

Telangana's economic growth lauded: Per Capita Income soars, highest among major States

Hyderabad: In the decade since Telangana's formation in 2014, the State's economic growth has earned widespread recognition, with its Per Capita Income (PCI) more than doubling, from Rs 1,24,104 in 2014-15 to Rs 3,47,299 in 2023-24. Telangana's PCI is now the highest among major Indian states, far surpassing the national average of Rs 2.12 lakh for 2023-24. This growth rate is the fastest among southern States as well. Highlighting Telangana's economic strides, Saurabh Mukherjea and Nandita Rajhansa's new book 'Behold the Leviathan: The Unusual Rise of Modern India' attributes much of this success to Telangana's strategic investments and reforms. Mukherjea, founder of Marcellus Investment Advisors, commends Telangana for achieving the PCI doubling milestone within just six years, a phenomenal achievement by any standard. The growth story under former Chief Minister K Chandrashekhara Rao is often cited as a model for rapid urban and economic development, particularly in Hyderabad. Experts believe a third term under Chandrashekhara Rao could have continued this trajectory, propelling Telangana to even greater heights in economic performance and development.

Certified Finance Planner D Muthukrishnan, who regularly posts on the fiscal performance of different States, is one of those who believe this. "Saurabh Mukherjea in his latest book states that Telangana doubled its per capita income in the last 6 years. Phenomenal achievement by any standard. As I've shared earlier too, Telangana under KCR for 10 years was a great growth story. We need more such stories from many states. And it is really surprising people of Telangana voted KCR out. A third term for KCR would have propelled Telangana to greater heights. Ten year growth of Telangana, more so Hyderabad needs to be a case study," he posted on X.

The Union government statistics indicate that just three States – Gujarat, Tamil Nadu and Telangana, maintained an annual growth rate of around 8 per cent in last two decades. Experts believe that these States have the ability to record a double-digit growth rate in coming decade. Under the BRS regime, Telangana's Gross State Domestic Product (GSDP) consistently outpaced India's GDP growth. Between 2014 and 2023, Telangana recorded an average annual GSDP growth of 12.7 per cent, compared to India's 10.5 per cent. In



2022-23, Telangana's GSDP contribution rose to 4.8% of the national GDP, up from 4.0 per cent in 2014-15. In 2023-24, Telangana's GSDP grew by 11.9 per cent, the third-highest rate nationwide, surpassing India's GDP growth by 2.4 percentage points. The State's GSDP is projected to grow by 12.5 per cent in 2024-25 over

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Diwali fireworks push AQI into risky zones



Hyderabad: The morning air in Hyderabad on Friday carried more than a whiff of Diwali's lingering celebrations; it held a dense shroud of pollution as the city's air quality deteriorated significantly following the grand festivities. According to data from the Central Pollution Control Board, the Air Quality Index (AQI) has seen a sharp rise. As of 8 a.m. on Friday, key areas registered AQI levels deep within the 'moderate' and 'poor' categories, with a few nearing the dangerous 'very poor' threshold. Bollaram recorded a troubling

AQI of 162, and ECIL Kapra soared to 188, the highest in the city, categorized as "moderate" and creeping close to "poor." Kompally followed with an AQI of 184, while Sanathnagar and Zoo Park were not far behind at 159 and 153 respectively. Other areas like Ramachandrapuram (148), Kokapet (148), Nacharam (122), and New Malakpet (114) painted a grim outlook for sensitive populations. Meanwhile, the night of Thursday witnessed an alarming uptick in pollution levels, as evidenced by evening AQI readings across various

localities. By 10 p.m., Zoo Park AQI had climbed to 153, Sanathnagar saw a level of 95 earlier in the evening but experienced fluctuations, and Patancheru dropped from 114 to a slightly lower 98 as the night progressed. Zoo Park experienced an AQI jump from 148 at 1 p.m. to 153 by 10 p.m. ECIL Kapra, starting from 117 in the afternoon, peaked at an alarming 164 by nightfall. In Pashamylaram, the situation shifted from an afternoon AQI of 116 to a late evening level of 105. Kompally showed a dramatic increase, recording 81 at 1 p.m., then peaking at 129 by 10 p.m. Areas like Nacharam and Kokapet mirrored these

trends. The city's post-Diwali pollution levels, while concerning, show a relatively moderate impact compared to some of India's most polluted urban centers. On Thursday, Hyderabad recorded an average AQI of 99, categorized as "satisfactory," according to the Central Pollution Control Board. However, the situation was far more dire in cities like Delhi, which faced an AQI of 328, putting it firmly in the "very poor" category. Similarly, Gurugram's AQI reached 296, while Chennai struggled with a "poor" reading of 213. Bengaluru, on the other hand, managed a moderate AQI of 109.

Marijuana worth Rs 7 crore seized at Hyderabad airport

Hyderabad: Two international flyers who attempted to smuggle in drugs valued at Rs.7 crore hidden in cornflakes packets, were intercepted and arrested at the Hyderabad airport. Acting on specific inputs, the Directorate of Revenue Intelligence (DRI) seized the drugs, around 7.09 kg of hydroponic weed, from two Indian passengers who arrived from Bangkok at the Rajiv Gandhi International Airport here.

The officials put the value of the drugs illicit market as Rs.7 crore. After intercepting the passengers, a systematic search of their check-in luggage revealed 13 vacuum-packed packets inside cornflakes packets and a field test kit revealed it to be hydroponic weed. The passengers were arrested under the provisions of the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985 and sent to judicial custody.

