

DAILY PT POINTERS

20 January, 2025



The Hindu-GS2(Governance)Page8

How is TRAI and the govt. combating spam?

How will blockchain technology effectively counter spam? What are some of the steps being taken by the government against unsolicited commercial communications? Have some of the measures already taken been effective against unwanted calls and messages? What is a do-not-disturb registry?

EXPLAINER

Aroon Deep

The story so far:

be Telecom Regulatory Authority of India (TRAI) will be using distributed ledger technology (DLT) to register chairman Anil Kumar Lahoti said. Spam rules will be tightened to make commercial messages traceable, the TRAI has indicated.

What is TRAI's role in fighting spam? The TRAI regulates the telecom industry. and its main role is in regulating Unsolicited Commercial Communication (UCC), the official name for spam. Starting in 2007, the regulator implemented a do not disturb (DND) registry, which would force telemarketers to abide by customer preferences when it came to

commercial calls. If a telecom customer signs up to the DND registry, they are not supposed to get any spam calls or SMS messages.

TRAI had also worked with an external agency to develop a DND app, which would allow customers to register their DND preference, and accept complaints. Under the Telecom Commercial Communication Customer Preference Regulation (TCCCPR), 2018, telemarketers who called or sent messages to DND registered customers would receive warnings, and if enough warnings accumulated, they would be blacklisted from sending messages to telecom

The DND app has not always been maintained by the TRAI, and was briefly unavailable from 2022 onwards. An SMS reporting facility where users would have to report messages in a particular format was available, but further steps were taken to make the process more user friendly. In 2024, TRAI mandated that DND reporting be made available on



What role does blockchain play? a reliable, un tamperable version of the In order to fight the delage of spam same data. At the time of the 2018 messages, TRAI mandated in the TOUCPR regulations, the necessity to use blockchain for the purpose of maintaining

making sure that telcos would have a

complete record of who issued a message

that telcos use a blockchain ledger, also known as a distributed ledger, in order toa spani exemption database was debated, store a constantly updated list of as enthusiasm about the technology's potential had spilled over beyond approved senders of SMS messages. Teleos would also be required to approve cryptocurrencies, where it continues to specific formats of messages. For he a mainstay. instance, an OTP message that goes, In 2024, the regulations were tightened "Your OTP is 433212," would be stored in to ensure "traceability" of messages, thus

been required to be sent from sender IDs, before it is sent to an SMS gateway. This and not phone numbers. was aimed at plugging a crucial flaw in the This has been one of the most stringent system that would allow anyone to rules that have been issued to fight SMS register on the blockchain solutions spam anywhere in the world. Blockchain implemented by telecom operators and as a technology allows for so-called send out fraudulent or spam messages in immutability, which means that every spite of the systems in place to combat

the blockchain as "Your OTP is ..." with

snace for a voriable. These messages have

further tightened in the coming year. Have these measures been effective?

For those who have registered their DND preferences, communications from legitimate businesses that follow the rules may have reduced. However, spam has a constantly changing character. While much of spam is merely commercial messages that may be annoying but harmless, the wave of digitisation has increased incentives to get around the protections against commercial messaging and calling. A wave of fraudulent calls have also emerged, with cyber frauds seeking to ensuare Indians in financial scams. Many of these operations are done outside the framework of SMS sender IDs, and are run through disposable 10-digit phone numbers, making it hard for real-time enforcement of anti-spam regulations.

There is also the issue of spam and scam calls from international numbers. which can be leased from certain online Voice over Internet Protocol (VolP) providers, but appear as legitimate international call traffic.

Which are the other steps taken by the government to end spam?

