic-growth and safety. Much of the theoretical literature proposes earlier suggested that males are more purpose-rational than females, while females are more concerned with safety and hence are expected to be more engaged in related behaviors.
2) **Income and Education-** the theoretical literature suggests that advantaged positions reward a marketplace mentality and reinforce sex-role differences. Thus it can be hypothesized that those with higher income and education are rewarded for having a marketplace mentality, showing a preference for accumulation and competitiveness, and thus they will be more purpose-rational.
3) **Religious Salience-** it includes background variable, primarily to control for the importance of religion as we try to sort out the relationships among the world-views, awareness, perceptions of benefit and risk, and moral objection. This variable is included to reduce the spurious attribution of negative biotechnology attitudes to religious respondents.

An important prerequisite for understanding the moral objection to biotechnology is an understanding of both the nature of moral beliefs and the social factors that influence those beliefs. The complex nature of biotechnology, its relative newness, and the lack of information about it make the construction and clear exposition of an ethic of biotechnology a difficult and as yet unfinished endeavor.

As per Bruno Latour, Morality and Technology- the end of the means, Jacques Ellul states some technologies end up invading the whole horizon of ends by setting up their own laws, technologies belong to the realm of means and morality to the realm of ends it is maintained, there is no other resource for human beings than to disengage from this domination by technologies, a domination that is all the more perverse for not imposing the law of a master but that of an emancipated slave who does not have the least idea about the moral goals proper to humankind. It is increasingly believed that human self development appeared within a nest or a niche already inhabited by abilities, by know-how and technological objects. Technologies belong to the human world in a modality other than that of instrumentality, efficiency or materiality. Technologies belong to the human world in a modality other than that of instrumentality, efficiency or materiality. The question raised in this article is-

What can we do to give to technology the dignity equal to that of morality so that we may establish between them a relation which would no longer be that of the tool to the intention?

The regime of technology, if one wishes to be different from another standpoint (scientific, artistic or moral) not in the way that a region of reality would differ from another, but in the way prepositions differ amongst themselves, in much the same way as 'in' is clearly distinguishable from 'by', although there is no particular domain of 'in' that we can separate from the territory 'by'. I would like to define the regime proper to technology by the notion of fold, without giving it all the Leibnizian connotations that Gilles Deleuze (1993) has elaborated so well. If one adds morality to technology, one is bound to notice, to make a pun, the end of the means. Without means, another history begins, since morality and technology multiply the entities we must consider and must learn to reassemble. As one can see, the relation of technology to morality is somewhat modified as soon as we renounce the idea of putting the first on the side of means and the second on the side of ends. Each of these modes of existence upsets in its own distinctive way the relations between means and ends: technology by dislocating the relations between entities in such a way that they open towards a series of new linkages that force the constant displacement of goals and multiply intermediary agents whose collective sliding forbids any mastery; morality, by constantly interrogating aggregates.

With reference to Chinese studies in Philosophy, Luo Guojie gives his take on the relationship of scientific technology and material life to morality. In the history of Chinese and foreign ethics, there were some philosophers and conservatist who have opposed the advance of scientific technology and culture on the generals grounds that the development of scientific culture has resulted in a decline in morality. In a pursuit of material desire and growth people have forgotten human morality. According to them it is only the infants who preserve a high moral character. In moral cultivation he wanted people to "return to the roots". As his moral ideal he stressed the need to "be rich in virtue, like a naked child. In order that man preserve the state of the simplicity of the "infant," the "naked child," he even advocated that all mankind should return to a primitive society without culture, without knowledge, without wisdom. it was best not even to look at the development of material culture; men should close their eyes and plug up their ears, "manifest purity and embrace simplicity," for only in this way could the best moral qualities and level be preserved. But with changes it became quite important for the conservatist to look from the perspective that both Morality and Technology can go hand in hand. In order to make life more comfortable luxuries which resulted from development in technologies became widespread. There were view which believes that the development of scientific technology and the raising of material cultural life will automatically raise the level of man's morality. So in order to bring technology and morality on the same page five moral demands were established-there is another view which believes that the development of scientific technology and the raising of material cultural life will automatically raise the level of man's morality. If these can really be accomplished, the communist moral consciousness of the people will be raised immensely, and their effect on promoting the development of scientific technology and the forces of production will inevitably be much more obvious.