The importance of Bengaluru's lakes and their associated land

Bengaluru city has come into focus recently due to the flooding caused by unexpected, excess rains from the north-east monsoon. The flooding has taken place at diverse locations across the city. This has in turn led attention to the causes of flooding which many ascribe to the disturbed or encroached canals that carry rain water including storm water drains and rajakaluves or canals that connect lakes to each other. However, what is lost in this discourse is the land that is downstream of each lake in the cascading chains of lakes spread across the city also had a role in channelling rainwater down the slopes of the three valleys that Bengaluru has. How this land has lost that role due to it getting built up on and what caused the large scale conversion of that land is the unspoken history of the lake system of Bengaluru. Located on an average 920 metres above sea level on a plateau, there are three valleys in Bengaluru, along which a cascading series of lakes or manmade irrigation tanks have been constructed over centuries. These irrigation tanks or keres are a part of the larger history and culture of water management in South India. When these lakes or keres were constructed in the past, there was an intricate management system which tied it to lands around it, which we could call associated lands. There were two types of such lands, the wetlands or moist lands downstream of the kere locally called gadde jameen and the dry lands of which the most common type were the common grazing lands or gomala lands.

Maintenance of the kere or the lake was done locally by different communities living in villages near the lakes. For example there was a community called the Neeruganti who managed the canals or rajakaluves that carried overflow from one lake to the next lake and in the process channelled water into the moist lands downstream. These moist lands were used to cultivate various crops including rice and sugarcane. Located in the bundh or embankment of the lake were sluice mechanisms, smaller versions of those seen in dams, to regulate the flow of water into the cultivated moist lands. The bundh was maintained by yet another community historically. All of these maintenance systems were recorded by British gazetteer B.L Rice in the Mysore Gazette in 1897 and was further encountered by this writer when he researched the lakes of Bengaluru. Connected to this maintenance system of the lakes was a land tenure system called the Inam system. Under this system, lands associated with the lakes were granted to people living in the village based on the livelihoods that they pursued.

The various inam tenure lands included service inams, thotti/neeruganti inams, and poojari inams. Service inams included land granted to those who provided services to the village such as hair cutting, disposal of carcasses, playing of the tamte, a drum during announcements and special occasions. Thotti/neeruganti inams enabled those who maintained the kere and the canal system to be granted land in return for their services. Poojari inams were given to the priestly class. Thus



land was granted to various communities of people providing various services in the village. Land thus granted also included the moist land downstream of the lake commonly called wetlands or gadde jameen, upon which cultivation took place.

Abolition of inams The abolition of the inam system took place through various legislations, starting from 1954 and culminating in the Karnataka Certain Inams Abolition Act, 1977. Under these acts it was deemed that holders of inam lands shall be entitled to be registered as occupants of these lands. This regularisation of inam lands including moist lands or gadde jameen downstream of the lakes meant that these lands were private property. The act exempted from private ownership certain common lands such as tank beds, the earlier mentioned gomala or grazing lands. This is what differentiates the lake system and its unique wetland system from the commonly understood wetlands which are a transitional zone between water bodies and dry lands. They are seen more often in naturally formed lakes and are considered common land to be protected and not privately owned. The Ramsar convention is an international treaty put in place to conserve wetlands across the world in 1971. Several wetlands in India are designated as Ramsar sites, which include Ashtamudi Lake in Kerala, Ranganathittu Bird Sanctuary in Karnataka, and Loktak Lake in Manipur. Land use history

The lakes in Bangalore and the moist or wetlands are not covered due to their specific economic and land use history. This is further established by The Wetlands (Conservation and Management) Rules of

2017 of the Indian government which does not include paddy fields or other areas used for such commercial activity as wetlands. This all brings us back to the wetlands or moist lands of Bangalore which were historically privately owned and cultivated upon. As the city urbanised there was a transition and transformation of these lands as well. Pressure from real estate meant that these lands were sold and converted into built up land. The author has seen this happen with such lands downstream of lakes such as Bellandur and Varthur, which in the mid-2000s were still cultivated upon but now are the location of large apartment complexes. This approach to developing such land downstream of the lakes which defied the earlier agrarian logic of not building in the channel between two lakes in a lake series, has meant that water that used to be channelled earlier through the cascading lake system via rajakaluves or canals as well as the downstream moist lands, is now limited to the

canals. Rescue workers move stranded residents of an apartment in a boat after it was flooded due to heavy rains, at Yelahanka Kendriya Vihar, in Bengaluru on October 22, 2024. Rescue workers move stranded residents of an apartment in a boat after it was flooded due to heavy rains, at Yelahanka Kendriya Vihar, in Bengaluru on October 22, 2024. | Photo Credit: MURALI KUMAR K Pressure on canals This pressure on the canals and various encroachment of them has meant that in a situation of excess rain, which we are seeing more often now due to climate change, the city will be prone to flooding. More so, those apartment and commercial complexes built in either lake beds or in moist lands downstream of lakes. Recognising this unique history of the lake system in Bengaluru and its associated lands is key in understanding the flooding that we are seeing more often than not in the last few years.

Cyberabad Police summon Raj Pakala for questioning

Hyderabad: Raj Pakala, whose residence was raided late on Saturday night followed by searches on Sunday, was summoned by the Cyberabad Police for questioning. He was asked to appear before the Mokila police on Monday. The notice was issued under Section 35 (3) of the BNSS in connection with the cases registered under Sections 25, 27 and 29 of the NDPS Act, and Sections 3 and 4 of the TS

Gambling Act on Sunday. If he failed to attend or comply with the terms, he was liable for arrest under Sections 35(3), (4), (5) and (6) of the BNSS, the notice stated. In the notice, the police claimed that there were reasonable grounds to question Raj Pakala to ascertain facts and circumstances from him, with regard to the ongoing investigation into the cases registered against him.

Will rebuild Haryana in line with PM Modi's Viksit Bharat-2047 vision: CM Haryana

Chandigarh (JAG MOHAN THAKEN), November 1: Haryana Chief Minister, Nayab Singh Saini said the present state government is dedicated to realizing the vision of an empowered and progressive India, as envisioned by our revolutionary heroes. Emphasizing the importance of unity and collaborative effort, the Chief Minister affirmed the present government's resolve to rebuild Haryana in alignment with Prime Minister Narendra Modi's ambitious Viksit Bharat goal by the year 2047. The Chief Minister while addressing a gathering on Friday in Gohana, on the occasion of Haryana day, extended greetings of Vishwakarma Jayanti, Haryana Day, Diwali, Bhai Dooj, and Gopashtami.

