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QIB receives 'Straight Through Processing Excellence Award'

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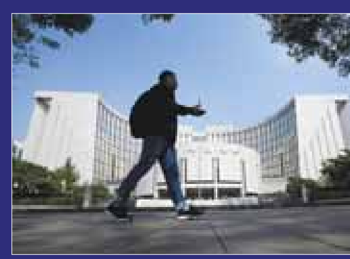

GROWTH TARGET : Page 3

China's central bank unveils most aggressive stimulus since pandemic

Ooredoo Group secures QR2bn in landmark financing deal to accelerate data centre expansion

Ooredoo Group announced yesterday a landmark QR2bn financing deal to accelerate the growth of its data centre and AI business, enabling a significant expansion of capacity and the modernisation of its data centres.

The financing deal was signed with QNB, Doha Bank, and Masraf Al Rayan. The 10-year hybrid facility, comprising commercial and Islamic tranches, is the largest transaction – in terms of value and tenor – ever achieved in Qatar's tech sector, underscoring the confidence of leading financial institutions in Ooredoo's strategic vision.

The funds will be strategically allocated to carve out existing data centre assets from Ooredoo's telecom operations, with a significant portion directed toward expanding capacity and upgrading infrastructure to support the growing demand for AI, cloud services, and hyperconnectivity in the Mena region.

Aziz Aluthman Fakhroo, Group CEO, Ooredoo, said: "The Mena region is one of the fastest growing markets for data centres worldwide, and there is significant untapped potential in AI, Cloud services and accelerated computing. This financing deal marks a major milestone in our strategic vision for expanding our data centre and AI business, and we are excited to meet the region's increasing demand while upholding our commitment to sustainable, energy-efficient infrastructure.

"I would like to thank QNB, Doha Bank, and Masraf Al Rayan for their invaluable support in this landmark transaction and their dedication to accelerating the growth of digital infrastructure both in Qatar and across the region."

From left: Aziz Aluthman Fakhroo, Group CEO, Ooredoo; Abdulla Mubarak al-Khalifa, QNB Group CEO; Sheikh Abdulrahman bin Fahad bin Faisal al-Thani, Group CEO, Doha Bank; and Fahad al-Khalifa, Group CEO, Masraf Al Rayan, during the signing of the QR2bn in landmark financing deal to accelerate Ooredoo Group's data centre expansion.

Abdulla Mubarak al-Khalifa, QNB Group CEO, said: "We are proud to have worked alongside Ooredoo Group, Doha Bank, and Masraf Al Rayan on this important financing deal, which will facilitate the growth of data centres in Qatar and the region. We expect the data centre market to grow significantly over the coming years, and by supporting Ooredoo, we are investing in the future of AI and Cloud services. This collaboration also strengthens Qatar's leadership in technological innovation. We look forward to working closely with Ooredoo Group as this market evolves."

Fahad al-Khalifa, Group CEO, Masraf Al Rayan, commented: "We are excited to be part of this major financing deal, which will contribute to driving technological progress in Qatar and the region. By partnering with Ooredoo, we are investing in the future of digital infrastructure and supporting sustainable growth through innovation and economic diversification. We are proud to be at the forefront of this significant initiative, which will undoubtedly cement Qatar's position as a leader in the digital economy."

Sheikh Abdulrahman bin Fahad bin Faisal al-Thani, Group CEO, Doha Bank, stated: "We are dedicated to supporting Ooredoo in its ambitious expansion of digital infrastructure through this financing deal. The growth of Ooredoo's data centres will have a transformative impact on the tech sector, enhancing regional competitiveness and positioning the country as a leader in the digital economy. We are proud to play a role in enabling this important step towards achieving comprehensive development in Qatar and the region."

Ooredoo's Data Centre Company was established to pioneer the region's digital transformation by providing cutting-edge colocation services to hyperscalers and enterprises. As part of its strategic growth, the company plans to expand its capacity to over 120 megawatts through a $1bn investment in the medium to long term. This expansion will position Ooredoo to better serve the increasing demand for localised Cloud services and IT workloads, particularly from hyperscalers.