The Department of Telecommunications (DoT) has launched the Sanchar Saathi portal, which has a reporting site called Chalchu. Do'l has partnered with law enforcement, banks, and other stakeholders in order to accept reports of "suspected fraudulent" calls and messages, and has moved to cancel laids of numbers that are associated with unauthorised telemarketers and

It also set up the Telecom Security Operation Centre at its New Delhi headquarters to monitor suspicious internet traffic in real time. Meanwhile, firms like Airtel have taken steps to declare suspicious calls using Artificial Intelligence as "Suspected Spam," a move that is being replicated by other telcos as well. The telco has also started labelling

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- TRAI regulates telecom spam through the Do-Not-Disturb (DND) registry and has introduced blockchain to track and trace commercial messages.
- In 2024, regulations were tightened to ensure better message traceability and prevent fraudulent messages. Despite these measures, challenges like fraudulent calls and international scams persist.
- The Department of Telecommunications (DoT) launched the Sanchar Saathi portal and is working with law enforcement to tackle fraud.
- Telecom companies like Airtel are using AI to flag suspicious calls and label international calls as spam.

The Hindu-GS3(Economy)Page8

What did the ILO report state about international migrants?

Why are there more male international migrants in the global labour force than women? Which are the countries that have absorbed the most international migrant workers?

Garimella Subramaniam

The story so far:

shortages in host nations and contributing remittances to home countries, International Migrants (IM) continue to make contributions to world economic growth, the fourth edition of 'Global Estimates on International Migrant Workers', released

by the International Labour Organization

addressing labour market

What did the ILO state?

(ILO), said.

In 2022, IMs made up 4.7% (167.7 million) of the global labour force, defined as both employed and unemployed (but available for work); over 30 million more than in 2013. An estimated 155.6 million were employed and 12.1 million unemployed. The share of IM men in the total employment for males globally was

estimated at 4.7% and that of IM women at 4.4%. However, between 2019-2022, the rate of growth dipped annually to less than 1%, influenced among other factors by the pandemic.

What about age and gender?

A higher proportion of IM males were employed – 61.3% out of a total of 102.7 million. Conversely, only 38.7% female IMs were employed out of a total of 64.9 million in 2022. All the same, the number of women IMs has steadily risen ever since the ILO began compiling global estimates in 2015.

One explanation for the smaller proportion of women in the global labour force is their lower representation in the total population of IMs.

At 74.9% (125.6 million), prime-age adult IM workers – those aged between 25 and 54 years, both men and women – constituted the largest majority of IM significantly higher share of 24.3%.

Which are the main host countries?
High-income countries absorbed the largest number of IMs, accounting for 68.4% (114 million people), in key sector

workers in the labour force in 2022. Less

than one out of 10 IMs were below 25.

Way behind the above category, at 9.3%

15-24 years, numbering 15.5 million, in the

were young IM workers, aged between

global labour force. IMs aged between

65 at 3.4%.

55-64 years were 12.5% and those above

Which economic sectors attract IMs?

were concentrated in the services sector,

even higher than non-migrants. Women

IMs held the dominant share in this arena

at 80.7%, as against 60.8% among their

male counterparts. The corresponding

figures for non-migrant women and men

in the services industry were 59.4% and

46.3% respectively. Significantly, the

dominance of IMs in this sector has

remained consistent over the decade.

upwards of 67% between 2013-2022. In

industry, the proportion of IMs was 24.3%

The largest proportion of IMs, 68.4%,

High-income countries absorbed the largest number of IMs, accounting for 68.4% (I14 million people), in key sectors such as services, especially in the provision of care. At about a quarter of this share, 17.4% (29.2 million), were distributed among upper-middle-income countries. For an entire decade between 2013-2022, high-income and upper-middle-income countries have consistently remained primary destinations for IMs.

The share of IM workers in northern.

and that of non-migrants 24.2%. In

agriculture, IMs accounted for 7.4%,

whereas non-migrants were at a

southern and western Europe in the year 2022 was at 23.3%, increasing by less than one percentage point after 2013. In Northern America on the other hand, the share of IMs in the labour force in 2022 was at 22.6%, a more than one percentage point decrease over the same decade. The Arab states accounted for 13.3% of IM workers in 2022, down three percentage points over 2013. A combination of ageing populations, growing demand in the care economy and greater economic opportunities means that high income countries will continue to remain attractive destinations for the bulk of IMs.

The writer is Director, Strategic

Initiatives, AgnoShin Technologies.