C M Saini said, "The present state government will lead a new era of development in Haryana. We will fulfil all the promises made in the election manifesto as pledged, advancing the state's 2.80 crore citizens along a path of inclusive growth." The Chief Minister said that the BJP government in Haryana, elected for a third consecutive term, will work with commitment to meet the aspirations of 2.80 crore citizens under the guidance of Prime Minister, Narendra Modi. He said that officers have been directed to expedite projects in line with the promises made in the election manifesto. As Haryana completes 58 years of progress, all communities deserve congratulations for their contributions, said Nayab Singh Saini.

The Chief Minister said that he also acknowledges the role of party workers and voters in reinforcing their trust in the BJP, leading to a historic victory. He said that under the robust system established by former Chief Minister, Manohar Lal, his double-engine government will operate at full speed. He said that during the elections, Congress spread misleading information



on unemployment and attempted to delay the recruitment of thousands of youth, revealing an anti-youth mindset. Through the efforts of our dedicated workers, people understood that the BJP is committed to securing the future of young people without favouritism and parchi-kharchi, and the public, especially the youth, have shown their trust in our government. On this occasion, BJP state president Mohan Lal Badoli said that under Chief Minister Nayab Singh

Saini's leadership, the BJP government will aim to fulfil the promises made in the assembly manifesto. With decisive actions such as providing permanent employment to 24,000 youth, implementing Supreme Court decisions on reservation for the Deprived Schedule Caste (DSC), and offering free dialysis services in hospitals, the government has demonstrated an unstoppable momentum. The Chief Minister is advancing Prime Minister Narendra Modi's policies and working to build a new

Haryana, said Sh. Mohan Lal Badoli. Cooperation Minister, Dr. Arvind Sharma said that through schemes named after Bhagwan Vishwakarma, Prime Minister, Narendra Modi has created a conducive environment for making youth self-reliant. With steps such as providing MSP for crops and measures to benefit the underprivileged, Chief Minister, Nayab Singh Saini has won the hearts of the people. Today, the trust of all 36 communities in the state is strong in this government.

The rise and disintegration of the mighty Maratha empire

The ancient epic Mahabharat tells us that Lord Krishna's consort Rukmini was a daughter of the king of Vidarbha, the present-day region around Nagpur in north Maharashtra. It is also this region that has thrown up the oldest archaeological evidence at Daimabad near the river Godavari in Ahmadnagar district. Excavations here have shown evidence of human habitation going back to 2200 BCE, and yielded Chalcolithic copper-bronze rings, houses with courtyards and mud walls, along with arrowheads made of bone. According to a widely accepted linguistic theory Maharashtra is derived from Maha (great) and Rastrikas who were a local dynasty or tribe ruling over the Deccan region. Spanning a huge area between the Deccan and the western coast, the region has been geopolitically important since the last more than two thousand years. Various dynasties such as the Satvahanas, the Western Satraps, the Guptas, the Rashtrakutas,

Chalukyas and the Yadavas ruled over the region before the advent of the Sultanate period at the beginning of the second millennium CE. Before the establishment of the Mughal empire in the 16th century the region had seen the rise and fall of at least two major kingdoms, the Delhi Sultanate under Mohammad bin Tughlaq who, fearing a Mongol invasion, shifted for a brief period the capital from Delhi to Daulatabad, but his dynasty and the kingdom collapsed in 1347 CE. And, the local Bahmani kingdom with its capital at Gulbarga which also ended after ruling the region for about 150 years in 1518. The end of the Bahmani sultanate triggered a process of decentralisation under which five smaller kingdoms arose in the Maharashtra - Deccan region: these were the five Deccan Sultanates: Nizamshah of Ahmadnagar, Adilshah in Bijapur, Golkonda's Qutubshah, Bidar's Bidarshah and

Imadshah at Elichpur (Berar). Mumbai and the surrounding region were ruled by the Sultanate of Gujarat until the Portuguese took over its control through the Treaty of Bassein in December 1534. The five Deccan Sultanates were engaged in constant warfare with each other. Each of them had a diverse origin and except for the Golconda kingdom, all were founded by erstwhile slaves, two of them Hindu (Ahmadnagar and Berar), while the founder of the smallest sultanate at Bidar may have been a Georgian slave. Notably, the five warring sultanates united to deal a decisive blow to the Vijayanagar empire at the Battle of Talikota in 1565, which eventually led to its demise soon after. The five Sultanates themselves were conquered by the Mughal empire through long campaigns that lasted till 1686-87 with emperor Aurangzeb personally leading some of them. However, a new local power was beginning to grow under the leader-

ship of Shivaji Bhonsle, who was born in 1630 to Shahji Bhonsle, a military commander who served the Ahmadnagar and Bijapur sultanates, as well as the Mughal empire at different points in his life. Shahji was a jagirdar of Pune and received the jagir of Bangalore after Kempe Gowda III was defeated by Bijapur forces in 1638. If the Mughals had sought to centralise their rule by decimating or incorporating the Deccan Sultanates, Shivaji, in defiance of his father, was intent on carving out a separate state from Bijapur, his father's employer. This process of state formation was unprecedented because it was one of the few such Hindu kingdoms to take birth in a time when the Mughal empire held sovereignty over much of India. With political astuteness, cunning and use of guerrilla tactics Shivaji managed to lay the foundation of the Maratha kingdom after winning a spate of battles against both the sultanates and Mughals.

