Is the Artificial Intelligence boom a bubble?



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lobal spending on Artificial
Intelligence (AI) is projected to reach
\$375 billion this year and \$500 billion
by 2026, according to the UBS. That
raises a fundamental question: is AI's value
being driven by genuine technological progress,
or by investor enthusiasm racing ahead of
reality? Is the AI boom a bubble? Bhagwan
Chowdhry and Anoop Kunchukuttan discuss the
question in a conversation moderated by
Areena Arora. Edited excerpts:

Where did the idea that the AI boom might be a bubble originate? Is it driven by weak monetisation, comparisons to the dot-com bubble era, or by limits in what current AI can realistically deliver?

Bhagwan Chowdhry: People only remember dot-com as a bubble. I don't think of dot-com as a failure at all. What came out of that bubble was great progress. Look where we are today and how much we use the Internet. It wouldn't have been possible if not for the dot-com hype. All technological revolutions follow the same pattern. It starts with hope, goes to hype, which then translates to make. Make also means break. AI is going to be like that too.

With widespread usage but limited customer willingness to pay, what does AI resemble at this stage? Is it similar to early social media and cloud computing or something fundamentally different?

Anoop Kunchukuttan: In one sense, AI is already pervasive throughout the technology stack, from very early systems like email spam classifiers to recommendation systems. Increasingly, AI has started doing really well in narrow domains like speech recognition and translation. What we are seeing, especially since ChatGPT was released in late 2022, is the idea of a chat assistant and, more recently, highly autonomous agents. The bet is on whether we can automate tasks at a very large scale. In some narrow domains, AI is already successful. We will find more use cases where it boosts productivity. The challenge is whether we will have something transformative in terms of highly autonomous agents. We are not there yet and there is a lot of speculation and hype. The important thing is to ensure reliability, trust, factual correctness, safety, and common sense. These are challenges that should be addressed before mass adoption.

Do you have any predictions you would be comfortable making about AI's mass scale



REUTERS

and adaptability?

AK: It is difficult to predict a timeline. Research takes its own path.

BC: We are going to overestimate what is going to happen in one year, but we will underestimate what is going to happen in 5-10 years.

What does the dot-com comparison get wrong about today's AI market?

BC: Speculators are going to bet on a hundred things of which 95 will fail. But they will fail financially, not in terms of technology. Technology will continue to get better. Out of so many startups, maybe only a handful will survive. So, it may look like a failure from that point of view. But the ones that do survive are going to change the world. This genie is out of the bottle and we are not going to put it back.

Where is the biggest mismatch between scientific progress and market expectations?

AK: Let us go back to the dot-com analogy. It was the idea that the Internet was a transformative technology and people built businesses which reached mass scale and achieved a lot of business value.

AI is different. The technology is known to some extent in some narrow domains and we will continue to see benefits there. However, when it comes to artificial general intelligence (human-like intelligence) and highly autonomous behaviour, we don't know to what extent they will succeed. Until 2-3 years ago, there was a notion that you could simply scale up models and they would get better. Those scaling laws are being challenged now. You don't get that quantum of improvement just by making models larger. It is difficult to predict the paths (AI) will take. A better analogy is the search engine infrastructure and the hype that came with it. Its potential was not clear. It was



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very ambitious to say that you could index the whole web and in microseconds it would fetch you an answer to a query. But it was done over time. Multiple search engine companies invested and built the technology that made this possible. AI is similar. Today, the gains might be smaller, but over time, the gains will accrue.

What are some of the important capability challenges in today's AI systems that we are underestimating or misunderstanding?

BC: When lay people think about AI, they only think about AI that is going to benefit them immediately. The biggest gains are going to come from how AI handles science – in biology, chemistry, 3D modelling, or the discovery of proteins and drugs. Most of us don't pay attention to those. Even mathematical research is going to change in a fundamental way.

AK: There are use cases which can make a larger impact in science, education, or medical science. We need to ask ourselves whether we are willing to invest in areas where the returns might not be immediate. There are transformative areas where sustained efforts will lead to gains.

Do you think scientific progress should always be judged against investor confidence? Does the fear of a bubble burst slow down genuine innovation?

AK: This is not the first time this is happening in AI. There is a term for it: AI winter. In the 1960s and 1970s, and then in the 1980s and 1990s, there was the promise that AI could come up with autonomous agents. But it did not pan out. Back then, the sentiment was the same and the hype did not materialise and there was a freeze in funding for AI. So, that risk exists. We should invest for the long term while also looking for short-term gains. Because we are focusing on innovation right now, there isn't as much focus on efficiency. If we focus on efficiency and competition in the chip market, we can make economics more viable.

BC: What we have to worry about is whether this will lead to any systemic crisis. Will it cause a sequence of banks failing or the economy

going down? That is what we have to focus on. But the nature of the game of speculation is that some people will lose money and some people won't. When we ask if we should be worried about AI, we have to ask, who is this we? Even in the dot-com bubble, consumers benefited.

Investment in chip making and data centres amounts to roughly 0.5% of global GDP. Is that level of spending economically justified?

AK: It is difficult to judge. But one trend in computing is clear – that more computing power typically helps to improve systems. To that extent, investment in data centres and chips is warranted.

A McKinsey report said only a small minority of companies has reported any meaningful profits driven by AI. If productivity gains don't monetise in the next few years, will markets reprice AI like they do any other asset? How would researchers then make the case to keep investing to these companies that are not seeing profits from AI?

BC: Markets are going to reprice companies; they are not going to reprice AI as a whole. That will continue to exist. Companies and attempts may fail, but there will be successes too.