THE GIST

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- The ILO's 2022 report highlights that international migrants (IMs) make up 4.7% of the global labor force, with 167.7 million workers.
- While male IMs have higher employment rates than females, the number of female IMs has steadily increased.
- The majority of IMs work in the services sector, especially in care-related jobs, with high-income countries hosting the largest share (68.4%).
- Despite challenges, high-income countries will remain primary destinations for IMs due to aging populations and increasing demand for care workers.

The Hindu-GS2(IR)Page9

The impact of H-1B visas on the tech industry in U.S.

Elon Musk and Vivek Ramaswamy, both immigrants and Mr. Trump's picks to overhaul the U.S. government, are supportive of the skilled foreign worker visa programme

John Xavier

he last week of 2024 didn't exude the holiday spirit for several folks in the tech world. A section of billionaires, politicians, and tech workers were piqued by a specific U.S. immigration policy that allows skilled foreign workers to work in the country.

A verbal mudslinging began after President-elect Donald Trump appointed Sriram Krishnan as his senior policy advisor on Artificial Intelligence (Al). Within days after the announcement, Laura Loomer, a prominent MAGA supporter, wrote rancorous social media posts against the decision, calling Indian immigrants "third world invaders." The right-wing influencer then doxxed Mr. Krishnan, sharing his domicile details secured from the U.S. Federal Election Commission (FEC). While Ms. Loomer apologised for doxxing Mr. Krishnan, she



computer-related occupations.

The impact of H-1B workers

A 2013 study, titled 'STEM Workers, H-IB Visas, and Productivity in U.S. Cities' by economist Giovanni Peri, found that H-IB workers had a positive impact on the wages of native college-educated workers and overall productivity in U.S. cities.

The study examined the influx of foreign STEM workers through the H-HB visa programme and their impact in 219 cities between 1990 to 2010. It noted that H-HB-driven increases in STEM workers boosted wages for native college educated workers. A one percentage point increase in the foreign STEM share of a city's employment led to an increase of around 7-8 percentage points in the wages of native college educated workers.

Also, wages of non-college educated native workers saw a positive, though smaller, increase. These workers experienced a 3-4 percentage point increase in wages for every one percentage point increase in the foreign STEM share of employment. The study estimates that the growth in foreign STEM workers may account for 30% to 50% of aggregate productivity growth in the U.S. between 1990 and 2010. Fast forward to 2024, and the impact of foreign workers on U.S. wages and productivity continued to be positive.

In a follow-up study, titled 'Immigration's Effect on US Wages and Employment Redux,' economists



- In late 2024, debates over the U.S. H-1B visa program, which allows skilled foreign workers, especially from India, to work in the country, intensified following the appointment of Sriram Krishnan, an Indian immigrant, as a senior AI policy advisor to President-elect Donald Trump.
- The discussion, fueled by political figures like Laura Loomer and Bernie Sanders, centers on the impact of foreign workers on U.S. jobs and wages.
- Proponents, including tech leaders like Elon Musk, argue that H-1B workers boost U.S. innovation and productivity, while critics raise concerns about its potential abuse by outsourcing companies.
- Studies show H-1B workers contribute positively to native wages and U.S. economic growth, but there is a push for reform to focus on individual skills rather than corporate interests.

The Hindu-GS3(Defence)Page14

Nine Navies hold joint drills in strategic straits between Indian Ocean and the Pacific

Dinakar Peri

NEW DELHI

The Navies of nine Indo-Pacific countries, including India, are taking part in a multilateral exercise, La Perouse, hosted by France in the strategic straits of Malacca, Sunda, and Lombok, between the Indian Ocean and the Pacific Ocean.

The Indian Navy has deployed its guided-missile destroyer INS Mumbai for the exercise scheduled from January 16 to 24 and led by the French Carrier Strike Group (CSG) headed by the carrier Charles de Gaulle.

The three straits are crit-

provide entry and exit into the Indian Ocean Region. With forays by the Chinese Navy in the region rising, the straits are under increased focus.

Maritime safety

"Strengthening maritime safety will be at the core of this exercise, with the development of interoperability and the ability to act collectively in the event of a maritime crisis, which will contribute to it," the French Embassy in India said in a statement.

