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USING AI FOR AUDIT TECHNIQUES

CONTEXT: The Comptroller and Auditor General of India (CAG) warns against excessive reliance on AI in auditing, citing accuracy concerns and emphasizing ethics.

BACKGROUND: The CAG conducts diverse audits, but AI's challenges include transparency, objectivity, and bias prevention. Ethical, inclusive AI enhances audit credibility. Accurate, timely, and integrity-maintained data are crucial; vigilance is needed when using unauthorized sources like social media due to inherent bias risks.



India needs AI regulation

- **Global Standard:** The EU AI Act sets a precedent as the world's first comprehensive AI regulation, prompting India to establish similar standards for ethical AI use.
- **Copyright and Content Ownership:** AI-generated content poses potential copyright challenges, necessitating regulations to protect

intellectual property rights in India.

- **Bias Mitigation:** India must address AI bias, as seen in European discussions, by implementing measures to ensure fairness, transparency, and accuracy in AI systems.
- **Ethical Considerations:** Elon Musk's 'Truth GPT' highlights the importance of harmonizing technological progress with ethical concerns, a principle India should embrace in its AI legislation.
- **International Competitiveness:** Following the UK's aim to be a hub for AI safety regulation, India needs AI laws to compete globally and foster responsible AI development and adoption.

Challenges before the CAG

- **Challenges for CAG in Auditing AI:** AI regulation and data standardization are essential for effective audits due to diverse data sources and platforms.
- **Data Integration:** Government entities should synchronize data platforms to facilitate audits and prevent reliance on unauthorized data sources.
- **Digitalization Efforts:** A web-enabled IT application, "One Indian Audit and Accounts Department One System," will digitalize audits, except for defense, from April 1, 2023.
- **International Audit Framework:** The SAI G20 conference emphasizes the need for a common international audit framework for AI-related matters.
- **Capacity Building and Ethical Focus:** Auditors need training in AI technology, ethics, transparency, and collaboration with AI specialists for comprehensive AI audits and risk assessment.

Global organizations have developed AI auditing frameworks, with Data Protection Impact Assessments being legally required for AI systems processing personal data. Auditors must assess risks, controls, and governance for effective operation.

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INTERNAL SECURITY

NEWSClick FOUNDER ARRESTED UNDER UAPA

CONTEXT: The Delhi Police arrested Prabir Purkayastha, founder and Editor-in-Chief of news portal NewsClick and its Human Resources head Amit Chakraborty in an alleged terror case.

A total of 46 “suspects”, including nine women, were questioned and their phones, laptops and devices seized for further examination. Police raided the homes and offices of journalists, authors, academics, contributors and a satirist associated with the news portal in a terrorism case. The journalists were asked questions about the Delhi communal riots and the CAA agitation of 2019-20, the farmers protest of 2020-21 and whether they used encrypted messaging applications such as Signal on their phones.

The Special Cell of the Delhi police had registered a first information report (FIR) in the case on August 17 under Sections 13, 16, 17, 18 and 22 of the anti-terror Unlawful Activities (Prevention) Act and Sections 153A and 120B of the Indian Penal Code (IPC) for promoting religious enmity between groups and criminal conspiracy, respectively. The FIR was registered days after The New York Times published a report on August 8 that the portal received money from American businessman Neville Roy Singham to spread Chinese propaganda.

The allegations are already under investigation by the Enforcement Directorate (ED) since 2021. The ED has accused the company of money laundering, claiming that the portal received ₹77 crore as foreign remittance between the years 2018-21.

ECONOMICS AND DEVELOPMENT

WORLD BANK KEEPS INDIA FY24 GROWTH FORECAST AT 6.3% ON WANING DEMAND

CONTEXT: The World Bank retained India's growth forecast at 6.3% for the year 2023-24.

The World Bank in April too projected 6.3% GDP growth for 2023-24. India recorded 7.2 % growth in 2022-23. According to the RBI's latest forecast, the economy would grow at 6.5 % in 2023-24.

The World Bank in its latest India Development Update expect service sector activity to remain strong with a growth of 7.4 % and investment growth was also projected to remain robust at 8.9 %.

India was one of the fastest-growing major economies in 2022-23 at 7.2 %. India's growth rate was the second-highest among G20 countries and almost twice the average for emerging market economies.

The average level of female labour force participation rate for emerging market economies is about 50 % and it is 25 % for India. A higher female labour force participation rate is necessary to ensure India to become a high-income country.

ECONOMICS AND DEVELOPMENT

MANUFACTURING PMI SLIPS TO 5-MO. LOW

CONTEXT: The seasonally adjusted S&P Global India Manufacturing Purchasing Managers' Index (PMI) slid from 58.6 in August to 57.5 in September.

Manufacturers cited higher labour costs combined with upbeat business confidence and buoyant demand to raise output charges at a sharper pace than the long-run average. The input cost inflation slowed to the lowest in more than three years.

