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**IAS ACADEMY**

*The New Learning Mantra*

# **VEDHIK**

## DAILY NEWS ANALYSIS

07 - MARCH 2022

## **FOREWORD**

We, at Team Vedhik is happy to introduce a new initiative - "Daily Current Affairs\_The Hindu" compilations to help you with UPSC Civil Services Examination preparation. We believe this initiative - "Daily Current Affairs\_The Hindu" would help students, especially beginners save time and streamline their preparations with regard to Current Affairs. A content page and an Appendix has been added segregating and mapping the content to the syllabus.

It is an appreciable efforts by Vedhik IAS Academy helping aspirants of UPSC Civil Services Examinations. I would like to express my sincere gratitude to Dr. Babu Sebastian, former VC - MG University in extending all support to this endeavour. Finally I also extend my thanks to thank Ms. Shilpa Sasidharan and Mr. Shahul Hameed for their assistance in the preparing the compilations.

We welcome your valuable comments so that further improvement may be made in the forthcoming material. We look forward to feedback, comments and suggestions on how to improve and add value for students. Every care has been taken to avoid typing errors and if any reader comes across any such error, the authors shall feel obliged if they are informed at their Email ID.

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# Quadrilateral queasiness

India cannot be forced to pick a side in the conflict, but Russia could test its resolve

**A**t a snap virtual meeting of the Quadrilateral Security Dialogue or Quad, comprising India, the U.S., Australia and Japan, leaders discussed the crisis of Russia's invasion of Ukraine along with more traditional topics of interest for the Dialogue, including territorial and maritime security across the Indo-Pacific. In the joint statement, issued after the summit, the four nations reaffirmed their commitment to a free and open Indo-Pacific, "in which the sovereignty and territorial integrity of all states is respected and countries are free from military, economic, and political coercion". The latest Quad meeting was in part likely motivated by the concern of the U.S., Australia, and Japan that India, in not explicitly condemning Russian President Vladimir Putin's decision to launch a ground offensive across the Russia-Ukraine border and to bomb Ukrainian infrastructure, might not be on the same page as the other Quad members *vis-à-vis* this conflict. They have not only condemned Russia's aggression but have also slapped Kremlin elites and organisations linked to them with crippling sanctions. India, contrarily, has abstained from three UN resolutions condemning Russia. There is also a considerable difference on the Russia-Ukraine issue in terms of the individual readouts of the Quad members. While the U.S., Australia and Japan directly called out Russia's attempt to unilaterally force changes to the status quo in Ukraine and vowed not to let such action occur anywhere in the Indo-Pacific, India's readout only referenced Ukraine in passing, in the context of establishing a new humanitarian assistance and disaster relief mechanism for this cause.

Russia's action has obviously posed complex questions for India's strategic calculus, even as New Delhi continues to be guided by the 21st century variant of its non-alignment paradigm, and by its need to remain close to Moscow, a major defence supplier. South Block is already well versed at playing hardball with the mandarins at the U.S. State Department over getting a CAAT-SA waiver for India's purchase of \$5.43 billion worth of the Russian Triumf missile defence system. While the discussions on the Ukraine crisis will continue at the Quad and across other plurilateral platforms where India and the U.S. work together for the greater good of the rules-based international order, the idea that NATO countries or even Russia can force sovereign nations with a proud history of non-alignment to pick a side in a complex geopolitical conflict is quite passé and eminently unviable in today's interdependent global arena. The Quad, for example, cannot afford to alienate India, a critical partner in the global-strategic plan to balance the rise of China as a potential Asian hegemon. Yet, India may find its resolve and patience with Russia tested should Russian occupying forces begin committing war crimes and human rights violations in contravention of the Geneva Convention, the Universal Declaration of Human Rights and other applicable global treaties.

# In sanctions bite, Nord Stream 2 in the cross hairs

A well chosen target, the massive gas pipeline is one of the key issues central to the Ukraine conflict



RANJAN MATHAI

Russia's attack on Ukraine has triggered "unprecedented" economic sanctions by the United States, though how deeply they damage the Russia-Europe energy relationship remains to be seen. The speed with which the U.S. declared the Nord Stream 2 pipeline to be "dead at the bottom of the sea" indicates that this massive gas pipeline is one of the key issues at the bottom of the conflict.

## Still a critical fuel

Despite global efforts to decarbonise energy, natural gas is set to remain one of the principal sources of primary energy till at least 2040. Europe is the world's second largest market for natural gas, and hence the battleground between the superpowers of hydrocarbon energy, the U.S. and Russia. Germany, despite a decade of "energiewende" (an 'energy turnaround' or the 'ongoing transition to a low carbon, environmentally sound, reliable, and affordable energy supply'), is still one of the world's largest importers of oil and gas. It is again at the epicentre, as it has been in earlier energy pipeline disputes.

The post-war European security order under the North Atlantic Treaty Organization (NATO) and the Warsaw Pact was unpinned by an energy order in which oil was sold to West Europe from West Asian/Middle Eastern fields controlled by U.S. companies; and to East Europe from the giant oil-fields of the Soviet Union. West Germany (the Federal Republic of Germany or the FRG) and other European countries had "economic miracles" and were drawn into the dollar denominated oil trade cycle, which supports U.S. global

dominance to this day. Problems arose in the 1960s when Soviet production expanded rapidly and their planned "Druzhba" pipeline network went beyond integrating East Europe, to offering West Europe both lower prices for oil and large orders for specialised pipes and transmission equipment. The FRG found the offer compelling and the U.S. fought to preserve market dominance by pressuring NATO partners into an embargo on pipe sales – albeit retroactively. The FRG's then 87-year-old Chancellor, Konrad Adenauer, finally acquiesced after a bitter internal debate. The Soviets built the pipeline with a two year lag; however, they only won a large share of the West European oil market after the West Asia/Middle East oil supply crises of the 1970s and fall in U.S. domestic production made it an importer.

## An energy transition

The 1970s European energy transition to natural gas led to the geo-economic linkage of giant Soviet gas fields to West European markets via pipelines through East Europe, again generating lucrative sales of large diameter pipes for German companies. The synergy of Germany's Ostpolitik with the Siberian pipeline worked during the U.S.-Soviet détente; but during the 1981-83 crisis over Soviet backed martial law in Poland, there was another showdown when the U.S. tried to stop the completion of the huge Siberian pipeline. The U.S. had no alternative to offer except coal; and the formidable German Chancellor, Helmut Schmidt, faced down U.S. sanctions, saying bluntly "the pipeline will be built". Built it was, and the U.S. gave up the sanctions within six months, switching to other tools to win the Cold War. The 1986 oil price crash caused by friendly Saudi Arabia which dented the Soviet economy may have been one.

The victorious U.S. then used NATO expansion into Eastern Europe and the Baltic States to create



a new European security order in the face of a diminished Russia, and a risk-averse European Union. Breaking up Russia's good friend Serbia in 1999 after 79 days of NATO bombing, was an early success. Plans to probe further into Georgia and Ukraine have however divided NATO. For the U.S., maintaining leadership in the face of Russia's determined pushback now requires curtailing the growing EU-Russia gas synergy as a strategic objective, combined with a 1960s style fight over market share.