With 26 active data centres across Qatar, Kuwait, Oman, Iraq, and Tunisia, Ooredoo continues to lead the Mena region's data centre market. Ooredoo Group has strong partnerships with hyperscalers, enabling the company to offer cloud-based solutions including Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS).

Earlier this year Ooredoo Group announced a collaboration with NVIDIA, which will see the company leverage NVIDIA's advanced accelerated computing platform to help enable the AI revolution across the Mena region and provide sovereign cloud solutions to governments and enterprises. The agreement marked NVIDIA's first large-scale launch in the region.

HE the Minister of Commerce and Industry Sheikh Mohammed bin Hamad bin Qassim al-Thani and Czech Republic Minister of Industry and Trade Jozef Síkela during the agreement signing ceremony.

Sheikh Mohammed chairs inaugural session of Qatar-Czech Joint Committee for Economic, Commercial and Technical Co-operation

HE the Minister of Commerce and Industry Sheikh Mohammed bin Hamad bin Qassim al-Thani and Czech Republic Minister of Industry and Trade Jozef Síkela co-chaired the inaugural session of the 'Qatar-Czech Joint Committee for Economic, Commercial and Technical Co-operation', which concluded in Doha yesterday.

Representatives from the ministries of Transport, Sports and Youth, Public Health, Municipality, Education and Higher Education, Culture, and Environment and Climate Change, as well as from Qatar Free Zones Authority, Investment Promotion Agency, Qatar Airways Group, Qatar Development Bank (QDB), Qatar Mining, and Qatar Chamber participated in the proceedings.

The committee reviewed aspects of co-operation between the two countries in various sectors of common interest.

In the opening speech, Sheikh Mohammed underscored the committee's significance as a platform to explore opportunities for co-operation between the two countries in a wide range of economic, commercial, and technical sectors.

These sectors include trade, investment, transport, industry, education, science, agriculture, food security, technology, youth and sports, culture, mining, and other areas of common interest.

Sheikh Mohammed stated that the Czech Republic is a vital partner of Qatar and emphasised Qatar's Third National Development Strategy, prioritising sustainable economic diversification.

Key sectors include industry, logistics, technology, financial services, agriculture, health services, and education. He encouraged Czech companies to explore the investment opportunities available in the Qatari market.

The minister stressed the importance of increasing collaborative efforts between the public and private sectors to enhance trade and industrial co-operation between the two countries. This includes expanding and diversifying investment partnerships through signing and implementing new agreements and memorandums of understanding, all aimed at serving the mutual interests of both countries.

Sheikh Mohammed emphasised the significance of establishing a joint business council between the private sectors of both countries to enhance trade, develop economic relations, and organise joint trade exhibitions.

The session concluded with both parties expressing their commitment to strengthening bilateral co-operation, affirming that the outcomes of this session would pave the way for tangible opportunities for partnership between the two countries.

QIIB successfully issues $300mn Tier 1 capital sukuk

QIIB has announced the successful issuance of a $300mn Tier 1 capital sukuk, aimed to strengthen its capital position and benefitting from opportunities in the global sukuk market. The sukuk witnessed great demand from investors with the total order book reaching more than eight times the issuance size, which confirms confidence in QIIB and the Qatari economy.

The subscription came from some 115 investors around the world, with the total subscription requests exceeding amount of $2.5bn.

The issue was priced at a profit margin of 187 basis points over the 5.5yrs US Treasury, with a final return of 5.45% per annum.

The issuance was arranged by a group of banks, namely Standard Chartered Bank as the sole global co-ordinator, along with Al Rayan Investment Company, Citibank, Doha Bank, Dubai Islamic Bank, Dukhan Bank, Emirates NBD Capital, HSBC, Lesha Bank, Mashreq, QNB Capital, and Warba Bank as joint lead managers and book runners.

Commenting on the issuance, QIIB Chief Executive Officer Dr Abdulbasit Ahmed al-Shaibei stated, "This is our second sukuk issuance this year, which has attracted strong demand from investors worldwide. The favourable pricing of these sukuk reinforces the global appeal and strength of the Qatari economy, which continues to enjoy exceptional investment attractiveness. Qatar's strong and attractive economy plays a pivotal role in supporting the country's institutions, especially its banks."