OBJECTIVES

The world is changing day by day, so are we , the current world has revolutionized and will continue to do so and the only thing that is constant throughout the years is CHANGE. The ideology behind this research paper is rather than taking technology and morality as two different words we should put- TECHNO-ETHICS, as a word in our day to day life. Ethics in technology is a field where ethics is specifically related on the ethical questions specific to the technological advances, including its alternatives, benefits, risks and limitations and most of all its immediate and long-range impacts on the society. It seeks to understand and resolve the moral issues that surround the development and practical application of mechanical and electronic technology. Techno-ethics as a term relates to technology and ethics which focuses on discovering the ethical use of technology, protecting us against the misuse of technology, and hence making an understanding of common

principles to guide new advances in technological development. The ethical use of new technology is important in society today, particularly in areas where technological advances have a transforming effect on society and the best example is digital media and social media which in today's world has a great impact on the society because a maximum number of people are affected by technology nowadays. Ethical problems increase as technological advances happen because technology provides numerous opportunities for action for which well thought out ethical policies might have not been developed. In order to ponder more about the topic I would like to mention the social media aspect in techno-ethical world. As social media have become a primary mode of expression and communication for almost everyone in the world such social media widely used is Facebook which now stores almost everyone's private information about where their place of residence, photos, family details, etc. well Facebook advertises different software, applications, etc. There is an obligation on Facebook that allows third party to access your Facebook Id including all your personal information because by clicking on the agree to terms button face app can access too much and much more of the data form Facebook. This is because our relationship with technology creates new opportunities for action and raises new ethical considerations that did not exist previously and that's why techno-ethics provides a unique theoretical foundation to extend existing relation between technology and ethics. Ethics of technology is ethics applied to technical domains and domains depending heavily on technology. As we are at the cusp of 5th technological revolution, we need to understand that technology and morality are different sides of the same coin, they cannot be separated from each other. A progressive world will be the one where both our at power with each other and not superior of one another. The future generation of our society will only be successful if the growth in technology is build on the foundation of morality.

FINDINGS

Technology is expanding the minds of many people everyday. Most of the economy depends on the technology to provide for daily necessities. On the other hand with the advent of technology it is important to understand and not forget that we are affecting the humanity in general if we don't consider morality with technology. We need to understand that Technologies belong to the realm of means and morality to the realm of ends, our world will be truly developed when this means and ends come together. This research paper gives an insight to the simple convention which we being in a race to be more technologically advanced have forgotten that morality is the face on original existence on the plant, we need to look and make a place where were both technology and morality are treated as two sides of the same coin i.e. together they are what this world and current situation demands for.

CONCLUSION

Educating the mind without educating the heart is no education at all.

This research paper will make you think beyond the classic technological progress that the whole world is running after, we are at that stage of development where we need to sit back and rewind of all the changes we have done and of all those we have gone through. We need a world where techno-ethics is used, implying giving importance to both technology and morality at the same time. A good use of technology is one which improves human physical, mental, spiritual, and moral well-being. It helps people become healthier, more educated, more loving of God and neighbor, and better at making moral decisions. Advancement and growth will only be valid, only and only if we take mind(technology) and heart(morality) together.

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Social Cognition: Study of the hour

Shubham Mishra* **Mehakk Jain****

The mental processes involved in perceiving other people and how we come to know about the people around us. Social Cognition is the perception and action towards it, and this study shows how it affects our mental health and our work lives. It is a growing field of study where we try to identify the factors that influence an individual's attitude and personality that in turn affects the environment around him/her. Social Cognition develops in childhood and adolescence. As we grow, we become more aware of not just our feelings, thoughts, and motives, but also of the emotions and mental states of others.

This research is focused on finding factors that facilitate these undefined invisible issues that may not be visible physically but have serious effects on the individual and the people around him/her.

Keywords: Social Cognition, Work Environment, Mental Health, Attitude Formation, Personality, Perception

INTRODUCTION

In this paper, we aim to analyze the mental conditions and factors affecting individuals at their respective workplaces. 'Social Cognition' refers to the process of perceiving and reacting to certain factors. When we use the term 'Cognition', we mean the 'unconscious' mechanisms in the mind and brain that bring about representations of experience. We can be consciously aware regarding these mechanisms; however, we are mostly unaware. In the field of developmental psychology, it is commonly believed that the factors that affect cognitive performance in interactions with other people are the result of the individual's cognitive capabilities and social skills. This is evident in Piaget's work on moral growth (Piaget 1972) in which he argued that social cooperation was essential to gain a full understanding of moral wrongdoing and the punishment for it. It's also illustrated in Vygotsky's research on learning in a context of social interaction (Vygotsky and Vygotsky 1980) and how negotiation with peers can help in solving problems. The research into the development of infants has seen a significant boost thanks to the development of new techniques for behavioral analysis.