## Impact of Putin's push

Russian President Vladimir Putin revived Russia by leveraging oil and gas production which provide 60% of exports, 25% of government revenue, and have boosted national reserves to \$600 billion. It can, and has used gas as an instrument of influence in its "near abroad". However, for the EU (60% of Russia's gas exports), and its main customer Germany, Russia has been a most reliable supplier right through the Cold War, the break-up of the Soviet Union, the division of the assets of the pipeline network with Ukraine and other successor states, and economic chaos under Russia's Boris Yeltsin. A new pipeline was built to Germany via Belarus and Poland; and Russia now supplies 35%-40% of the EU's gas needs. In the early 2000s, the EU noted the stability of Russia's gas deliveries. However in 2004, political instability in Ukraine began causing problems for

gas flow, and thereafter, work on the direct Russia-Germany link via the undersea giant Nord Stream project was planned.

The two Nord Stream pipelines are gamechangers as they can meet nearly all of Germany's import requirements, and are symbols of synergy with Russia. Crucially, however, they deprive Ukraine and East European transit countries of revenues and leave them dependent on Russia for continued supplies. Some have had to get Russian gas via eastward flows from Germany! Hence, their strident opposition to the Nord Stream project from the outset, and with US support they have launched the Three Seas Initiative to develop north-south gas connectivity using liquefied natural gas (LNG) imported via maritime terminals on the Baltic, Adriatic and Black Seas.

## The U.S. strategy

As in the 1950s, the U.S. can now deliver energy – LNG – to buttress its security umbrella. The shale gas revolution has made the U.S. the world's largest producer of gas; and as production surpassed the peak set in 1973, it has become a major exporter of LNG. The strategy of reducing Russia's grip on the lucrative EU gas market is thus being pursued ruthlessly for both strategic and commercial reasons. U.S. LNG exports to the EU have grown rapidly to 22 billion cubic meters (BCM) worth \$12 billion in 2021, and will go up sharply, if Nord Stream 2 remains non-functional and Germany has to set up LNG terminals instead. In case "green" activism curbs U.S. shale gas expansion, the geopolitically risk-laden effort to create a long-term Europe-Mideast gas nexus using the enormous gas reserves of Iran (and Qatar) could be reversed.

German Chancellor Olaf Scholz's support for Nord Stream 2 has been threatened since his assumption of office last December, which coincided with U.S. intelli-

gence leaks about the imminent invasion of Ukraine. The beleaguered leader was ambivalent even in early February when U.S. President Joe Biden audaciously announced in Mr. Scholz's presence, that in case of an invasion of Ukraine "there will no longer be a Nord Stream 2... We will bring an end to it". His hand has now been forced and regulatory certification of the pipeline is suspended; and Mr. Scholz announced a U-turn away from Ostpolitik to closer coordination with NATO.

## Key reasons, looking ahead

Nord Stream 2 is a well chosen target as the recently completed €10 billion asset is wholly owned by Russia's Gazprom unlike Nord Stream 1 (functional for a decade) which is jointly owned with European companies. Mr. Scholz's Green coalition partners are also sceptical about it. The Nord Stream project has larger capacity than all of Russia's current and planned gas pipelines to China; so it remains of great importance for Moscow. Nord Stream 1 survives, as Europe will suffer without it, but preserving market share in the EU requires Russia to keep gas also flowing through Ukraine.

The implications for the U.S.'s Indo-Pacific strategy, of the current focus on Europe are presently unclear. Much will depend on how Mr. Putin's gamble plays out: i.e. of a pre-emptive strike against Ukraine itself, rather than a "minor incursion", perhaps in Donbas, which Mr. Biden said would divide NATO over how to respond. Whether the EU, now sans the fervently NATO-inclined UK, is actually jolted enough to take on a military dimension is a question for the future. For the present, the U.S. aims to maintain preponderance at the western end of Eurasia with energy included in its arsenal.

Ranjan Mathai is a former Foreign Secretary. The views expressed are personal

## EXPLAINER

### The effects of the Russia-Ukraine conflict on maritime trade

How will the military invasion of Ukraine affect sea commerce? Will it affect the seafarer workforce?

M. KALYANARAMAN

**The story so far:** As Russia continues its military onslaught on Ukraine, the Western economies and its allies have taken retaliatory steps, in the form of heavy sanctions, to effectively paralyse the Russian economy. One area which is going to be heavily affected is the shipping industry as delays and shipping costs are expected to rise due to disruptions in the global supply chain.

**What has been the impact on shipping so far in Ukraine?** When the war started, some 15 sea ports in Ukraine were shut down. Around 140 ships that were berthed in the Ukrainian ports at that time have stayed in the ports since then. None of the ports or ships berthed in those ports have been attacked. Two ships have been attacked while in anchorage heading to or away from Black Sea routes for their ships.

For seafarers, the safest place in case of any accident is always the ship which has power, food and means to make water. Bunkers in ports have been identified for safely housing seafarers and ship crew have not moved out of their ships, says Sanjay Prashar, managing



A soldier, in front of Ukraine's Black Sea port of Mariupol on February 11, 2022. AFP

director of VR Maritime Services. One of the company's ships is stranded at a Ukrainian port. Some of the stranded ships in Ukrainian ports have Indian crew on board.

Barring occasional attacks, ports and nuclear facilities, as strategic assets have not seen much fighting or attacks so far, the war has involved the Russian Army and Air Force, not so much Naval attacks except a small operation in Kerch, says Pritam Banerjee, a logistics expert. Port cities such as Mariupol have been attacked from land but as Ukrainians

hold out and resist the invasion, Ukrainian president has warned of an imminent attack on the Odessa port by Russian warships. This would be a major escalation of the war. All the merchant ships will be under threat. As a direct consequence of the war, insurance premiums will go up for ships serving Black Sea ports.

**What has been the impact globally?** Crude oil prices have gone up 20% over the last week in part due to fears and also due to possible disruptions in supply. Some 15 ports in the Black Sea and gas through pipelines as well as ships in the Black Sea is home to the few warm water ports the country has and is the theater of the war. As crude oil prices go up, the price of fuel ship, called Bunker fuel, is going up as well. Fuel cost is the biggest contributor to the operating costs of a ship and the increase will have a cascading effect on shipping costs and freight.

The pandemic drove up container freight rates which have seen a further escalation. Pritam Banerjee however, says the escalation may only be short-term and is largely due to the oligopolistic control some firms have over container shipping. He explains that

Russia or even Ukraine matter little in container trade, so global container freight rates should not be affected greatly.

Bulk shipping including oil and gas tankers will be significantly affected. Russia and Ukraine are major traders in grain, minerals and oil. High insurance premiums, disruption in supply will hit the sector. In case of escalation, the Baltics and the North Sea shipping traffic may also be affected. War risk will hike insurance premiums.

While Russia may not attack in the Mediterranean, insurance costs may go up for ships serving those routes also, which are the hub of European trade.