The sukuk has witnessed great demand from investors with the total order book reaching more than eight times the issuance size, which confirms confidence in QIIB and the Qatari economy

He noted, "The significant demand for our sukuk reflects the financial strength and credit worthiness of QIIB, which is backed by the assets quality, strong liquidity, robust capitalisation, and high efficiency in the banking sector. Reports from international credit rating agencies confirm our strong profitability and stable outlook, ensuring our long-term growth prospects."

The CEO explained, "Issuing the sukuk within the Tier 1 capital framework is a strategic move to bolster QIIB's financial strength and meet our growth ambitions. This also enhances our presence in international markets and strengthens relationships with global investors and financial institutions."

He highlighted, "Earlier this year, QIIB issued a $500mn sustainable sukuk, listed on the London Stock Exchange. As Qatar's first institution to issue sustainable sukuk, we received a phenomenal response from investors across the globe."

"This issuance underscores our commitment to sustainability and aligns with Qatar National Vision 2030, as well as the Third Financial Sector Strategy launched by the Qatar Central Bank, which prioritises environmental, social, and governance (ESG) principles. Our efforts contribute to the continued development and prosperity of the financial sector from multiple dimensions."

The CEO expressed confidence in QIIB's ability to strengthen its financial standing and achieve growth in line with the interim and strategic plans approved by the Bank's Board of Directors.

He also extended his gratitude to the banks that have been involved in arranging the latest sukuk issuance, which was a success by all standards.

QIIB Chief Executive Officer Dr Abdulbasit Ahmed al-Shaibei.

China's central bank unveils most aggressive stimulus since pandemic

Reuters
Beijing

China's central bank on Tuesday unveiled its biggest stimulus since the pandemic to pull the economy out of its deflationary funk and back towards the government's growth target, but analysts warned more fiscal help was vital to hit these goals.

The broader-than-expected package offering more funding and interest rate cuts marks the latest attempt by policymakers to restore confidence in the world's second-largest economy after a slew of disappointing data raised concerns of a prolonged structural slowdown.

But analysts questioned how productive the People's Bank of China's liquidity injections would be, given extremely weak credit demand from businesses and consumers, and noted the absence of any policies aimed at supporting real economic activity.

"This is the most significant PBoC stimulus package since the early days of the pandemic," said Capital Economics analyst Julian Evans-Pritchard.

"But on its own, it may not be enough," he added, saying more fiscal stimulus may be needed to return growth to a trajectory towards this year's official target of roughly 5%.

Chinese stocks and bonds rallied and Asian stocks hit 2-1/2 year highs as Governor Pan Gongsheng announced plans to lower borrowing costs and inject more funds into the economy, as well as to ease households' mortgage repayment burden. The yuan currency jumped to a 16-month high against the dollar.

Pan told a news conference the central bank will in the near future cut the amount of cash that banks must hold as reserves — known as reserve requirement ratios (RRR) — by 50 basis points (bps), freeing up about 1tn yuan ($142bn) for new lending.

Depending on the market liquidity situation later this year, the RRR may be further lowered by 0.25-0.5 percentage points, Pan said, in rare forward-looking remarks.

The PBoC will also cut the seven-day reverse repo rate, its new benchmark, by 0.2 percentage points to 1.5%, as well as other interest rates.

"The move probably comes a bit too late, but it is better late than never," said Gary Ng, senior economist at Natixis.

"China needs a lower-rate environment to boost confidence." Pan did not specify when the moves will take effect.

The property market support package included a 50 bps reduction on average interest rates for existing mortgages, and a cut in the minimum downpayment requirement to 15% on all types of homes, among other measures.

China's property market has been in a severe downturn since peaking in 2021. A string of developers have defaulted, leaving behind large inventories of unwanted apartments and a troubling list of uncompleted projects.

Beijing has removed many home purchase restrictions and sharply lowered mortgage rates and downpayment requirements in response, but has so far failed to revive demand or arrest slumping home prices, which fell at the sharpest pace in more than nine years in August.

The property crisis has weighed heavily on the economy and crippled consumer confidence, given that 70% of household savings are parked in real estate. Analysts remain unconvinced the latest measures will have a significant impact.