On the location of the exercise, it noted that these straits, mainstays of global maritime trade, are subject to numerous hu-

maritime accidents and environmental hazards, illegal immigration, drug trafficking, and natural risks such as earthquakes and tsunamis.

Australia, Canada, France, India, Indonesia, Malaysia, Singapore, the U.K., and the U.S. are part of the exercise.

In an important sign of strengthening interoperability, the statement said, "During this exercise, all navies will train in the use of IORIS, a communication and coordination system dedicated to the exchange of information, documents in order to effectively and collectively face a maritime crisis in a synchronized



- Nine Indo-Pacific countries, including India, are participating in the La Perouse naval exercise, hosted by France from January 16-24 in the strategic Malacca, Sunda, and Lombok straits.
- The exercise, led by the French Carrier Strike Group, focuses on enhancing maritime safety, interoperability, and collective response to crises.
- Participating nations will also train using the IORIS communication system for synchronized coordination during maritime emergencies. The exercise aims to address risks in critical trade routes amid rising Chinese naval activity.

The Hindu-GS3(Science and Tech)Page20

Indian cryptography research gears up to face the quantum challenge

Areas where Indian researchers are working extensively include communication complexity, the amount of communication required to complete a computational task; proof complexity, the computational resources required to prove or disprove statements; and algebraic coding theory.

T.V. Padma

undamental research in cryptography that's used worldwide to facilitate internet banking, e-commerce services, and secure messeging systems is now taking roor in India as well.

The principal goal of those developing or using cryptographic systems is to improve system security. Cryptography – from the English roots of "hidden writing" – is the name for techniques that secure information by converting plain text into ciphertext. It is concerned with the creation and use of encrypted messages that only the sender and the noviver can understand and which a malicious actor who interferes with the communication can't.

Sending secret messages into new. Archaeologists have unearthed day tablets made by the ancient Mesopotamians in which they wrose down cryptic formulae to make ceramic gloses. In the first century III, the Roman dictator Julius Caesar used the oponymous Caesar cipher to relay messages of strategic value to his penerals.

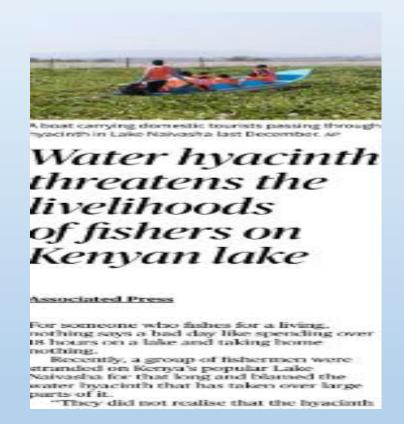
More recently, many Pelish codebreakers fled their country after Adulf Hider invaded it in 1939 to work with reputed British mathematicians, including the father of modern computing, Alan Turing, to crack Germany's famed traigna cryptosystem Turing's work in perfectuar established much of the foundational theory for modern also withhose countries.





- Cryptography research in India is growing, focusing on improving system security for internet banking, ecommerce, and secure messaging.
- Researchers are exploring key areas like public-key cryptography, communication complexity, and quantumresistant cryptography.
- India is also investing in quantum communication technologies, such as satellite-based secure systems, and true random number generation for stronger encryption. Cryptographers are addressing challenges like homomorphic encryption, which allows computations on encrypted data, and preparing for quantum computing's impact on encryption.
- With rising cloud data, encryption is becoming essential for protecting sensitive information against emerging cyber threats.

The Hindu-GS3(Environment)Page20





- Fishermen on Kenya's Lake Naivasha face challenges due to the invasive water hyacinth. Introduced in the 1980s, the plant traps boats and reduces fish populations.
- The water hyacinth is native to South America and was reportedly introduced to Kenya in the 1980s "by tourists who brought it as an ornamental plant

Indian Express –GS3(Environment)-Page 12

dead olive ridley turtles are washing up on Tamil Nadu's

NIKHIL GHANEKAR

NEW DELHI, JANUARY 19

nesting season are not unusual, the large Chennai, according to officials number of turtle carcasses found this early Volunteers of a few other conservation in the nesting period has sparked concern organisations said they have been getting

Dharini, founder of the Tree Foundation, a non-profit which works on sea turtle conservation, said that dead olive ridley turtles olive ridley turtles have washed ashore in bouring Kancheepuram district. "Dead tur-Tamil Nadu, particularly in Chennai. Experts tles have been reported in Neelankarai, have estimated that so far, between 300 and Besant Nagar, and Kovalam, right up to areas of Kancheepuram district," she said.