**What is the role of Turkey in this conflict?**

Turkey controls the entry and exit of Black Sea and hence a seaway ship must pass through the Bosphorus. Some Russian naval ships, passing through the Bosphorus Strait, Turkey is not a signatory to the United Nations Convention on the Law of the Sea which sees the oceans as commons and allows warships innocent passage through territorial waters of a nation.

Turkey abides by the Montreux convention which gives it greater control

over the straits. Free passage is guaranteed for merchant vessels belonging to belligerents in war, especially if Turkey is not a belligerent. The convention also lays down clearly what is a warship and what is not. Having said that any interpretation to curb Russian maritime aggression will be a significant escalation and inflame the scenario.

**The pandemic saw a disruption in crew change in merchant ships. Will this conflict have a similar impact?**

After the start of the war is the share of Ukrainian and Russian seafarers in the global seafarer workforce. China, Philippines and India contribute significantly to the international seafarer workforce. Pritam Banerjee estimates that Russia and Ukraine together supply nearly 15% of the seafarers. It is common for seafarers to return to their countries to serve together on merchant ships. Their joining and disembarking merchant ships will be severely affected, mounting a challenge to the Manning requirements of global shipping. The pandemic had disrupted the free movement of crew and things were just about settling down.

M. Kalyanaraman is founding editor of [inmathi.com](http://inmathi.com)

## THE GIST

■ As crude oil prices go up, the price of ship fuel is also going up. Fuel cost is the biggest contributor to the operating costs of a ship and the increase will have a cascading effect on shipping costs and freight.

■ Russia and Ukraine are major traders in grain, minerals and oil so bulk shipping including oil and gas tankers will be significantly affected.

■ As Turkey abides by the Montreux convention, it has limited Russian naval ships from passing through the Bosphorus Strait which leads to the Black Sea.

# 15,920 evacuated, but it's a long wait in Sumy

"Under the Operation Ganga, so far 76 flights have brought over 15,920 Indians back to India. Out of these, 13 flights landed in the last 24 hours," said an official.

## Embassy's appeal

The Indian embassy in Hungary posted an "important announcement" on Twitter asking Indian students who are still in that country to report to designated contact points for return to India.

"Important Announcement: Embassy of India begins its last leg of Operation Ganga flights today. All those students staying in their OWN accommodation (other than arranged by Embassy) are requested to reach @Hungariacitycentre, Rakoczi Ut 90, Budapest between 10 a.m.-12 p.m.," it said.

Officials said over 21,000 Indians came out of Ukraine since the issuance of an advisory weeks before the conflict began. Out of these, 19,920 have already reached India, they said.

Indian student Harjot Singh, who was shot multiple times while trying to flee the Ukrainian capital Kyiv a few days ago, is returning to Delhi on Monday, Minister of State for Civil Aviation V.K. Singh said. "His passport was lost in the chaos," tweeted the Minister, who was dispatched to Poland to coordinate the evacuation efforts from there.

On March 1, medical student Naveen S.G. from Karnataka was killed in shelling in the Ukrainian city of Kharkiv when he ventured out to buy food for himself and fellow students.

The Ukrainian airspace has been shut since February 24 due to the Russian military offensive. Indian citizens stuck in Ukraine were

being airlifted once they crossed over to neighbouring countries such as Romania, Hungary, Slovakia and Poland.

However, evacuating those stranded in Sumy on the eastern side poses a formidable challenge because of the ceaseless bombing and shelling by the Russians. Exasperated over the delay in their evacuation, the students in Sumy had on Saturday posted a video clip declaring they had decided to risk the walk to the Russian border in biting cold amid the fighting, raising fears about their safety in the corridors of power in New Delhi.

Twenty-five-year-old Jisna Jiji, a medical student, said they had no option but to wait patiently as walking to the Russian border was fraught with danger.

Soon after the video went viral, the Indian government asked the students to remain in shelters and assured them they would be rescued soon.

Aashiq Hussain Sarkar, also a medical student, tweeted, "Every day at 6 AM students are waiting for buses on the road. We still believe today is the day. But they keep postponing the date everyday. So please Don't break our Hopes.#Sumy".

"We are still in Sumy. We have not got any update yet when will we be evacuated. But we cannot continue like this for longer. Our problems are increasing day by day. We appeal to the government to update us immediately," said a girl in a video message.

"There is no water here, electricity supply has been disrupted. There's no money in ATMs, girls don't have sanitary napkins," said another despairing student.

# 15,920 evacuated so far, but it's a long wait for 700 in Sumy

Staying put braving cold and hunger, trapped students hope for their rescue

PRESS TRUST OF INDIA

NEW DELHI

India has brought back over 15,920 nationals on 76 flights under the evacuation mission "Operation Ganga" launched following Russia's invasion of Ukraine, officials said on Sunday. However, nearly 700 students are trapped in Sumy, waging a grim battle for survival with supplies depleting fast and exit routes to safety blocked by fierce fighting.

Melting snow to slake their thirst and fast running out of food, hundreds of Indian students stand on roads every morning hoping "today is the day" when they will be rescued from the savagery of the war that has engulfed the nation. The wait, however, has got longer as fierce fighting blocks their way to safety across the Russian border.

They have abandoned the idea of undertaking an arduous journey to the Russian border on foot amid fusillades of artillery fire and missile barrages, a day after the Indian government assured them they will be evacuated safely.

The Indian embassy in Hungary suggested that the evacuation mission from the country is nearing completion as it is beginning the last leg of flights under the operation.



**Wave of relief:** An Indian student, evacuated from crisis-hit Ukraine, being welcomed by relatives on her arrival at the airport in Mumbai on Sunday. ■ PTI

India has been bringing back its nationals from Romania, Poland, Hungary, Slovakia and Moldova after they crossed over to these countries from Ukraine through land border transit points. The first flight came with the stranded Indians on February 26 from Bucharest.

According to the officials, around 2,500 Indians were evacuated on 13 flights in the last 24 hours. They said seven flights were scheduled over the next 24 hours to bring back stranded Indians.

**CONTINUED ON ▶ PAGE 10**

**MORE REPORTS ▶ PAGES 10 & 13**

# China's Ukraine calculus driven by rivalry with U.S.

## Highlighting U.S. responsibility for crisis remains key focus

**ANANTH KRISHNAN**

HONG KONG

If China's policymakers are facing a tightrope walk as they calibrate their response to the Ukraine crisis, caught between close ties with Russia and concerns that their stand will aggravate already fraught relations with the West, one abiding Chinese foreign policy concern is likely to tilt the balance.

One consistent theme in China's messaging since Russia's invasion of Ukraine has been highlighting U.S. responsibility for the crisis. "When the U.S. drove five waves of NATO expansion eastward all the way to Russia's doorstep," Foreign Ministry spokesperson Hua Chunying said on February 23, "and deployed offensive strategic weapons in breach of its assurances to Russia, did it ever think about the consequences of pushing a big country to the wall?"