A man walks past the headquarters of the People's Bank of China in Beijing. The broader-than-expected package offering more funding and interest rate cuts marks the latest attempt by policymakers to restore confidence in the world's second-largest economy after a slew of disappointing data raised concerns of a prolonged structural slowdown.

Aramco targets $3bn from bond sale amid Saudi debt spree

Bloomberg
Riyadh

Saudi Arabia's state-run oil behemoth is looking to raise $3bn in its second international bond sale in two months, the latest deal in the kingdom's debt spree this year.

Saudi Aramco has mandated banks for the dollar-denominated bonds, according to a statement on the Saudi stock exchange, without giving details on the amount it plans to raise. The expected $3bn issuance will be split between five- and 10-year sukuk, as securities compliant with Islamic rules are known, according to a person familiar with the matter who asked not to be identified.

The government and state-linked companies' heavy borrowing comes as Crown Prince Mohammed bin Salman pushes the country on an ambitious economic diversification. The effort is being complicated by oil's decline, which at around $75 a barrel in London is below the nearly $100 the kingdom needs to balance spending. Weaker crude has also hit Aramco's profit, even as the company has maintained its massive dividend payout that's crucial for the government in helping narrow a budget deficit.

It maintained its $31bn quarterly dividend to the Saudi government and other investors in the second quarter despite lower profit, and has said it will distribute $124bn this year. Free cash flow — funds from operations minus capital expenditure — of about $19bn in the quarter was less than the payout. To maintain the dividend at current levels, the company would likely need to take on more debt.

Aramco raised $6bn in July, its first dollar debt sale in three years, and also sold 40-year bonds that month. In June, the Saudi government offloaded a stake in the company that eventually brought in $12.35bn.

Among other state borrowers, the Public Investment Fund, Saudi Arabia's sovereign investor, tapped bond markets to raise $2bn earlier this month, taking its year-to-date issuance to about $10bn. The PIF, chaired by the crown prince, is a top recipient of Aramco dividends and a key part of his plans to reshape the Saudi economy.

Neighbouring countries like the United Arab Emirates also tapped debt markets as its largest producer Abu Dhabi National Oil Co this month sold $4bn in five-, 10- and 30-year debt. The UAE, a partner in the Organisation of Petroleum Exporting Countries, is investing billions of dollars to raise production capacity even as it chafes against the group's production constraints.

Aramco appointed Al Rajhi Bank, Citigroup Inc, JPMorgan Chase & Co and Standard Chartered Plc, among others, as active joint book-runners for the sale, according to the statement.

QIB receives 'Straight Through Processing Excellence Award' from Citi

Qatar Islamic Bank (QIB) received the annual Straight Through Processing (STP) Excellence Award from Citi for "outstanding performance" in STP and delivery of commercial and treasury payments.

The award was handed over at a meeting held at QIB head office, attended by senior officials from QIB and Citi.

Citi's STP Award is presented annually to banks that have efficiently processed foreign currency payments. This year the award recognised QIB's state-of-the-art in-house funds transfer architecture and reflects the bank's consistent high SWIFT payment standards, which facilitate automated processing resulting in beneficiary account credits in the fastest time. Furthermore, the award was given to QIB for conducting international settlement services with an STP rate above 99%.

STP ensures that payments are done automatically without human involvement, resulting in zero errors and reduced processing time and resources, benefiting all stakeholders.

The award recognises QIB's state-of-the-art in-house funds transfer architecture and reflects the bank's consistent high SWIFT payment standards, which facilitate automated processing resulting in beneficiary account credits in the fastest time

"The award recognises the high level of operational efficiency that QIB focuses on. With our experienced personnel and strong IT infrastructure and delivery channels, we are well positioned to continue providing the highest quality service to all our individual and institutional customers" said Saleem al-Haq, QIB's chief operating officer, Operations and IT Group.

Mohamed Ahmed al-Hammadi, Head of Middle East and Pakistan – Financial Institutions Sales, Citi, said: "This award was given to QIB on the merit of exhibiting excellence and outstanding performance in STP and delivery of commercial and treasury payments. We are pleased to present this award and wish to congratulate QIB for achieving such outstanding STP standard."