Department said that they

were still collating exact data

on the mortalities. Deaths have also been reported from Olive ridley turtle hatchlings on the ends in March. Although deaths during Pulicat in Thiruvalluvar district, north of beach in San Jose del Cabo, Mexico.

> calls from citizens in and around Chennai, What is the reason behind the deaths? not uncommon during their mating season. tles, he said.

according to experts.

Department of Ecology and Environmental to drowning, Dharini said.

areas, more trawlers would have been sta-

The turtles mate near shore areas and fe-Besides, since turtles are omnivorous, eral coastal states on India's east coast and

get trapped in long fishing nets of commer- Post-mortem of a carcass has revealed Pradesh and Tamil Nadu. cial trawlers as bycatch — the unintentional lesions on the lungs, indicating suffocation, capture of non-target marine life — and die, Manish Meena, wildlife warden of Chennai beaches witness the arrival of lakhs of fesaid. Carcasses also had bulging eyes and male olive ridley turtles every year. They K Sivakumar, professor at the swollen necks, which indicated death due make nests in the sand using their flippers

"Olive ridley turtles have to swim up to the comparative analysis of the fish catch land-with sand to prevent predation and return sea surface to breathe. If they get tangled in ings from Chennai's harbours this year with to the sea.

Olive ridley turtles lay eggs across sev- the sea.

males arrive in small batches for nesting on they might feed on fish in areas where the west coast. However, mass nesting takes Tamil Nadu's beaches. As a result, they often fishing vessels operate, Sivakumar said. place in Odisha, followed by Andhra

Sciences, Pondicherry University, said, Swakumar suggested there should be a After laying the eggs, they cover the nest

the corresponding period in previous years, to After 45-60 days, thousands of hatch-This year, however, the increase in the ascertain if there has been a spike in fish catch. Ilings make their way to the ocean. At nestnumber of deaths could be because of a He also said that authorities ought to strictly ing sites where human disturbance and large availability of fish close to the turtle enforce the use of turtle-excluding devices predation are likely, Forest Departments gathering areas, according to Sivakumar. that are fitted into nets, allowing incidental create hatcheries. The eggs are retrieved Due to more fish near the turtle gathering bycatch to escape through a flap in the nets. from the nests with care and are placed in hatcheries. After the eggs hatch, the juvereporting sightings of turtle carcasses from Finding carcasses of olive ridley turtles is tioned there, leading to the deaths of tur-



- Over the past two weeks, numerous dead olive ridley turtles have washed ashore in Tamil Nadu, particularly in Chennai.
- It gets its name from the olive green color of its heartshaped shell.
- It is among the **smallest of the world's sea turtles**.
- It is found throughout the world primarily in the tropical regions of the Pacific, Indian, and Atlantic oceans.
- These turtles are best known for their unique mass nesting called **Arribada**, where thousands of females come together on the same beach to lay eggs.
- **Odisha** is the largest mass nesting site for Olive Ridleys in the world.
- **Protection status:** Wildlife Protection Act, 1972:

Schedule 1

IUCN Red List: Vulnerable

CITES: Appendix I

Indian Express –GS2(Governance)-Page 12

Abetment to suicide: Why SC advised caution in using the provision

AJOY SINHA KARPURAN

NEW DELHI, JANUARY 19

THE SUPREME Court last Thursday high- Section 107 of the IPC, which is the same as lighted the need to sensitise investigation Section 45 of the Bharatiya Nyaya Sanhita, agencies and courts in abetment of suicide 2023 (BNS