Beijing has since expressed its support for Ukraine's sovereignty, although like India, it has abstained on UN Security Council resolutions condemning Russia. It is, also like India, primarily focused about the safety of its citizens and has been engaged in a similar evacuation effort to help Chinese students.

That aside, the broader context for Beijing's dual-track approach of highlighting Russia's "legitimate security concerns" while blaming the U.S. and NATO is what China's leaders have been highlighting, over the past few years, as a geopolitical moment with "changes unseen in a century".

Hu Xijin, the former editor-in-chief of the Communist Party-run *Global Times*, wrote last week that the conflict "is not simply a matter



Hua Chunying

between Russia and Ukraine, but a showdown between Moscow and NATO" that "poses challenges to Washington's power."

"The outcome of the conflict will have an influence on the whole of Europe, or even the world," he said.

### NEWS ANALYSIS

"If Moscow wins, and Putin gains the desired result of Ukraine's neutrality...it will also be indicative of weakening U.S. hegemony." On the other hand, he cautioned, the conflict could also "consolidate U.S. hegemony" and "unite the U.S. and the West". He also noted the conflict had exposed weaknesses in the military of China's close ally, Russia, which could end up even more dependent on China after this crisis, a development that would have particular repercussions for India. The outcome will be closely followed in Beijing, already being seen as a moment as pivotal as the break-up of the Soviet Union in 1991.

The impact of Western sanctions bringing Russia to its knees - and how China might face a similar situation in the future - will be one particular area of focus, as also how Beijing could steel itself for such a scenario. So far, there are no signs that Beijing wants to expose itself to the repercussions of those

sanctions by stepping in a big way to support Russia, and reports have said Chinese state-owned banks are already restricting financing for Russian commodities.

"China is likely also shocked to watch Western countries butcher Russia's economy and isolate its government," scholar Tong Zhao of Carnegie China observed on Twitter. "It probably swears never to allow this happen on itself. This could further strengthen Mr. Xi's long-standing preference of self-reliance and autarky, believing China must be able to prevent external strangulation." That would further push decoupling with the West.

He noted China "failed to predict the war", although Beijing hosted Vladimir Putin in early February and hailed a relationship with "no limits". Some observers in Beijing, which pooh-poohed U.S. warnings, believe China may have wrongly assumed Russia had limited actions in mind such as recognising the two breakaway republics, rather than an all-out invasion of the entire country.

Mr. Zhao observed China now "faces two strategic paths going forward", either "double down on the current no upper limits...close alignment with Russia" or "seize the opportunity to improve ties with the West".

The latter would mean an unexpected, albeit tactical, pause in what is still China's all-consuming priority, which remains the U.S. "This could be a pivotal moment," Mr. Zhao said, "as how China makes this strategic choice would have the most profound geopolitical consequences for China's future".

# Mariupol evacuation fails for second day

Ukraine, Russia trade blame for ceasefire failure; Putin speaks with Turkish and French Presidents

REUTERS  
LVIV/KYIV

An attempt to evacuate residents from the besieged southern Ukrainian city of Mariupol collapsed for a second day on Sunday, the International Committee of the Red Cross (ICRC) said, blaming an insufficiently clear agreement between the two sides.

"Amid devastating scenes of human suffering in Mariupol, a second attempt today to start evacuating an estimated 2,00,000 people out of the city came to a halt," the ICRC said in a statement.

Days of heavy bombardment have left residents of the coastal city trapped without heat, power and water. The city had about 4,00,000 inhabitants before Russia launched its invasion of Ukraine on February 24.

Mariupol city council said a convoy of evacuees was not able to depart on Sunday because Russian forces continued shelling despite a ceasefire agreement. A similar evacuation plan was thwarted by shelling on Saturday.

"It is extremely dangerous



**Safe passage:** People waiting to board a bus at a temporary accommodation centre, after fleeing the Russian invasion of Ukraine, in Korczowa, Poland, on Sunday. • REUTERS

to take people out under such conditions," the city council said in a statement.

Meanwhile, the Ukrainian authorities said about 400 people fleeing the nearby town of Volnovakha under a similar evacuation plan came under Russian fire on Sunday. They did not say if there were any casualties.

Russian President Vladimir Putin in a telephone call

with his French counterpart Emmanuel Macron blamed Kyiv for failed civilian evacuations. He also spoke with Turkish President Tayyip Erdogan, who appealed for ceasefire in Ukraine.

#### Airport destroyed

In Kyiv, Ukrainian soldiers bolstered defences by digging trenches, blocking roads and liaising with civil

defence units as Russian forces bombarded areas nearby. "Positions are prepared, we've fitted them out and we are simply waiting to meet them here," said a soldier. "Victory will be ours."

Ukrainian President Volodymyr Zelenskiy said Russian rockets destroyed the civilian airport of the central-western region capital of Vinnytsia on Sunday.

# Russia sanctions may not dent Army preparedness

India keeps close watch as PLA gears up for Tibet exercises

DINAKAR PERI  
NEW DELHI

As the Chinese People's Liberation Army (PLA) is set to hold its annual summer exercises in Tibet, the armed forces are keeping a close tab to ensure China does not resort to any misadventure along the Line of Actual Control (LAC), especially as the global attention is on Ukraine.

Defence officials also say the Army's preparedness is unlikely to be impacted due to sanctions on Russia.

While the Air Force may have some impact, given its large Russian inventory, which is being assessed, the Army, mainly the infantry along with its support elements, have least exposure to Russia, one official noted.

The armed forces have also made significant emergency procurements in the last two years since the standoff in eastern Ladakh and have stocked up on spares and ammunition. So, there shouldn't be any immediate urgency for spares and other requirements, several officials noted.

For the Army, its armoured corps is almost entirely Russian origin but the



An Indian soldier operating an L70 anti-aircraft gun near the LAC.

Infantry has the AK-47 rifles and not much beyond that and similarly the artillery is also quite diversified, officials noted.

#### Impact assessment

The Defence Ministry is assessing the impact the western sanctions on Russia can have on timely supply of spares and support as well as execution of deals in the pipeline, officials said.

This also includes looking at the various payment options that would be available in the backdrop of several restrictions imposed by the West on Russia.

For the \$5.43-billion S-400 deal, signed in Octo-

ber 2018 and deliveries of which are under way, India and Russia had worked out payments through rupee-rouble arrangement as reported by *The Hindu* earlier.

"There is no unusual activity on the Chinese side since the Russian attacks on Ukraine. However, in March-April the PLA mobilises a large number of troops for the annual exercises in Tibet. So, we are keeping a close watch," a senior official said.

"There cannot be a repeat of 2020 and we are more than prepared and cautious this year, especially in case they attempt anything in the backdrop of the crisis in Ukraine," a senior official said. "We will keep a close watch."

To questions on the ongoing standoff, Army Chief Gen. Manoj Naravane had acknowledged in the past that every summer, the PLA troops come to Tibet for training in the grounds which are 500-1,500 km from the LAC but in April 2020 moved towards the LAC and transgressed at several locations resulting in the standoff since early May 2020.