The economics behind the demise of 'it's the economy, stupid'

Almost the entire world is watching whether or not the US will re-elect Donald Trump as its president. Many commentators agree that the good old polling models might not be of use anymore to capture the state of play in what is anyway a polity with extremely skewed consequential pockets. This column has no intention, nor the intellectual wherewithal, of weighing in on what could happen in the US elections.

What it does want to talk about is a more broad-based ongoing shift in politics in advanced countries where mainstream political economy consensus is moving away from the two-pronged economic order which has guided the western hemisphere, and by extension, the global economy for many decades now. Let us look at them one by one. China's export-led growth has been the defining feature of global capitalism in the last four decades. While China became the world's second largest economy as a result of this dynamic, it also played an important role in stabilising the global economic system by one, providing cheap consumption goods to the consumers in western economies and profits to their capitalists, and also financing a large part of the advanced country, especially US deficits by holding large dollar reserves.

Goods, to be sure, were not the only things which saw a large increase in cross-border mobility. Both in Europe and North America, there has also been a lot of in-migration, both of the blue-collar and white-collar variety, which has helped keep unskilled labour costs in check and allowed these countries to reinvent their comparative advantage in cutting edge and high value manufacturing and service sector enterprises. Minus immigration, countries such as US would have been a demographic and hence economic decline by now. Both of these developments seemed like non-zero-sum games where no side had to end up as the loser for a long time. It could very well have been, if the political leadership of the advanced capitalist world had some foresight and tried a sincere redistribution of the surpluses generated by such trade-off in goods and labour markets. But this was not to be. The politics backing this economic consensus started to fracture in the aftermath of the growth haemorrhage which followed the global financial crisis of 2008 and eventually gave way because of a tone-deaf elite failing to appreciate the economic precarity and pessimism of the local underclass in the advanced countries. 2016 victories for Trump and Brexit were the first warning shots that the ground was shifting on this front. One could very well argue that 2016 Brexit and Trump victories have had very different results.

In England, the Labour Party managed one of its best ever victories in the elections held this year as the economy continues to struggle and the Conservative Party is held responsible for it. Whether Labour can clear the mess and get growth going once again, is a much more difficult question. In the US, however, because Trump lost in 2020, he has been able to



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exploit the inflation-triggered discontent and managed to get within striking distance of winning the election again. Whether the huge fiscal spending (and deficit) driven stimulus to the economy can save the Democrats (like it did in the mid-term) remains to be seen.

What is the larger point here?

Politicians across the spectrum now understand that there is no going back to the pre-2016 political economy arrangement in the advanced capitalist world. The economic pain is real and they must be seen as doing something to reverse it. But nobody knows what is the best way to solve this problem. The fiscal conservatism, especially around sustainable debt, seems to be giving way. There is a resurrection of industrial policy and even economic nativism at the cost of what used to be a rules-based multilateral trading order. Even the absolutely necessary consensus on reducing carbon emissions seems to be the most fragile it has been in many years.

However, the problem is none of these policy departures will go very far in alleviating the growth and economic precarity problems. It is this economic policy defeatism which is leading to an overreliance on the civic and the social rather than economic in the political discourse of the players who would still want to keep things as close as possible to the pre-2016 economic order and also those who want to gain the most from its failure to protect, let alone, enhance, mass economic well-being. One side likes to call the other fascist, and the other attacks its adversary as being too weak to undo the damages of trade and immigration to the local population's mate-

rial interests. The irony is, neither of these accusations are true. Fascism, in its purest form, as it existed in places like Nazi Germany was not just bigotry and violence against a certain social class. It was as much about a complete realignment of economic order in preparing for a war and, with that stimulus, taking the economy close to full employment levels. Its biggest USP was it did this without letting the working class -- relatively free of unemployment -- threaten capital's dominance. Legendary Polish economist Michal Kalecki talked about in his celebrated essay *The Political Economy of Full Employment* and contemporary economic historians such as Clara Mattei have discussed this in detail in an excellent book *The Capital Order: How Economists Invented Austerity and Paved the Way to Fascism*. Despite today's inequality and economic precarity, the underclass in advanced capitalist countries do not face the economic hardship, which would have them even entertain the idea of a fascist realignment of the economy, which historian Adam Tooze has shown in his book *The Wages of Destruction: The Making and Breaking of the Nazi Economy*, came at a great cost and created huge scarities, even before the destruction the war brought, for the local population in Nazi Germany. In fact, people like Trump are actually calling for lowering rather than raising the military obligations of the US. That is the exact opposite of what the fascists did.

Similarly, decoupling the US economy with global flows of commodities and labour, which is what the likes of Trump argue is the best way forward, will actually

make things worse rather than better. Inflation will worsen, the dollar and US's position as the global hegemon might come under threat and worst of all, US's position as the leading country in innovation might be jeopardised. The only problem with this justified criticism of Trump is, there is nothing in the status-quo for the have-notes in the advanced capitalist countries. The economic opulence, which the existing political order has generated in these countries is extremely skewed and has made things worse for the underclass. What we have, as a result, is a fundamental asymmetry between the winners and the losers of the existing economic order. The losers in today's economy will like things to change but they are unwilling to make the kind of sacrifices or adjustments which people had to make in the only two alternatives liberal capitalism has had in modern history: fascism and communism. The winners would like to maintain the status quo but they do not want to do enough to rectify the inequality which this so-called meritocratic and free for all political economy regime has created. Doing this, to be sure, will require some purge within the ranks of the rich. Many of our readers might feel that by overemphasising the economic, this column is trivialising the critical social and institutional implications of the political battle being fought. They might have a point. But they should also ask how many of them believed in the 'it's always the economy stupid' theory in the pre-2008 era when things were good on the economic front. Unless either of the two sides figures out a way to deliver the economy which wins elections, politics will continue to become more and more socially unhinged.