A Bench of Justices Abhay S Oka and K V (ii) engages with one or more others in a connote, stating he was being harassed by the both the trial court and HC rulings. A Bench lice and the courts should avoid "unnecesposition that he/she committed suicide" Viswanathan stated: "It is time that investi-spiracy for the doing of that thing, or (iii) in-accused bank manager to repay gating agencies are sensitised to the law...so tentionally aids, by any act or illegal omis- his loans. Based on this inforthat persons are not subjected to abuse of sion, the doing of that thing.

process of a totally untenable prosecution". To prove abetment of suicide, one has to case against the bank manager It further added that "While the persons effectively show that the accused directly in-under Section 306 of the IPC. ployed against individuals only to assuage 108 BNS) can be up to 10 years imprisonment cused on February 28, 2023. the immediate feelings of the distraught along with a fine.

cused of abetting the suicide of a man who 2022 (latest available data).

Abetment of suicide law

(i) instigates any person to do that thing, or son died by suicide in 2022. He left behind a approached the Supreme Court challenging retirement scheme. The SC said that the pointended to push the deceased into such a

allegedly took his own life after he was un-

It was 54.2% for cognizable offences – which there was a prima facie case as the deceased of spicide includes abetment to suicide - where an ar- in the suicide note "has clearly made allega-The term "abetment" is defined under rest can be made without a warrant.

mation, the police registered a

involved in genuine cases where the thresh-stigated or aided the deceased to die by sui-Once the investigation was complete, a manager, highlighting that "hyperboles and and the accused have an official relationship old is met should not be spared, the provi-cide. The punishment for abetment of sui-trial court in Madhya Pradesh framed informal exchanges without anything more (such as between an employer and em-the accused by his acts and by his continusion (S306 IPC). S108 BNS) should not be decide provided under Section 306 IPC (Section charges under Section 306 against the ac-should not be glorified as an instigation to ployee), and both the courts and prosecutous course of conduct creates a situation

trial court proceedings.

The bank manager challenged the order The court also criticised the approach of show that the accused intended to cause the other option except to commit suicide, the According to the National Crime Records on framing of the charges before the Madhya trial courts, stating that the court "should not suicide The statements were made as the court Bureau's annual Crime in India report, the Pradesh High Court, stating that the ingrediadopt a 'play safe' syndrome to mechanically deared charges against a bank manager acconviction rate in such cases was 17.5% in ents for abetment under Section 107 were frame charges even when investigating

rate for all crimes under the IPC was 69.8%. and allowed the trial to proceed. It held that The standard for abetment

edly and the deceased was mentally tortured quashed a case of abetment in which a sales-under Section 306 IPC, including specific inby the present applicant on the pretext of re-person died by suicide after alleged harass-tent — it "requires an active...or direct act ment from senior officers in his company, which led the deceased to commit suicide cases under Section 306 of the Indian Penal A person abets the doing of a thing, if she According to the police, the deceased perof Justices Oka and Pankaj sary prosecutions" in cases of abetment of This standard was upheld in Ude Singh Mithal ordered a halt to the suicide stemming from the workplace.

> On January 15 this year, the Manoj Misra stated that the bar for proof direct act(s) of incitement to the commission apex court discharged the bank would be higher in cases where the deceased of suicide'

agencies have shown utter disregard for ment by the accused" to prosecute someone for abetment to suicide.

be found in other SC cases as well.

In M Mohan v The State (2011), the SC set In October 2024, the Supreme Court a high bar for proving abetment of suicide

State of Harvana (2019) as well, where the SC A Bench of Justices J B Pardiwala and stated: "There must be a proof of direct or in-

ing agencies must see if there is evidence to which leads the deceased perceiving no

indianexpress.com/explained



- The Supreme Court emphasized the need for proper application of Section 306 IPC (abetment of suicide), urging courts and investigation agencies to avoid unjust prosecutions.
- The case involved a bank manager accused of abetting a suicide over loan repayment issues. The Court discharged the charges, highlighting that informal exchanges should not be considered as instigation.
- It also set a high standard for prosecuting abetment of suicide, requiring clear evidence of intent and direct acts leading to the suicide. The Court stressed that courts should avoid mechanical charge framing and focus on realistic evidence.