# From Jan. 2012, NSE staffers flagged 'early access' of brokers

'No follow-up action taken despite an official raising the issues and risks'

DEVESH K. PANDEY

NEW DELHI

A key issue that had allegedly created a potential advantage for some stock brokers over the others was the absence of "load balancers" and 'randomisers' for the Tick-by-Tick (TBT) data servers of the National Stock Exchange (NSE).

The risks involved were discussed within the exchange from January 2012, according to Securities and Exchange Board of India (SEBI) records.

A "load balancer" ensures that the load is evenly distributed among the TBT servers and the "randomiser" randomly picks a connection to begin data dissemination, rather than starting with the first connection each time.

## Preferential access

As part of the probe against broker firm OPG Securities and others, on the allegation that they colluded with unknown NSE data centre staffers to gain preferential access to the market feed, the Central Bureau of Investigation (CBI) has collected the relevant papers from SEBI to



Absence of randomisers gave split-second advantage to the stock broker connecting first to the server. ■REUTERS

examine all the related issues.

In its first information report (FIR), the agency has alleged that Sanjay Gupta of OPG Securities, with the help of his brother-in-law Aman Kokrady, managed the NSE data centre staff to get inputs on the switching-on time of exchange servers, which helped the firm in being mostly the first to log on to the servers.

It is alleged that the market information was then being passed on to the brokers attached with the co-location facility via TBT system architecture, which gave split-second advantage to the stock broker connecting first to the server over the

others. As noted in its February 2021 order against OPG Securities and others, through an e-mail dated January 4, 2012, an NSE official named Hozefa Poonawala had raised the issues and risks related to the absence of load balancers.

## Inherent advantage

"No follow-up action with regards to this email was observed," said the order. Besides, one Smriti Kaushik had forwarded an e-mail dated January 3, 2012, to some colleagues, which recommended use of load balancer for issues such as hardware failure and balancing of loads.

Deloitte, in its forensic re-

port submitted to the NSE on December 23, 2016, noted: "The absence of load balancers appears to have created advantages for certain members due to manual intervention. In addition, the absence of randomisers on the TBT dissemination servers seem to create an inherent advantage in receiving ticks to members connecting first..."

Even when the stock exchange introduced the load balancer during October 2012, the CBI alleges that Mr. Gupta – in connivance with the NSE data centre staff – also got his firm connected to the exchange's backup servers, which had "zero load" and therefore provided far better and faster access to the market feed to OPG Securities.

The CBI FIR also alleges that to ensure a favourable report from the SEBI on the inquiry carried out by the Board against OPG Securities, as regards the misuse of TBT architecture, Mr. Gupta had influenced some SEBI official "for which bribe money was exchanged". This aspect is also under investigation.

# CBI arrests former NSE MD Chitra Ramkrishna

Probe to look into preferential access to exchange server

DEVESH K. PANDEY  
NEW DELHI

The Central Bureau of Investigation (CBI) on Sunday arrested Chitra Ramkrishna, former Managing Director of the National Stock Exchange (NSE), in a case registered in May 2018, to probe the alleged abuse of the exchange's server architecture for granting preferential access of market data to a stock broker, ahead of others.

The development came days after former NSE Group Operating Officer Anand Subramanian was arrested by the agency in the case.

Ms. Ramkrishna, who worked with the exchange from the early 1990s, was its Managing Director and Chief



Chitra Ramkrishna

Executive Officer from April 2013 to December 2016. More arrests are likely soon in the case.

On February 11, the Securities and Exchange Board of India (SEBI) levied penalties on Ms. Ramkrishna, Mr. Subramanian, and former NSE

MD Ravi Narain on account of multiple violations, including irregularities in Mr. Subramanian's appointment as a Chief Strategic Adviser and his re-designation as the Group Operating Officer and Adviser to the then NSE MD.

Subsequently, the Income Tax Department had also conducted searches on the premises of Ms. Ramkrishna and Mr. Subramanian in Mumbai and Chennai, while the CBI issued look out circulars against the two and Mr. Narain, following which their statements were recorded by the agency.

CONTINUED ON ► PAGE 10  
FROM JAN. 2012, NSE STAFFERS FLAGGED VIOLATIONS ► PAGE 12

# How book-built IPOs work

Book building allows issuers to present a 'price band' to investors. An auction helps 'discover' the final price of shares

AARATI KRISHNAN

As LIC prepares for its Initial Public Offer (IPO), many investors who are completely new to the market are looking to apply in it. Here's what you need to know about how such offers work, in order to put in a successful bid.

## Type of offer

When companies that have been promoter-controlled decide to tap public markets, they first decide on the kind of offer they'd like to make. Companies that need money for expansion make a fresh issue of shares. Those like LIC, where the promoter is looking to sell their shares to the public, make offers for sale (or OFS). SEBI regulations also allow companies to unveil either a fixed price IPO (subject to some conditions) or a book-built IPO.

Fixed price IPOs are straightforward with the company selling shares at a price it decides on. Book-built offers present a 'price band' to investors and conduct an auction to 'discover' the final price for their shares. LIC's IPO is an offer for sale by the Government of India which is taking the book-built route.

## The groundwork

When companies go public, SEBI regulations require them to share voluminous information with their new investors on their history, operations, finan-

cials, management and the risk factors that they encounter in their business. This information is packed into the company's prospectus which is first shared with SEBI for comments. Companies making book-built IPOs file a Draft Red Herring Prospectus or DRHP (so called because it has all details except the pricing of the shares), which is available on SEBI's website until it is approved.

In IPOs that are heavily over-subscribed, there may not be enough shares to allow even one lot to all retail applicants. They then choose allottees through a draw of lots

As DRHPs tend to be voluminous, it pays to read them in the draft stage itself on SEBI's website to acquaint yourself with the business. Once it is approved, you can find it on the website of the company and the lead managers to the issue. Prior to the offer, companies may also hold conference calls with analysts and media. You can tune in to these to get clarifications on the grey areas or risk factors to the business.

As the offer is being readied, companies undertake roadshows with global and local institutional investors to gauge their appetite and the prices at which they're likely to subscribe to the offer.

## The quota system

In the Indian context, retail investors often burn their fingers bidding in exorbitantly-priced IPOs from doubtful issuers. To ensure they have a better experience, SEBI rules require all companies making IPOs to carve out substantial portions of their shares for institutional investors such as pension funds, insurance companies, mutual funds, foreign portfolio investors and so on. These investors are described as Qualified Institutional Bidders (QIBs). The biggest chunk of shares sold in any book-built IPO is reserved for QIBs, followed by retail investors and NIIIs. Retail investors are individuals bidding for shares valued at up to ₹2 lakh per application. Non-Institutional Investors (NIIs) are individuals bidding more than ₹2 lakh per application.

In profitable companies that meet certain criteria, 50% of the shares being sold are reserved for QIBs, 35% for retail investors and 15% for NIIs. In non-profitable companies, the QIB quota is set higher at 75%, with 15% for NIIs and 10% for retail folk. The quota system is meant to ensure that if an IPO does not get sufficient bids from the big guys, it fails to go through. Retail investors can also take their cues on the price

at which QIBs bid, to gauge appetite for the offer.