Amazon has no clue what to do with Alexa, and the Echo family

Amazon, this week, announced their Q3 results. On a macro view, you'd probably find all seems well. I wasn't so sure, and dug a little deeper. Conspicuous by its absence in the financial report was any significant mention of the Echo smart devices. Of which Amazon has quite a few up for sale. Andy Jassy, Amazon president and CEO, did specifically reference the Kindle e-readers, Prime Big Deal Days, some fixtures on Prime Video, and "100 new cloud infrastructure and AI capabilities that we'll share at AWS re:Invent." Someone has to say it. Amazon has blown its first mover advantage. There was a time when the smartness, slickness and versatility of Echo smart devices and the companion smart home ecosystem was coveted. There was variety and utility. A choice of smart speakers and smart displays, across price points. Now, Echo devices just feel long in the tooth. Choose any of these devices still on sale, and the experience remains exactly as it was when they first arrived on the scene. Nothing about my interactions with an Amazon Echo Show now, feel significantly different to 2019, when it was launched (and I fondly remember my time at HT's sister publication, Mint, where I'd written about it at the time).

A glimmer of hope but that too is fading fast. Reminds me of September last year, and that remarkable demo in which David Limp, who was then Amazon's head of devices and services, said "Alexa, let's chat" and proceeded to give us a glimpse of the vision for the smart assistant that made smart assistants cool (sorry Google, Hey Google became cool because Alexa taught us smart assistants). A free flowing natural conversation with an AI assistant that sounded a lot different from what we know Alexa to sound like. Simply, better. The plan was, to have it available starting with the US, a few months later, with global availability at some point earlier this year. None of it has transpired according to plan. This envisioned evolution for Alexa was, and is, important. It'd have meant that crucial step forward from being a smart assistant, to a full-fledged AI chatbot. It'd have meant Amazon's Alexa large language model (LLM) competing with OpenAI's GPT which also underlines Microsoft Copilot, Google Gemini, Meta AI, Perplexity and a fast evolving Apple Siri which too will add OpenAI's models as an optional port for call for users. A "super agent", if you may, without throwing a shade on the capabilities of Alexa as we've known it over the years.

After pushing a case for smart assistants for years, tech companies suddenly found better value arriving elsewhere. "They were all dumb as a rock," is how Microsoft CEO Satya Nadella described smart assistants such as their own Cortana, in an interview earlier this year. To digress for a moment, this tells a lot about how tech companies see us consumers as guinea pigs willing to spend money for that privilege. Nevertheless, I'll take that up some other time. What does one make of Amazon's investments in AI company Anthropic, the latest being in March this year (this follows an earlier investment announcement in September last year), to

the tune of a reported \$4 billion. If the company wanted to replicate what Microsoft has with OpenAI for the new Alexa, it certainly didn't have the perseverance or attentiveness to do so. Anthropic has the very capable Claude chatbot, and they know what they're doing.

The reality is not just that Alexa hasn't really changed in the past year as we'd have expected it to; it seems Amazon believes it is a good idea to put the refurbished, smarter Alexa behind a subscription paywall. Want a smarter chatbot on your smart speakers and smart displays? Pay \$10 (or so; this is still a guess) a month. If not, keep using the older, less smart Alexa. After almost a decade of having Alexa available for free to users, Amazon is simply adding more resistance in a path it should logically leave undisturbed. If they have any intent of competing with AI companies that have built better chatbots and are much ahead in the generative models stakes. But then again, Amazon must be thinking if Tinder can have a subscription tier, if Evernote can still have the courage to demand a subscription, cloud storage expenses, and if Google or OpenAI can have subscriptions to unlock smart AI features, they can too. But, are any of them on as shaky a ground as Amazon are?

Software and the smart companion is one part of Amazon's AI problem. The other piece of that puzzle, is the Echo device lineup. Over the years, some iterations have worked while some haven't at all. That's par for course for any tech portfolio, but the funny thing is, most successes have come from the initial years of Amazon's Echo journey. I'll give you a virtual line in the sand — no Echo product since the redesigned Echo in 2020 and (if you really want to stretch it) the second generation Echo Show in 2021, has really caught attention. I mean, you wouldn't be queuing up for an Echo Pop. Then there is also the small matter of Amazon never really prioritising India for Echo releases. Incidentally, Statista's data suggests that as of February 2024, India registers the highest percentage of smart speaker ownership among 56 countries, with 38% of respondents saying they have a smart speaker at home. The United Kingdom was the second highest ranking country. This audience, in this part of the world, never got the battery powered Tap, the Echo Wall Clock, the Echo Loop smart ring and that gorgeous Echo Hub touch display which can be wall mounted too (I was personally rooting for this; alas, that holds little value in the face of Amazon's own resistance). There doesn't seem to be much in the pipeline in terms of the hardware side of things, to get you interested. In fact, Amazon may find competition is much tougher and rougher to contend with, than it perhaps did around 7 years ago when Echo devices arrived in India. The stagnation in the Echo smart device hardware, is symptomatic of wider sluggishness. Whether that's because of structural issues within Amazon, or Alexa LLM not being up to the mark (though that seems unlikely), is concerning. The summary doesn't make for pretty reading. It has been regularly



mentioned that Amazon executives have labelled 2024 as a "must win year" for Alexa, with that division remaining unprofitable over the years. If charging for a "Re-

markable Alexa" is their idea of finding success, they may just find that 2024 is fast running out. The ecosystem needs strong Amazon play in the consumer AI space.

The prophecies of AGI

A week ago, James Cameron, the director of science fiction movie Avatar announced that the reality of AGI coming into being was scarier to him than the fiction around it. The same week researcher Miles Brundage who worked as a Senior Advisor for AGI Readiness at OpenAI resigned from his position, announcing on his Substack that no one was ready for AGI.