**Director, Gratify Digital, Solutions Private Limited*
Audit Associate, EY Global Delivery, Services India LLP

LITERATURE REVIEW

1. Social Behavior: Interacting with Others

Since we interact with and influence one another every day, we've acquired the capability to let these interactions run smoothly and efficiently. We collaborate with others to achieve outcomes we would not be able to achieve by ourselves, and we trade goods, services as well as other benefits with people. These are the essential behaviors for the survival of the world of any kind (Kameda, Takezawa, & Hastie 2003; Kameda, Takezawa, Tindale, & Smith, 2002).

The exchange of services, goods emotions, goods, and other outcomes of social interaction is called "social exchange". Rewards from social interactions (the positive outcomes we receive and give in our interactions with other people) comprise such advantages as praise, attention affection and love as well as financial support. Costs of social interaction (the negative results we receive and give in our interactions with other people) however, on contrary, are such things as the anger that can result when conflicts with other people develop and the guilt that follows in the event that we believe that we've acted in a way that's not right, and the work involved in establishing and maintaining healthy relationships with others.

2. Social Decision-Making Brain Regions

Since we interact with and influence one another every day, we've learned how to make these interactions run smoothly and efficiently. We work with other people to achieve outcomes that can't be achieved by ourselves, and we exchange services, goods as well as other benefits with others. These actions are crucial to the survival of every society (Kameda, Takezawa, & Hastie 2003; Kameda, Takezawa, Tindale, & Smith, 2002).

One way to grasp the peculiarity that social decisions are by taking the neuroscientific method. Through understanding what happens within the brain we are able to separate the social and non-social choices. This method is especially informative and beneficial since similar behaviour is often observed in both different types of stimuli however the neural mechanisms behind these decisions are shown to differ (e.g., Harris and colleagues. 2005; Harris and Fiske, 2008).; Harris and Fiske Harris and Fiske, 2008.). In this article, we summarize two brain networks that we believe are associated with social decision-making, the conventional brain network for decision-making, and the person perception/social cognition brain network. 1.. In closing, it is important to remember that when discussing the distinctive characteristics of social decision-making, that we are still studying the processes involved in making decisions. Therefore, the traditional decision-making mechanisms and brain structures that underlie these processes are at play in studies of social decision-making. Studies have shown that social context influences the structures of decision-making (see Engelmann and Hein 2013, for a review). However, the exact mechanism the mechanism by which your social environment affects this is not fully known. In the person perception/social cognition brain network Researchers are beginning to discover how these functions interact on a neural scale (e.g., Hampton and al. (2008); Yoshida et al. (2010); Suzuki et al. (2012)). We then examine brain regions involved in social cognition and decision-making.

Research has shown that brain regions also play a role in the social process of making decisions. Medial Prefrontal Cortex (MPFC)--responsible for generating worth signals to advertise food, non-food consumables and financial gambles (Chib et al. 2009)--is also in charge of creating value signals in a social setting (Lin et al. 2012.). These value signals could be considered an observable signal that can be used to make predictions. Values assigned to higher values are more likely to be successful while those with an lower value will result in the outcome to be less favorable. Recently, it was thought that the MPFC functions as an action-outcome-predictor, which is involved in learning and predicting the probability of outcomes resulting from decisions (Alexander and Brown 2011,). Similar to this, studies of social reward processing indicate that the striatum reacts to both financial and social incentives (Izuma et al. 2008, 2010). The links between cortical and subcortical brain regions and the striatum result in an intricate network of brain areas which are engaged in the process of making decisions. Dopamine is a neurotransmitter that serves as the vehicle through that these brain regions communicate. Prediction error signals, which trigger dopamine neurons in the event that outcomes do not match the expectations (or predictions)--also occur in events that involve social interaction in games of chance (Lee, 2008; Rilling and Sanfey (2011)) and when targets of social interaction do not conform to the expectations (Harris and Fiske (2010)). These regions are collectively together with additional regions like the amygdala the posterior Cingulate Cortex (PCC) and insula and other parts of the prefrontal cortex that include prefrontal cortex orbital and the more rostral area of MPFC form an important decision-making network that is often involved in economic decision-making (Knutson and Cooper 2005; Delgado et and. 2007,).

3. COVID-19 induced social isolation; implications for understanding social cognition in mental health

Social distancing strategies to stop the spread of severe acute respiratory syndrome - coronavirus 2 (SARS-CoV2) diseases are more

most likely to result in unintended impacts on the mental health and well-being. Social anxiety, loneliness and isolation are major factors that increase the risk of developing mental health issues. They are an important concern regarding the long-term effects of social isolation (Vatansever, Wang, & Sahakian, 2020). However, this epidemic has brought to light the challenges of many individuals suffering from mental illness living socially disengaged and isolated lives daily well before the outbreak of the coronavirus (COVID-19) and the societal 'lockdown'.