Besides these categories, SEBI also allows IPO-bound companies to allot shares to QIBs who sign up to be 'anchor investors' before the book-building process starts. In theory, the enthusiasm that QIBs and anchor investors show for an IPO is supposed to help retail investors gauge if an IPO is worth it. But in reality, institutional investors too can get carried away by euphoric markets and the prospect of quick gains on an IPO, so QIB or anchor subscriptions may not

be good gauges of a company's quality.

## How auction works

The price at which you receive allotments in a book-built offer is decided by an auction process. Based on its roadshows, the IPO-bound company sets a price band for the issue. The band is announced at least five days prior to the offer opening.

Book-built offers are typically open for five days and conducted electronically. Book-built offers in India use the Dutch auction method to arrive at the final price.

That is, the offer gets priced at the highest level at which all the shares can be sold. This price is called the 'cutoff' price. While QIBs and NIIs are required to bid within

the price band, you as a retail investor can simply choose to bid at the 'cutoff price' finally decided by the auction. Once the auction window closes, all investors who bid at prices equal to or higher than the cutoff price are eligible for allotments.

## Allotment scramble

When IPOs are much in demand during bull markets, bidding alone may not guarantee you allotment. Whether you actually receive shares will depend on the extent to which the retail quota in the IPO is over-subscribed.

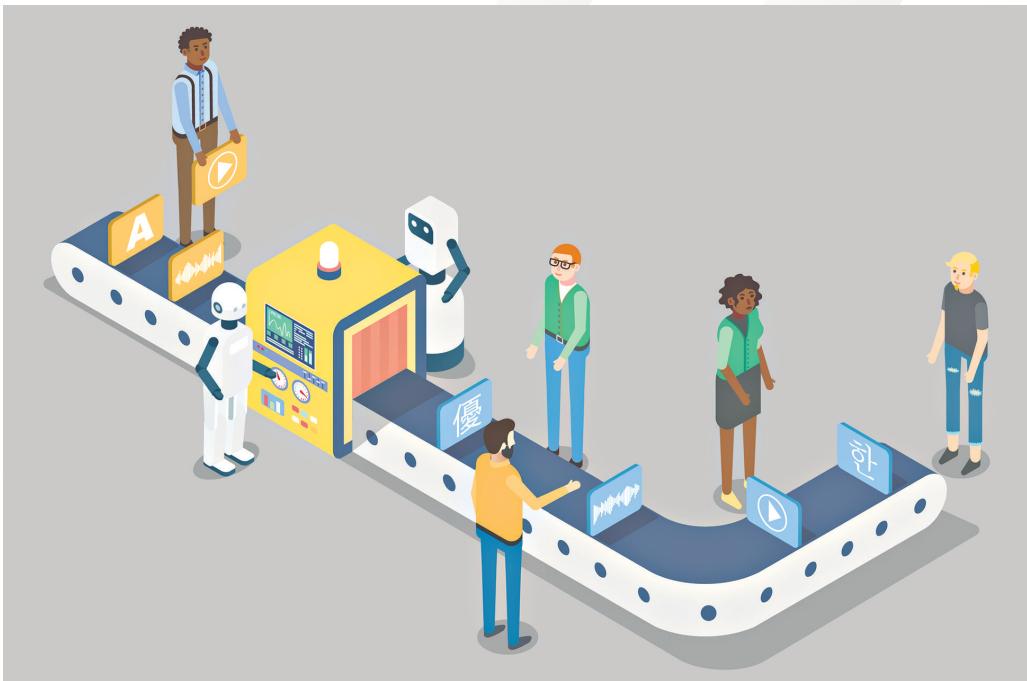
To ensure that retail investors don't get turned away too often in IPOs, SEBI rules require companies to allot at least one lot of shares to every retail bidder. But such allotments are only possible when IPOs have retail quotas that are not fully subscribed or feature a flat over-subscription.

In heavily over-subscribed IPOs, issuers find there are not enough shares to allot even one lot to all their retail applicants. In such cases, they choose the folk who will get one lot through a draw of lots.

To beat this, some investors put in multiple applications using demat accounts of family members.

But luck still plays a role in deciding whether or not you get to participate in fancied IPOs.





CACHE

# In the age of multilingual machines

Computer based automatic translation is an evolving field expected to improve in the coming years

## THE GIST

■ In the 1980s, Statistical Machine Translation (SMT) became popular. It took as input hundreds of documents that were already translated by humans and created probability distributions of when each word or phrase in a target language appears for the corresponding input in a different language.

■ Another successful technique was "word embedding" wherein a matrix of numbers enabled Artificial Neural Networks (ANN) to identify clusters of words with semantic relations.

■ This eventually led to Neural Machine Translation (NMT) in which the ANN performs 3 different operations of "encode", "attention" and "decode" to understand the complexities within language and to translate to multiple languages.

S. VARAHASIMHAN

Translation has always been a difficult task. While translation is a creative endeavour when literary works are involved, translation for purposes of administration, governance and tourism is a mundane but important necessity. With the advancements in computer technologies, translation has become easier and immediate. For example, Google Translate, a popular product available on the internet and which you might have used already, translates billions of words per day.

### Translation techniques

Computer-based translation developed from the 1950s and the idea was to look for words in the target language with rules keyed into computer software for grammar, syntax and idioms. In the 1980s, Statistical Machine Translation (SMT) became popular: it took as input hundreds of documents that were already translated by humans (from the UN and from government departments) and created probability distributions of when each word or phrase or sentence in a target language appears for the corresponding input in a different language. SMT then uses these probabilities to predict what the translation is for a new input sentence. This technique was widely popular and is still a good solution. When Google Translate was introduced in 2006, it used this technique.

Another successful technique that was explored was to apply mathematics to model sentences as matrix of numbers. This is called "word embedding" and it enables Artificial Neural Network (ANN) to identify clusters of words with semantic relations – for example, when hundreds of sentences are given as input, word embedding can form clusters of related individuals like birds, nationalities, financial phrases etc. This semantic ability is possible because similar words are used

in similar contexts: for example, in general, wild animal nouns are used in the context of forest, zoos etc. and thus a cluster of animal nouns can be formed. This idea was made popular in the 1950s by the British linguist John Rupert Firth when he said "You shall know a word by the company it keeps". This technique can be seen in action in auto-completion: when you type a few words during search (for example in Google), many potential choices are recommended to auto-complete what you type.