QIB has been constantly acknowledged in international and regional forums for its leading role in the banking industry. The bank took on a wide range of initiatives to improve operations performance and efficiency, which has helped to increase business volumes and to improve its efficiency (cost to income) ratio.

Qatar's residential realty market to see $538mn spending from GCC nationals and expats: Knight Frank

By Santhosh V Perumal
Business Reporter

The Gulf Co-operation Council (GCC) nationals and GCC-based expats are prepared to spend as much as $538mn on Doha's residential market, according to global property consultancy Knight Frank's second annual Destination Qatar report.

This is based on its survey of 253 GCC nationals and 249 GCC-based expats, each with a minimum monthly income of $5,000, said Knight Frank, a London-based leading independent global property consultancy.

"The principal reason GCC nationals and GCC-based expats would like to own residential property in Qatar is purely for capital gains, while the second biggest motivation is for a buy-to-let property," said Adam Stewart, Partner – Head of Qatar, Knight Frank.

Overall, the survey uncovered a potential pool of $537.5mn of private capital that is actively considering a residential purchase in Qatar. In comparison, the total value of all residential sales in Qatar during the first half (H1) of 2024 stood at $907mn, highlighting the rapidity at which Qatar is starting to court the interest of regional purchasers and investors.

The housing market in Qatar has remained subdued over the past year, influenced by multiple factors, it said, adding residential property demand has been generally stable against a backdrop of rising supply.

"This supply-demand imbalance, combined with mortgage affordability issues, continues to exert downward pressure on property prices and rental rates," the report said.

Despite this, the residential sector has emerged as the most popular target asset class for GCC nationals and GCC-based expats with 65% of those surveyed by Knight Frank are keen on acquiring a residential property in Qatar within the next five years, while 28% would like to transact during 2024.

Qatar's residential sector has, for a long time, been dominated by Qatari purchasers. In 2002, it was opened to the GCC nationals and restrictions were further eased in 2018, allowing international buyers access to 99-year leasehold ownership.

The Gulf Co-operation Council (GCC) nationals and GCC-based expats are prepared to spend as much as $538mn on Doha's residential market, according to global property consultancy Knight Frank's second annual Destination Qatar report.

Over the last five years, Qatar's expat residents have shown a strong interest in home ownership, with home values rising by an average of 4.5% between 2018 and the end of H1 2024.

As much as 69% of GCC nationals and GCC-based expats, according to Knight Frank, are willing to spend up to $1mn on a residential acquisition in Qatar, with just 7% prepared to spend over $4mn.

Among the GCC nationals aged 25-34, 55%, are willing to spend between $500,000 and $1mn on a home in Qatar. For GCC-based expats, budgets are lower, with most not willing to allocate more than $500,000. This ranges from 34% of those aged 25-34 to 41% amongst 45-54-year-olds.

Some 47% of Emiratis are prepared to commit $500,000 to $1mn. For Saudi nationals, 28% would like to spend no more than $500,000.

Amongst GCC nationals, those aged 25-34 have the highest average budgets at $1.3mn. This falls to $630,000 for GCC-based expats aged 45-54. However, the UAE nationals have the largest potential budgets for residential purchases in Qatar, averaging $1.4mn.

Branded residences were named the joint most popular realty asset class for potential investors from around the region by GCC nationals and GCC-based expats.

"With real estate budgets ranging from $1.1mn for GCC-based expats to $806,000 for the GCC nationals, the branded residential sector's expansion appears almost inevitable if Qatar is to capture some of this apparent pent-up demand for branded homes in the country," said Shehzad Jamal, Partner (Strategy and Consultancy) – Real Estate, Healthcare and Education, Middle East and North Africa.

Qatar, Saudi Arabia and UAE account for 82% of sustainable sukuk issued globally in H1, says Moody's

By Pratap John
Business Editor

Qatar, Saudi Arabia and the UAE accounted for 82% of sustainable sukuk issued globally in the first half (H1) of this year, a new report by Moody's Ratings has shown.

According to Moody's, global issuance of sustainable sukuk increased 21% year on year to $6.8bn in H1, 2024.

Issuance of sustainable sukuk is growing and will accelerate amid global efforts to reduce carbon emissions, the report noted.