Global economic growth and the PMI



Data compiled August 2023 including PMI data to July 2023.
PMI (Purchasing Managers' Index) value of 50 = no change on prior month.
Source: S&P Global PMI with J.P. Morgan; S&P Global Market Intelligence.
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India's manufacturing industry showed mild signs of a slowdown in September, primarily due to a softer increase in new orders which tempered production growth. Both demand and output saw significant upticks and manufacturers held a strongly positive outlook for production.

'Global slowdown hits engineering exports'

Overall exports of engineering goods from India have been affected by the global slowdown. Overall engineering exports during April to August in 2023 slid 4.55 % y-o-y to \$ 44.62 billion. The engineering exports to Russia surged 178 % to \$ 568.41 million during April to August of fiscal 2023-24. Major trading partners like the U.S. and European countries have been affected by the global slowdown. The Russia-Ukraine conflict has also been ongoing, while China is also experiencing a slowdown. Engineering Export Promotion Council (EEPC) is of the view India should sign free trade agreements with non-traditional markets like Latin America and Africa to boost engineering exports.

Growth of new export orders softened from August's nine month high, but remained sharp. Firms noted new business gains from clients in Asia, Europe, North America and the Middle East. Factories' output rose at the slowest pace in five months, but was still above the long-term average and firms exuded the highest optimism about business prospects a year ahead so far in 2023. This spurred a pick-up in hiring growth over August levels at a pace that S&P Global reckoned was strong by historical standards. Together, these indices point towards a favourable trajectory for the Indian manufacturing industry.

SCIENCE AND TECHNOLOGY

NOBEL WINNERS ATTRIBUTED TO COVID-19 mRNA VACCINE SUCCESS THIS YEAR

CONTEXT: The 2023 Nobel Prize for Physiology or Medicine was awarded to Katalin Karikó and Drew Weissman for their pioneering work on mRNA vaccine technology, crucial during the rapid COVID-19 vaccine development.

HIGHLIGHTS:

- The 2023 Nobel Prize in Medicine recognizes the enduring impact of mRNA technology in saving lives and preventing hospitalizations.
- The Nobel Prize for Medicine is awarded to discoveries benefiting humanity, and mRNA's contribution is undeniable.
- This Nobel Prize is significant for honoring women in science, with Katalin Karikó as a notable recipient.
- Karikó's early fascination with mRNA paved the way for groundbreaking research in the 1980s.
- Despite initial challenges in mRNA-based therapy development, Karikó and immunologist Weissman persisted in their efforts.
- Through years of research and mRNA modifications, they overcame obstacles, enabling advancements in vaccine and therapy development.
- The breakthrough in 2019, using mRNA to combat COVID-19, marked a historic achievement, saving countless lives and reshaping science.

Challenges Surrounding Nobel Prize for mRNA COVID Vaccines

Government-funded research often lays the groundwork for drug and vaccine development. Companies then profit from these innovations. While this model encourages innovation and competition, it also places a double financial burden on consumers and raises concerns about profit motives during crises, as seen

with COVID-19 vaccine distribution challenges.

COVAX

- COVAX, designed to support low-income nations with vaccine access, fell short of targets.
- India, Russia, and China exported vaccines, but quality and manufacturing issues arose.
- African countries faced vaccine wastage due to near-expiry exports.
- The World Health Organization encouraged expired dose use, highlighting communication challenges.
- Many nations lacked community engagement and risk communication infrastructure.

Corbevax

- The 2023 Nobel Prize for Physiology or Medicine awarded to Katalin Karikó and Drew Weissman for mRNA vaccine technology.
- The mRNA platform's journey involved licensing patents, collaborations, and private sector involvement.
- Public funds often support early research stages, but profits can benefit private companies.
- Vaccine distribution during the pandemic faced challenges, including export restrictions and supply issues.
- Corbevax, an open-source vaccine, offers an alternative model focused on low-cost global access without patent limitations.

The COVID-19 mRNA vaccine saga highlights the challenge of balancing profit and altruism in science. Administrators' decisions affected its accessibility, and the 2023 Nobel Prize narrative should acknowledge these realities.

SCIENCE AND TECHNOLOGY

TRIO AWARDED NOBEL PRIZE FOR VISUALIZING ELECTRONS

CONTEXT: Nobel Prize in Physics awarded for research using ultra-fast light flashes to study electrons in atoms and molecules.



BACKGROUND: Pierre Agostini, Ferenc Krausz, and Anne L'Huillier received the Nobel Prize in Physics for their attosecond pulse technique, enabling the study of rapid processes within atoms and molecules with applications in electronics and medical diagnostics.

HIGHLIGHTS

- **Nobel Prize in Physics:** Three scientists awarded for their work in attosecond physics, revealing electron behavior with precision likened to high-speed photography.
- **Discovery in Infrared Light:** In 1987, L'Huillier found multiple light overtones using infrared laser light through noble gases.
- **Isolating Attosecond Light Pulses:** Agostini and Krausz's early 2000s experiments achieved light pulses lasting only a few hundred attoseconds.
- **International Recognition:** The Nobel laureates hail from the U.S., Germany, and Sweden, emphasizing the global impact of their research.
- **Gender Diversity:** L'Huillier, the fifth woman to win the Physics Prize since 1901, encourages young women to pursue careers in science.



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