AK: From a technologist's standpoint, we are making rapid advances in AI. No doubt a lot of experiments will fail. That is the nature of science. But I hope people investing in science understand that that is important.

Is the AI boom a bubble waiting to be burst, or is this the early, messy phase of a real lasting technological shift?

BC: I would say it is both. There are little bubbles that will burst, but that is a good thing. In 10 years, we as a society will be ahead if we make sure it doesn't lead to a systemic crisis, either in terms of security or in terms of failure that percolates from one place to other.

AK: As far as technology goes, there is no doubt that it is positive. We are already living through a lot of AI embedded in whatever we are doing, and it is only going to grow more. ChatGPT was a moment of inflection that has led to this boom. In the process, there might be failures, but the overall trend is forward looking.



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NOTEBOOK

Creatures of the night: sub-editors who turn the wheels after dark

There is satisfaction in producing the newspaper, in wrapping up the minutiae, in having the last word

Kannal Achuthan

f Count Dracula should ever find a need to make a living, he would do well to apply for the role of a sub-editor in a newspaper. He could catch up on his beauty sleep during the day and be ready, as twilight falls, to taste copy, letting the words swirl in his mouth before prepping to feed on the news frenzy.

Sub-editors are, as Byron might describe, creatures of the night, "mellowed to a tender light that heaven to gaudy day denies". We wake up and let coffee run in our veins, catching up on the day's news and getting ready for the story list that will inevitably shape-shift before we can pin down the front-page line-up.

To reporters, those unfathomable creatures of the light, every story they write is important. But it is the sub-editors who must curate them, negotiating the tightrope between content and form, and story and space. Not for us the mad dash for a scoop or a quote; the nocturnal hunt is of a different kind. Like an owl waiting for the tiniest movement in the grass, we must remain alert to the possibility of errors, double-check facts, and find the right words for a headline that will fit a three-column, two-deck space in a 30-point size. This is why a reader may find 'bats for' as the go-to phrasal verb in a headline instead of 'recommends', which takes up far more space. Or why the verb 'flays' is used more frequently than the sober 'criticises'.

Multitasking while watching the clock is par for the course. Copy must be subbed for the Internet, a different headline worked out for print, pictures added, captions given, paragraphs trimmed, the revisions played back to the reporter, layouts swapped if a more important story arrives, and pages scrutinised before they are released and typeset. Indeed, we still use the word 'typeset' that originates from the letterpress era, when type was composed by hand for each page.

All these tasks need to be done at an hour when most people are tucked into

bed, deep in slumber. This is when we need to be most active, keep our focus sharp and stay alert to the possibility of a late news break or, god forbid, a missing 'l' in the word 'public'.

Such an environment is a happy place

for members of the nocturnal tribe, who work best when the stars twinkle. Our headlines for the 'city edition' (that takes shape after midnight) have more zing, the team's wisecracks have more sting, and leftover snacks get finished in a blink. Our doctors are not pleased with the

Our doctors are not pleased with the schedules we keep. You are going against the natural circadian rhythm, they say. There will be long-term health problems, they warn. Melatonin patterns will be disrupted, they counsel. But what if you are already on a delayed phase and have been a natural night owl? Become a subeditor in a newspaper. Everyone has a place under the moon.

It is likely that you will not have many friends outside work. Pleasant evenings on the beach or going to a play at a theatre will have to be scheduled for rare days off. Relationship problems could creep in. Family may disown you because you rarely turn up for wedding ceremonies in the mornings.

Still, sub-editors persist. There is satisfaction in producing an edition that regular folks will wake up to in the morning, in wrapping up the minutiae, in having the last word.

When our work is done and we are on the way home in the office cab, we have a glimpse of the other night workers: sanitation staff sweeping roads, call centre employees huddled near a late-night tea shop, bleary-eyed security guards, factory-workers, police personnel, and more. Unsung heroes who work out of sight, whose names may not light up bylines, but who are the keepers of the fire and the gatekeepers of content.

The hands of the clock show it is 4 a.m., or maybe it is 5. The sun will rise, the sub-editor will sleep.

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PICTURE OF THE WEEK

Baby shower



A mother shields her child from the sudden downpour in Chennai. VELANKANNI RAJ B.

FROM THE ARCHIVES

FIFTY YEARS AGO DECEMBER 19, 1975 launch

Pardon for Nixon: New disclosure

Washington, Dec. 18: The U.S. President, Mr. Gerald Ford's reputation for candour has seemingly suffered a setback with the disclosure now that he had been persuaded by at least three former aides of Mr. Richard Nixon to grant the ex-President a pardon, after the latter had resigned last August in the wake of the Watergate scandals, and faced the possibility of criminal prosecutions being

launched against him.

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Ever since he succeeded Mr. Nixon, Mr. Ford had maintained that he had made the decision to grant the pardon on his own, and that he had not discussed the matter with anyone, before he announced his decision granting the pardon on September 8. 1974. After becoming President, in testimony before the Senate Judiciary Committee in October last year, Mr. Ford, who was questioned closely on the pardon issue, had said: "Nobody made any recommendations to me to pardon the former President. At no time after I became President was the subject of a pardon for Mr. Nixon raised by the former President or anyone representing him."

A HUNDRED YEARS AGO DECEMBER 19, 1925

Indian Railway fares

Delhi, Dec. 18: I understand that the Railway Board have seriously taken up the question of the reduction of railway rates. They have already made an analysis of the statistics regarding railway earnings. The question of the reduction of railway fares was raised, several times, by the members of the Assembly and the Council of State in the speeches made on the last railway budget and, only a few days ago, the South Indian Railway announced a reduction in its