**The idea behind computer-based translation was to look for words in the target language with rules keyed into computer software for grammar, syntax and idioms**

Word Embedding, i.e., the mathematical representation of words and sentences as matrices of numbers to identify semantic relations, contributed to advancements in Neural Machine Translation (NMT). In NMT, Artificial Neural Network (ANN) performs the operations of "encode", "attention" and "decode": here to "encode" means to continuously augment the meaning based on the list of words read so far. This can be understood better with an example. Assume we assign a value of 4 to the word "bank" when it occurs beside a river but a value of 6 to the word "bank" when it is a financial institution. Now consider an example input "He crossed the river to reach the bank". When NMT reads the word "crossed", it starts to focus on clusters like bridge, river, channel, sea etc. And when NMT reads "river", it keeps its focus on words associated with "river" and typical places around it, gleaned from past examples. Finally when NMT reaches "bank", NMT knows that we are talking about "river" bank (and not about a "financial

institution") and it assigns the value 4 instead of 6. This value of 6 is carried forward to the next sentence, and thus context is preserved. This assigning of values to each word based on context is the "encode" operation. Then the encoded sentence is used to predict the first translated word, say TI, by calculating probabilities of suitable potential output words. This assigning of probability weights is called "attention" process. During the "decode" operation, each previous translated word and the encoded input are used along with probability weights to generate one output word in each step.

### Understanding complexities

Yet another recent advancement in Neural Machine Translation (NMT) is "Transformers" which introduces additional intermediate steps in NMT by iterating multiple times the "Attention" step to fine tune the probability weights of the potential output words.

Popular examples are sentences like "The animal didn't cross the river as it was wide" and "The animal didn't cross the river as it was tired". The meaning of the underlined "it" is different in the two sentences (referring to the river in the first sentence but to the animal in the second) but with Transformers, NMT resolves accurately even such complexities.

With the adoption of NMT, computers can translate to multiple languages. For example, Google Translate can handle more than 100 languages and can translate between any pair of languages in this group. In commercial applications like the mobile phone and in the software industry, NMT is the current preferred choice to perform translations. Automatic translation is an evolving field and more improvements are expected to happen in the coming years.

S. Varahasimhan is a senior employee at a software product MNC in Chennai.

# Locally made trainer aircraft finishes sea trials

HANSA-NG is reportedly one of the most advanced trainers

JACOB KOSHY

NEW DELHI

A first-of-its-kind indigenous aircraft trainer, HANSA-NG, developed by the CSIR-National Aerospace Laboratories (CSIR-NAL), has completed sea-level trials in Puducherry, a necessary condition before evaluation by the Directorate General of Civil Aviation (DGCA).

HANSA-New Generation is reportedly one of the most advanced flying trainers, powered by a Rotax digital control engine with features such as a composite light-weight airframe, a glass cockpit, a bubble canopy with a wide panoramic view, and electrically operated flaps.

The CSIR-NAL says the aircraft is designed to meet the need of flying clubs in India for trainer aircraft.

"It is an ideal aircraft for commercial pilot licensing due to its low cost and low fuel consumption. NAL has already received more than 80 nos. of LoIs [letters of intent] from various flying clubs," the organisation said in a statement.

The aircraft had so far completed 37 flights and 50



**On the ramp:** The HANSA-NG aircraft being rolled out at the CSIR-NAL in Bengaluru on March 31, 2021. ■ SUDHAKARA JAIN

hours of flying and a few more were necessary before getting "type certification" by the DGCA. This certification process is likely to be completed by April and thereafter, industry will begin to manufacture the aircraft.

## Cruise to Puducherry

For the sea trials, the aircraft was flown from Bengaluru to Puducherry covering 140 nautical miles in an hour and a half at a cruising speed of 155 kmph on February 19. The objectives were to evaluate handling qualities, climb and cruise performance, baulked landing and structural performance, including positive and negative G-forces, and power

plant and other systems performance.

CSIR-NAL said in a statement that "all the objectives of the sea-level trials are met", and the aircraft was being ferried back to Bangalore, the headquarters of the CSIR-NAL.

The two-seater Hansa-NG, a revamped version of the original Hansa developed three decades ago, had a successful maiden flight on September 4 when it took off from the HAL airport in Bengaluru and flew for about 20 minutes.

The CSIR-NAL has said the aircraft will be certified within the next four months before it gets inducted into service.

# Conflict and a 'settings change' for social media

A clear protocol that governs such platforms is a must given their intersection with global public life in critical situations



SAPNI G.K.

The conflict between Russia and Ukraine has brought multiple questions to the fore on the validity of international law. Fingers have been pointed at the accepted norms of state behaviour. Cyberspace is no alien to these questions, where *ad hoc* standard setting has been practised as a norm for decades now.

#### Cover of 'tech neutrality'

The challenges specific to the case now – the Ukraine conflict, where Russia is clearly the aggressor state – are not new either. Armed conflicts within and between states have played out in cyberspace for years. It is no surprise then to see the same dynamics play out on social media platforms. The increased attention is undoubtedly a function of the location of the conflict – Europe. The struggles of the Ukrainian population facing Russian aggression are by no means to be ignored, but the world outside Europe and North America has seen more than its share of conflicts, materialising and exacerbating the troubles of kinetic conflict through cyberspace. Social media platforms have gone by the mantra of "tech neutrality" to avoid taking decisions that may be considered political for too long.

The years that have passed have seen an active ignoring of the concerns around social media platforms during a conflict. It does not

help that the harbingers of a free and open world did little to create norms for social media as a new dimension of conflicts. This worrying but unaddressed concern has been a looming threat since the world learned about its use by the Islamic State in the early 2010s, and continues to complicate our understanding of the limits of warfare. The lack of clear systems within social media companies that claim to connect the world is appalling. It is time that they should have learned from multiple instances, as recent as the Israeli use of force in Palestine.

#### Corporations and problems

In the context of conflict, social media platforms have multiple challenges that go unaddressed. Content moderation remains a core area of concern, where, essentially, information warfare can be operationalised and throttled. These corporations do not have the obligation to act responsibly as is expected of a state. Yet, their sheer magnitude and narrative-building abilities place a degree of undeniable onus on them. After years of facing and acknowledging these challenges, most social media giants are yet to create institutional capacity to deal with such situations. *Ad hoc* responses to many predictable scenarios do not create an image of responsible action from such corporations.

Additionally, they also act as a conduit for further amplification of content on other platforms. Major social media platforms such as Facebook, Instagram, and Twitter also provide space for extremist views from fringe platforms, where the degree of direct relation to the user generating such content is blurred. Even though these



GETTY IMAGES/STOCKPHOTO

big platforms create special teams to handle such content, the magnitude overwhelms the teams that are sparingly staffed. It is also a concern that the mascots of the liberal world where such fringe social media platforms are registered do little to regulate them.

#### Technology falls short

Misinformation and disinformation are thorny challenges to these platforms. Algorithmic solutions are widely put to use to address them. These include identification of content violative of their terms, reducing the visibility of content deemed inappropriate by the algorithm, and in the determination of instances reported to be violative of the terms by other users. More often than not in critical cases, these algorithmic solutions have misfired, harming the already resource-scarce party. This reiterates human ingenuity and sensitivity to context. It is an essential ingredient to thwarting nefarious activity on social media platforms that cannot be outsourced to technology.

Instances such as these are an opportunity for these corporations to demonstrate their commitment to the values they profess. They should not stop at the point of creating small-over-worked teams with minimal un-

derstanding of the geographical and cultural dimensions of problems. The operational realities of these platforms require that the safety of users be prioritised to address pressing concerns, even at the cost of profits.