Sustainable sukuk issuance is rising from a low base. Moody's expect issuance in 2024 to top the $10.6bn that it logged in 2023 – itself a big jump from $6.3bn in 2022 – driven by the growing push toward decarbonisation, expanding policy efforts and robust investor demand.

Around $6.8bn in sustainable sukuk was issued in the first half of 2024, marking a 21% increase from the $5.6bn raised in the same period of 2023.

At the same time, the overall sustainable bond market showed signs of a slowdown, with an 8% drop in issuance in the first half of 2024 compared with the same period of 2023.

Sustainable sukuk still account for a small share of overall Islamic finance, but Islamic countries' decarbonisation plans, guidance from the International Capital Market Association (ICMA) and other policy initiatives, as well as strong investor interest will support expansion in the issuance of these instruments, it said.

In the first half of this year, issuance of conventional sustainable bonds shrank 8%. But sustainable sukuk still made up just 5.4% of total sukuk issuance, compared to conventional sustainable bonds' 12% share of overall bond issuance.

Most countries with active sukuk markets, such as in the Middle East and Southeast Asia, have rolled out energy transition plans, with renewable energy targets, to reduce their vulnerability to risks that stem from heavy reliance on hydrocarbons.

Financing through sustainable sukuk will be a key lever for them to meet their decarbonisation goals. Sustainable sukuks cater not only to Islamic investors but also to conventional investors who need to execute sustainable investing strategies.

A key appeal is that the instrument provides transparency in its use of proceeds. About 74% of sustainable sukuk have been issued in non-local currencies, indicating strong international demand.

"As such, we expect that growth in sustainable sukuk will accelerate, garnering a larger share of the sukuk market," Moody's noted.

ICMA's guidance on sustainable sukuk released in April this year will help facilitate issuance as it provides potential issuers with detailed information on how to label sukuk as sustainable.

New initiatives by governments and regulatory bodies, such as sustainable finance taxonomies and incentives for issuance of sustainable sukuk, will also be a boon to the instrument, Moody's said.

Bloomberg QuickTake Q&A

The way we interact with AI chatbots is changing

By Olivia Solon and Seth Fiegerman

When OpenAI launched its ChatGPT chatbot in 2022, it looked as if a new generation of artificial intelligence tools was about to transform every corner of the economy and people's lives. Fast-forward to 2024 and AI features have been added to countless services, but the impact has arguably not been quite so dramatic.

AI has not created vibrant new professions. Neither has it yet laid waste to entire industries. A growing number of high-profile and well-funded startups have bowed out of the race to develop cutting-edge AI models.

Yet it's still early days, and the technology is evolving fast. In September, Microsoft-backed OpenAI began rolling out an updated model that the company said can engage in human-like reasoning to work through more complex questions from users, including fielding complicated math and coding problems. Alphabet's Google and Anthropic are also working on similar capabilities for their products. OpenAI Chief Executive Officer Sam Altman called it the "beginning of a new paradigm." The concept of reasoning is difficult to define and measure, but the goal for the tech companies is clear: They're out to prove that AI tools can act as sophisticated "co-pilots" and "agents," capable of helping people with personal and professional tasks. In doing so, they hope to shore up AI's long-term potential.

What is generative AI?

It's a type of software that can carry out complex tasks such as writing a story or creating an image in response to simple written prompts. During training, these systems are fed vast amounts of information (for example, every book available freely on the Internet) and are taught how to use that data to craft something new, such as the blurb for a new novel.

The systems apply what they learn from such efforts to future endeavours and their responses become gradually more sophisticated and nuanced. The results are unique and — in a sense — original, but are still effectively a complex form of mimicry.

Why the excitement?

Generative AI's ability to quickly acquire new skills and perform them at high speed means it could help with all kinds of work now done by humans, such as drafting legal contracts or debugging software. Fortune 500 companies are now using enterprise versions of chatbots from OpenAI and its rivals to summarise documents, speed up coding tasks and draft e-mails. Goldman Sachs Group Inc said generative AI could do as much as a quarter of the work currently carried out by people. Analysts at UBS Group AG see the market for the technology easily exceeding $1tn.

How has generative AI evolved?