Not a day goes by before someone — in the government, civil society or corporate industry mentions artificial general intelligence or AGI — and perhaps with good reason. In the last decade, AI as a technology has dramatically changed much of how every discipline works and it shows no sign of slowing. This year, two Nobel Prizes went to AI scientists. At a pub in Mountain View where I live, someone joked that the Nobel committee might give the Nobel Prize in Peace to someone working in AI policy (It didn't). As the field of AI matures and we get adjusted to seeing this technology roll out in our phones, browsers and life, conversation is shifting to a somewhat nebulous idea of achieving AGI — a vague singularity vision of the technology where AI will exceed human intelligence. AGI is also known as "strong AI", "full AI" or the ability of a machine to perform "general intelligent action."

Imagine a single human intelligence, say AGI advocates, now put it together with millions of intelligences working in a hivemind to solve humanity's biggest problems. That's the moment when proponents of AGI — academicians, venture capitalists, founders, billionaires, and researchers amongst them — start sounding like prophets or science fiction authors. These tech-first capitalistic imaginations of the world have always been popular with technologists - including Effective Altruists, Effective Accelerationism — perhaps harking back to billionaire Andreessen Horowitz's philosophy around a technology-led soci-

ety, titled The Techno-optimist Manifesto.

In the last few weeks, technocratic visions of AGI utopias have flooded the internet written by CEOs, investors and billionaires — this philosophy's prophets. A few weeks ago, Sam Altman reiterated his oft quoted vision of AGI through 'The Intelligence Age' where he says "the future is going to be so bright that no can do it justice by trying to write about it now" — a call out to a new "Intelligence Age". He adds that near-limitless intelligence and abundance energy will fix the climate, establish a space colony and discover all physics. Dario Amodei, CEO and co-founder of Anthropic published an idea titled Machines of Loving Grace in where he describes AGI as creating a "country of geniuses in a data center" that will "solve very difficult problems, very fast".

In a similar vein venture capitalist Vinod Khosla shared his philosophy titled AI: Dystopia or Utopia? which again imagined what a world will look like post achieving superintelligence. "We're on the cusp of a near-infinite expansion of brain power that can serve humanity," he says, adding that AGI will bring in "unparalleled abundance" and a "post-scarcity economy" where every human has robots, e-tutors, self-flying aircrafts, personal assistants, synthetic physicians in a society of "boundless abundance".

These ideas are different from narrow definitions of AGI that businesses came up with in the last 12 months. Last year, Google DeepMind listed six levels of AGI in a scientific paper, which introduced a measurement framework for levels of AGI performance, generality and autonomy. In July, OpenAI followed with its five-level system to achieve AGI that included starting at conversational AI and progressing through reasoners, agents and innovators into AI systems capable of functioning as entire organisations.

Why is Delhi's air quality deteriorating? | Explained

With the withdrawal of the southwest monsoon and the onset of winter, the air quality in Delhi has started to nose-dive. This week, the city and its adjoining territories have consistently recorded particulate matter (PM 2.5) levels exceeding 300, or 'very poor' air quality, and forecasts suggest that this could worsen in the coming days. As is now an established pattern, the decline in air quality coincides with the burning of farm stubble, primarily from Punjab.

What is the contribution of stubble burning to air pollution?

Stubble burning refers to a traditional practice of farmers burning the remnants of paddy stalks after harvesting. This method is often the quickest way, as farmers in Punjab and Haryana have a narrow window of October and November to clear their fields and sow wheat for the winter. The environmental impact of stubble burning has been known since the 1990s. Agricultural researchers, while analysing the economics of rice-wheat cropping pointed out that rising labour costs made it expensive for farmers to collect rice stalks strewn across the field that resulted from the use of mechanical devices such as rice shredders and combine harvesters. Though the burning of rice stalk was initially condemned as a waste of valuable manure, concerns were also raised about its harm to farmers' health. However, its link to worsening air quality in Delhi was quantified only over the last decade and a half. Today, the use of sophisticated instruments, modelling studies, and computational methods have enabled the estimation, almost daily, of stubble burning's contribution to air quality in Delhi. A study by the research and advocacy group Climate Trends of winter pollution trends in 2023 found a "strong correlation" between wind direction originating from Punjab and Haryana and the resulting pollution levels in Delhi. In the case of Punjab, during winter, 54% of the time the wind from the State blew towards Delhi, it led to a spike in air pollution; when the wind originated from Haryana, the figure stood at 27%. Every additional fire incident was correlated with an increase in PM2.5 levels of 12.44 units. Studies over the years, most recently in 2023 by a consortium of IIT Kanpur, IIT Delhi, TERI, and Airshed, Kanpur, found that from mid-October to the end of November 2022, the role of stubble burning to air quality was on average 22% and peaked to as much as 35%. This is fairly consistent with previous studies that have estimated the contribution of stubble burning to range from 20%- 40%. Based on these measurements, the Indian Institute of Tropical Meteorology-Pune (IITM-Pune) maintains an air quality forecast system that models the flow of airborne pollutants through cities. It shows the dynamic nature of stubble burning's impact on Delhi's pollution. For instance, from October 8 to 19 this year, farm fires accounted for less than 1.2% of the PM 2.5 load in Delhi. During this period, the average AQI stayed from 130 - 198 (or the 'moderate' pollution category).

However, on October 21, when stubble burning's relative contribution rose to 3.2%, Delhi's AQI immediately plummeted to 'very poor' (310). On October 23, when the relative contribution of burning reached the seasonal high of 16%, the index deteriorated to 364, still in the 'very poor' region. On October 26, the stubble burning contribution slightly dipped to 14.5%, and the AQI improved to 270 or 'poor' quality.

What is the inference from these observations?

The transitioning period from the withdrawal of the monsoon to the onset of winter causes a sharp drop in windspeed, and cause air pollutants to hover closer to the ground rather than being flushed away to the higher realms of the atmosphere. In this situation, any additional source of pollutants — such as from stubble burning — can dramatically spike the pollutant load in Delhi. Also, nearly 55% of the pollution in Delhi originates outside its territorial borders, as studies have shown. Thus, relatively small spikes can push the index as much as 100 points and change categories anywhere from 'poor' to 'very poor.'