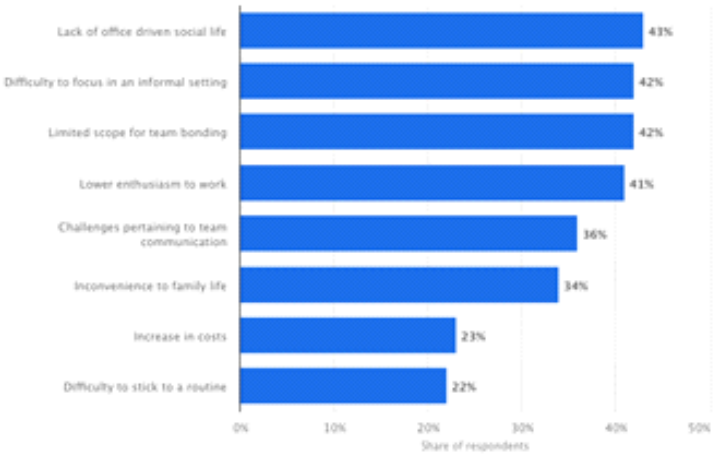
The integration of social networks has been shown to be strongly connected to social cognitive abilities which are the cognitive abilities required to interpret, perceive and process information to facilitate adaptive interpersonal interactions (Green, Horan, & Lee, 2019). In the absence of the ability to read emotions in other people's faces and recognize subtle social cues, social integration and maintaining support networks for social interaction is difficult. There is a fundamental issue on whether social cognition deficiencies are in fact indicators of vulnerability for mental health disorders, as people with poor social cognitive abilities are unable to cope in creating normal social support networks that result in loneliness and withdrawal, or if they are an effect of long periods of loneliness and weak connections to others triggered by mental health issues.

Psychological working environment

A healthy workplace environment encourages satisfaction at work. This leads to improved productivity and more energy to face everyday problems.

Recognition and security -

A healthy and positive workplace is of a few things, but not only in having coworkers you get along well with and who enable you to thrive. It



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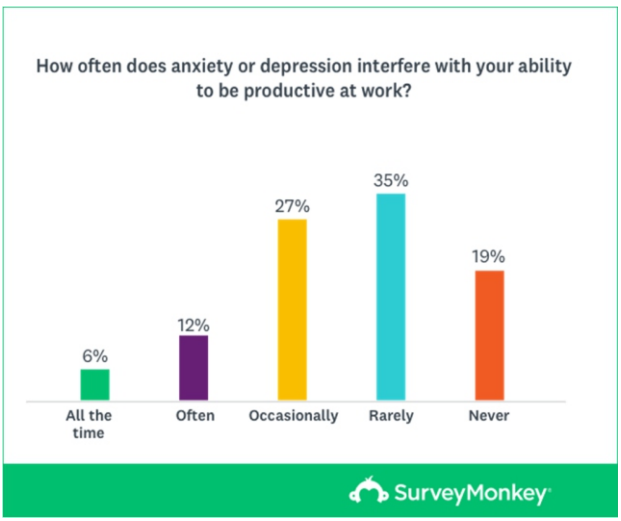

might also include an employer who recognizes and pays attention to individuals and groups' contributions in tackling large as well as small tasks.

The demands at work and the employees' potential to influence the execution of their tasks along with clearness and predictability of the roles are just a few aspects which are taken into consideration in evaluating the psychological workplace environment.

It is widely known that social trust and collaboration between colleagues and an awareness of fairness throughout the workplace creates a stronger basis for collaboration and serves as a buffer against frustration and anxiety.

FINDINGS/CONCLUSIONS

Social cognition abilities grow as we grow older. A child is more egocentric and doesn't care about what others will feel, while this fades away with age and we develop a better perception ability to feel emotions of others and form our attitudes based on our effects of perceptions. Social cognition is closely linked with mental health where bad social perceptions might result in mental disorders such as Depression. Due to covid the situation has only worsened as Social anxiety, loneliness and isolation are major factors that increase the risk of developing mental health issues. If we create a positive social environment where colleagues have social trust and collaboration awareness, the workplaces create a stronger basis for collaboration and serve as a buffer against frustration and anxiety. Such workplaces have increased productivity and the new WFH might be good for some but for most it has been a threat to their social cognition.

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