There was no unpredictability over conflicts in the information age spilling over to social media platforms. It did not even require pre-emption, since these have been recurrent events in the past decade. The international community and the liberal world order had to be proactive but failed to do so. We have missed the chance to have established a clear protocol on balancing the business interests of social media platforms and their intersection with global public life in critical situations. Though late, it would be valuable to have insights and clear frameworks to guide the behaviour of states and these corporations in cases of conflict, which will inevitably spill over to social media platforms in today's information age.

#### India has a role

For India, there are many lessons. India's strategic position in the global order appears to be diminishing. The time is ripe to set that right and gain currency in the developing world order. The ruling party seems to be adept at using social media platforms to set a domestic narrative to its liking. However, India is yet to demonstrate any such aptitude before the international community. It will be useful to add that to the Indian agenda on all matters international.

The lack of coherent norms on state behaviour in cyberspace as well as the intersection of business, cyberspace, and state activi-

ty is an opportunity for India. Indian diplomats can initiate a new track of conversations here which can benefit the international community at large. India should ensure that it initiates these conversations through well-informed diplomats. Ultimately, this will contribute to maintaining a rule-based word order that can greatly benefit India.

#### Transparency, accountability

Finally, it is necessary to reassess the domestic regulatory framework on social media platforms. Transparency and accountability need to be foundational to the regulation of social media platforms in the information age. The moral standing for initiating any change to the global order must stem from a domestic policy that reflects the protection of the interests of the people over that of the political masters. We must stray away from the trend of regulatory norms that are deeply infringing on the rights accorded in a democracy.

Uncertainties of conflict overwhelm people and institutions. The dangerous conflation of social media as the civilian public square and site of international conflict will not bode well. A protocol that outlines the norms of behaviour on social media during such situations can help in addressing the multitude of evolving factors. It is in our national interest and that of a rule-based global polity that social media platforms be dealt with more attention across spheres than with a range of reactionary measures addressing immediate concerns alone.

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General Studies Paper I	
A	History of Indian culture will cover the salient aspects of art forms, literature and architecture from ancient to modern times;
B	Modern Indian history from about the middle of the eighteenth century until the present-significant events, personalities, issues;
C	Freedom struggle-its various stages and important contributors / contributions from different parts of the country;
D	Post-independence consolidation and reorganization within the country;
E	History of the world will include events from 18 <sup>th</sup> century such as industrial revolution, world wars, re-drawal of national boundaries, colonization, decolonization,
F	Political philosophies like communism, capitalism, socialism etc.-their forms and effect on the society
G	Salient features of Indian Society, Diversity of India;
H	Effects of globalization on Indian society;
I	Role of women and women's organization;
J	Social empowerment, communalism, regionalism & secularism
K	Salient features of world's physical geography;
L	Geographical features and their location- changes in critical geographical features (including water bodies and ice-caps) and in flora and fauna and the effects of such changes;
M	Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc.
N	Distribution of key natural resources across the world (including South Asia and the Indian subcontinent);
O	Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India);
P	Population and associated issues;
Q	Urbanization, their problems and their remedies

### General Studies Paper II

A	India and its neighbourhood- relations;
B	Important International institutions, agencies and fora- their structure, mandate;
C	Effect of policies and politics of developed and developing countries on India's interests;
D	Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.
E	Indian Constitution, historical underpinnings, evolution, features, amendments, significant provisions and basic structure;
F	Comparison of the Indian Constitutional scheme with other countries;
G	Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein; Inclusive growth and issues arising from it;
H	Parliament and State Legislatures - structure, functioning, conduct of business, powers & privileges and issues arising out of these;
I	Structure, organization and functioning of the executive and the judiciary, Ministries and Departments;

J	Separation of powers between various organs dispute redressal mechanisms and institutions;
K	Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional bodies;
L	Statutory, regulatory and various quasi-judicial bodies;
M	Mechanisms, laws, institutions and bodies constituted for the protection and betterment of these vulnerable sections;
N	Salient features of the Representation of People's Act;
O	Important aspects of governance, transparency and accountability, e-governance- applications, models, successes, limitations, and potential;
P	Citizens charters, transparency & accountability and institutional and other measures;
Q	Issues relating to poverty and hunger,
R	Welfare schemes for vulnerable sections of the population by the Centre and States, Performance of these schemes;
S	Issues relating to development and management of social sector / services relating to education and human resources;
T	Issues relating to development and management of social sector / services relating to health

### General Studies Paper III

A	Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment;
B	Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth;
C	Inclusive growth and issues arising from it;
D	Infrastructure Energy, Ports, Roads, Airports, Railways etc. Government budgeting;
E	Land reforms in India
F	Major crops, cropping patterns in various parts of the country, different types of irrigation and irrigation systems;
G	Storage, transport and marketing of agricultural produce and issues and related constraints;
H	e-technology in the aid of farmers; Technology Missions; Economics of Animal-Rearing.
I	Issues of buffer stocks and food security, Public Distribution System- objectives, functioning, limitations, revamping;
J	Food processing and related industries in India – scope and significance, location, upstream and downstream requirements, supply chain management;
K	Issues related to direct and indirect farm subsidies and minimum support prices
L	Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology;
M	Indigenization of technology and developing new technology;
N	Developments and their applications and effects in everyday life;
O	Issues relating to intellectual property rights
P	Conservation, environmental pollution and degradation, environmental impact assessment
Q	Disaster and disaster management
R	Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security;
S	Money-laundering and its prevention;

T	Various forces and their mandate;
U	Security challenges and their management in border areas;
V	Linkages of organized crime with terrorism;
W	Role of external state and non-state actors in creating challenges to internal security;
X	Linkages between development and spread of extremism.

#### General Studies Paper IV

A	Ethics and Human Interface: Essence, determinants and consequences of Ethics in human actions;
B	Dimensions of ethics;
C	Ethics in private and public relationships. Human Values - lessons from the lives and teachings of great leaders, reformers and administrators;
D	Role of family, society and educational institutions in inculcating values.
E	Attitude: Content, structure, function; its influence and relation with thought and behaviour;
F	Moral and political attitudes;
G	Social influence and persuasion.
H	Aptitude and foundational values for Civil Service , integrity, impartiality and non-partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker sections.
I	Emotional intelligence-concepts, and their utilities and application in administration and governance.
J	Contributions of moral thinkers and philosophers from India and world.
K	Public/Civil service values and Ethics in Public administration: Status and problems;
L	Ethical concerns and dilemmas in government and private institutions;
M	Laws, rules, regulations and conscience as
N	sources of ethical guidance;
O	Accountability and ethical governance; strengthening of ethical and moral values in governance; ethical issues in international relations and funding;
P	Corporate governance.
Q	Probity in Governance: Concept of public service;
R	Philosophical basis of governance and probity;
S	Information sharing and transparency in government, Right to Information, Codes of Ethics, Codes of Conduct, Citizen's Charters, Work culture, Quality of service delivery, Utilization of public funds, challenges of corruption.
T	Case Studies on above issues.