So is stubble burning the sole villain in Delhi's pollution?

Urban Emissions, a research outfit that tracks air pollution trends nationally, reports that from 2016-23, the improving air quality reflected in the index going from a high of 285 in 2017 to a low of 173 in 2021. However, in six of these seven years, the index stayed above 216 and therefore within the AQI categorisation of 'poor' air quality. However, in Punjab, the farm fires reduced by over an order of magnitude from 17,467 in 2018 (as of October 25, that year) to 1,749 (October 25) this year. Fire incidents in Haryana too have halved since 2020. The paddy harvested in Punjab is more than twice that in Haryana and yet, this has only improved the index by 65 points at the most. Significantly, December, January, and February are officially considered the winter months by the India Meteorological Department and by this time, the atmospheric conditions that create a trap for pollutants and prevent them from being flushed out, grow stronger. However, stubble burning almost entirely ceases. Despite that, data compiled by Urban Emissions says, the air quality index has consistently remained in the 'very poor' and 'severe' (400+) category from 2016-23. This suggests that sources other than stubble burning contribute significantly to air pollution.

Which are these factors?

On October 25 this year, stubble burning was responsible for nearly 15% of Delhi's air pollution. On the same day, 'Delhi transport' which includes particulate matter from vehicles and vehicles crossing into Delhi was responsible for about 18% of the PM 2.5 load, according to the IITM's air quality forecast system. The IIT Kanpur, IIT Delhi, and Teri consortia analysis of the sources of pollution in Delhi found that the real-time source apportionment of PM 2.5 results show secondary inorganic



aerosols (SIA), which travel from beyond Delhi, contribute the highest to Delhi's pollution load. The average of winter pollution source apportionment shows SIA (32%) and biomass burning within and outside Delhi (24%) contribute the most followed by vehicles at 17%. The SIAs form when gaseous precursors like sulfur dioxide (SO₂), nitrogen oxides (NO_x), and ammonia (NH₃) react to form ammonium sulfate

or ammonium nitrate. In winter, the mean contribution of SIA from the sources within Delhi is 16% and the rest 84% from outside Delhi. In the last few years, policymakers have realised that the sources of air pollution can be tackled only via an airshed approach that requires coordinated action by multiple States including those beyond Delhi to evolve a joint response to the pollution crisis.

South Korean scientists first to discover electronic crystallites in solids

Seoul: A group of South Korean scientists have discovered electronic crystallites in a solid material for the first time in the world, which is expected to help make progress in studies on high-temperature superconductivity, the science ministry said on Thursday. A research team, led by Professor Kim Keun-su at Yonsei University in Seoul, posted a paper, titled 'Electronic rotors and Wigner crystallites in a two-dimensional dipole liquid', in *Nature*, a prominent science journal, according to the Ministry of Science and ICT.

This marks the world's first experimental discovery of the structure, theorised by Hungarian American physicist Eugene Wigner in 1934, Yonhap news agency reported. Wigner crystal refers to a solid or crystalline formation of a gas of electrons enabled by strong repulsion between electrons at low electron density. Normally, a crystal formation is understood as an attraction between atoms.

"Until now, scientists have had a dichotomous perception of electrons: those with order and those without order," Kim said. "But our research found a third type of electronic crystallites with short-range crystalline order."

The discovery by Kim's team is expected to provide further clues to under-



stand better high-temperature superconductivity and superfluidity, long-standing problems in modern-day physics. High-temperature superconductors, materials with critical temperature, are considered to have the potential for creating innovations in the energy, transportation, and medical industries as they can be easily cooled with liquid nitrogen. Superfluids are also known to have potential practical uses in health care, the electronics industry, and others. Kim said his team observed an electronic crystallite, with a size of 1 to 2 nanometres, while measuring the energy-momentum relation of electrons doped from alkali metals through angle-resolved photoemission spectroscopy and the Advanced Light Source, a specialised particle accelerator at the Lawrence Berkeley National Laboratory in the United States.

Washington Sundar couldn't care less about labels

Is Washington Sundar a top-order batter who can bowl more than handy off-spin? Is he primarily an off-spinner who is a more than capable left-handed bat? Does it really matter? Must we succumb to the desire to pigeonhole cricketers? Batting all-rounder? Bowling all-rounder? Washington Sundar couldn't care less what the world wants to label him as. As far as he is concerned, his job is to deliver with the bat, with the ball and in the field. All of which he did, and quite brilliantly at that, on his return to Test cricket after more than three and a half years. It's true that Washington started off as a top-order bat in age-group cricket in Chennai and Tamil Nadu, but for some reason, as he worked his way up the levels, it was his bowling that seemed to appeal to those that make influential decisions. When Virat Kohli's Royal Challengers Bengaluru procured him, for instance, the franchise captain used him as a new-ball operator in the Powerplay, though he didn't get the same privilege under the same leader while playing for India. In another classic case of compartmentalising players, Washington was quickly tagged a limited-overs specialist. A white-ball expert. When such perceptions emanate from the leadership group at the national level, it is impossible that they won't trickle down to the other setups, which is why he has largely batted in the second half for either Tamil Nadu or South Zone or both. Washington made his One-Day International and T20 debuts back in December 2017 at home against Sri Lanka, but it took a twist of fate for him to wear the India colours for the first time in Test cricket. During the Covid pandemic phase when jumbo teams were the norm because of quarantine and other restrictions, he was part of a large bunch that travelled to Australia for a full tour in 2020-21. There was no hint that he would win a Test cap until India's players kept dropping out with the regularity of falling autumn leaves. By the time the teams arrived in Brisbane for the final Test with the series level at 1-1, the entire Indian bowling group that started the first Test in Adelaide was unavailable for selection.