Much of the attention back in 2022 was on AI systems that can generate text and images. Today there are standalone AI services that can clone a person's voice, generate a song in seconds or create short videos. Increasingly, AI companies are focusing on "multimodal" systems that can process and respond to a range of inputs, including text, images and audio.

For example, an exasperated parent might be able to show an image of a math problem to a chatbot and ask for an explanation on how to solve it. Demis Hassabis, CEO of Google's AI lab DeepMind, showed off a prototype AI assistant that can respond to video inputs in real time. Generative AI is also being heavily integrated into more popular products. Google has added it to its core search engine. Apple is planning to bring OpenAI's technology to the iPhone, along with a suite of other AI tools, later this year.

What does it mean for an AI to reason?

For much of the past two years, ChatGPT users have grown accustomed to having the chatbot spit out near-instantaneous responses — some accurate, some not so much — to a wide range of prompts. But OpenAI's new 01 model will behave somewhat differently. Before responding, the new software will pause for a matter of seconds while, behind the scenes and invisible to the user, it considers a number of related prompts and then summarizes what appears to be the best response. This technique is sometimes referred to as "chain of thought" prompting. In a blog post, OpenAI referred to it as "thinking." In OpenAI's tests, this approach made less of a difference for queries about writing and editing, but people found it resulted in better answers for complex questions related to computer programming, data analysis and math problems.

"The next model update performs similarly to PhD students on challenging benchmark tasks in physics, chemistry, and biology. We also found that it excels in math and coding," the company said. "For complex reasoning tasks this is a significant advancement and represents a new level of AI capability."

What's the likely economic impact of generative AI?

That remains unclear. Federal Reserve Chair Jerome Powell said generative AI could boost productivity growth, but "probably not in the short run." Some economists foresee a leap in productivity triggering wage gains that will help workers recoup some of the earning power they've lost since the 2008 financial crisis.

A study by researchers at Stanford University and the Massachusetts Institute of Technology found that staff at one Fortune 500 software firm became 14% more productive on average when using generative AI tools. The lowest-skilled workers became 35% faster. What wasn't clear was the impact of this on their higher-paid colleagues, whose costlier skills may no longer be required.

In an optimistic scenario, skilled employees whose jobs get automated will find new work in growth areas created by generative AI. However, early signs pointed to a painful bout of upheaval. International Business Machines Corp plans to stop or slow hiring for thousands of roles it expects to be replaced by AI. Swedish buy now, pay later firm Klarna Inc said it would freeze hiring as ChatGPT cut down the time required for certain tasks. And language-learning software company Duolingo Inc chose not to renew about 10% of its contractors, partly due to AI.

What are generative AI's limitations?

The answers it pieces together from available published information can sound so authoritative that users may assume it has verified their accuracy. Stripped from useful context such as the source of the information, and with few of the obvious imperfections that often signal unreliable material, the content can be a minefield for someone who isn't sufficiently well-versed in a subject to notice a response that is biased, flawed or simply wrong.

AI chatbots have repeatedly made errors when asked for news about current events. Generative AI systems also amplify harmful biases and stereotypes found in the data on which they're built – a significant problem as the technology increasingly gets deployed into sensitive areas like hiring and healthcare. AI companies have struggled to address the bias problem: Google, for example, attempted a technical fix to make its image generator show more diverse outputs, but it resulted in the tool refraining from producing pictures of White people.

What does generative AI mean for society?

As these tools become more sophisticated, so does the potential for mischief-making. Some AI platforms have been taken down or tweaked to stop them from regurgitating hate speech, and ChatGPT allows users to flag distasteful responses to improve the system. But users have found workarounds. An AI might not pick up on gender or racial biases that a human would notice in books and other texts. It's also a potential weapon for deceit. For example, one AI audio deepfake of Joe Biden was used to urge people in New Hampshire not to vote in the US presidential primaries. Teachers worry about students getting chatbots to do their homework. Lobbying firms could use AI to fake thousands of different letters supposedly from citizens to influence the decisions of lawmakers.

In an open letter published in March 2023, 1,000 technologists and researchers called for a pause in AI development to allow more time to weigh the "profound risks to society and humanity." Instead, the technology continues to advance.