Among those ruled out was Washington's Tamil Nadu colleague and ace off-spinner R Ashwin. The latter had braved a back injury to help India stave off Australia's victory charge in Sydney alongside another wounded warrior, Hanuma Vihari (hamstring). At the Gabba, India were clutching at straws, struggling to put 11 fit men on the park. Hence the Washington debut, a debut to remember and savour and cherish, both individually and collectively. Washington had a terrific all-round game — three for 89 and one for 80, backed up by 62 and 22, both under extreme pressure. The first came when India were gasping at 186 for six in reply to Australia's 369 at a venue where the hosts hadn't been conquered for more than three decades. Enter Washington, pleasingly flowing drives and excellent defence, to thwart Mitchell Starc, Josh Hazlewood, Pat Cummins and Nathan Lyon for nearly four hours. Assured in defence and wondrous

while playing his strokes, he thrilled a pro-Australian crowd at the Gabba toir alongside Shardul Thakur, their 123-run seventh-wicket alliance taking India to within 33 of the Aussie total.

At the time, Washington wouldn't have even imagined that that wouldn't be his headline act. That came on the final day of a remarkable tour where India dug deep — any deeper, and 'rock-bottom' would have been grossly inadequate — and conjured a victory out of nowhere. Rishabh Pant was the face of that stunning fourth-innings chase but of the support acts that cropped up along the way, Washington didn't suffer in comparison with Shubman Gill, Cheteshwar Pujara or stand-in skipper Ajinkya Rahane. When Washington joined Pant, India were 265 for five, the Promised Land 63 runs away. With only Thakur and the bowlers to follow, the game was on a knife's edge. Only, Pant and Washington didn't believe so. In a jaw-dropping display of chutzpah and courage, Washington quickly took the pressure off Pant with a 29-ball cameo; included in that was a hook off Cummins with his right leg parallel to the ground, Caribbean-style, that soared deep into the stands behind the fine-leg fence. It was magical, mesmeric, unexpected, beautiful. In a way, it was the stroke that knocked the stuffing out of Australia, for good. Washington's reward for his productive debut was three of four Tests against England in February-March 2021, but after that, he was put out to red-ball pasture. Ashwin and Ravindra Jadeja had either Axar Patel or Kuldeep Yadav for company at home and Washington kept plugging away, far removed from Test reckoning but still an important part of the two white-ball set-ups. Until this season, when he was pushed up the order by Tamil Nadu, ostensibly following a little nudge from the Indian team management. In the off-season after the IPL, Washington worked on his off-spin with S. Sriram, the former India player who has been bowling consultant with several national teams, including Australia. His batting was in any case of the highest order — strong basics, tight defence, sparkling stroke-play which, flowing off a left-hander's bat, appeals even more to the connoisseur and the aesthete. He had been asked to keep himself fit and relevant, what with five home Tests against Bangladesh and New Zealand to come.

Instantaneous reward When Washington blazed to 152 against Delhi in a Ranji Trophy game 10 days back, the reward was instantaneous. The 152 came on a Saturday. On Sunday night, he was added to the Test side as a reinforcement. On Thursday, he played his fifth Test, at the MCA International Stadium in Pune. By Saturday evening, he had established himself as a strong contender for a place in the starting XI in Tests in Australia where India might go with two spinners. Numerous eyebrows were raised when Washington was called up to the Test team. Didn't they already have Axar Patel, another spinning all-rounder? Wasn't Kuldeep Yadav, the left-arm wrist-spinner who had a wonderful time of it against the English earlier in



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the year, too in the squad? Why Washington? Because of the 'control' he brings, head coach Gautam Gambhir told us. And because he can take the ball away from the left-handed batter, of whom there were three in the Kiwi top order. Maybe he was obliquely telling us in what bracket he, and the team, were placing Washington in.

Gambhir and Rohit would have been pleasantly shocked at how fantastically Washington bowled in Pune. Not just because he took seven for 59 in the first innings and four for 56 in the second, but because of how he was able to maintain his consistency and shape and energy through long spells. He was constantly probing, out-bowling his more experienced and established spinning colleagues, Ashwin and Ravindra Jadeja. He showed himself to be a quick learner, dropping his pace and varying the angles. He fed off the two senior spinners' wisdom but also used his own learnings to emerge as the biggest Indian threat to New Zealand, the best compliment he could have got considering that of his two spinning partners, one had more than 525 wickets and the other had just breached the 300-mark. With the bat, he was most authoritative in both innings, even if the runs didn't reflect that. In the first innings, batting surprisingly low at No. 9, he showed enterprise with the tail in making 18 not out. That earned him a promotion to No. 6 in the second innings, where he hardly looked out of place. For nearly an hour, he was comfortable in the middle even as the ball did its thing, even-

tually falling to a sharp catch at short-leg for 21. As left-field decisions go — Washington wasn't publicly in the running for a Test recall at the start of the international home season last month — this was quite the masterstroke. In a Test where India surrendered a proud record of having won every home series for 12 years and 18 instances successively, Washington offered them a window to the future. For a little while now, the life-after-Ashwin scenario has found mention in soft whispers. Last month, the giant from Chennai turned 38 and it's safe to say that he is much closer to the end of his illustrious career than its beginning. It's just possible that at some stage in the near future, he will hand over the reins to his younger mate from the same city, who might not possess the same bursting bag of tricks as the senior pro but who is still young enough, 25, to add exponentially to his craft. For Washington, Pune will be a watershed Test. Pulled out from near-obscurity, he has enjoyed a comeback that players only dream about. Should his 11-wicket haul and his composed batting be a mere footnote because India lost the Test? Or should it be put in proper perspective and appreciated and eulogised because of the hope it has triggered, the excitement it has generated, with regard to the future? The expectations on Washington will be massive going forward, just as they have been on Ashwin and Jadeja for so long now because of the standards they have set, the heights they have touched. From all evidence, he won't be bogged down by that. After all, he is nothing if not a great believer in 'God's plan'.

