THE HINDU ANALYSIS

21sth March 2024

by saurabh pandey

THE HINDU

challenges faced :-

(i) The EU has opted carbon neutrality. It mean if any product which emits carbon or in its making, carbon is emitted, the EU may reject such products or levy ~~has~~ heavy taxes on it.

(ii) The trade route between India and Europe passes through the Red Sea, into the Gulf of Aden, which is under the terror of Somali pirates capturing ~~so~~ cargo ships.

(iii) Due to such terror, if the trade route is changed through the Cape of Good Hope, South Africa, a lot more time and fuel will be required, which would increase the prices of the goods.

(iv) The Houthis attack in Israel has wedged the Israel-Palestine war. This has stopped the development of The IMEC trade corridor

(v) China has been posing maritime challenges through Maldives and Srilanka and diplomatic challenges by influencing Iraq to sponsor terrorism.

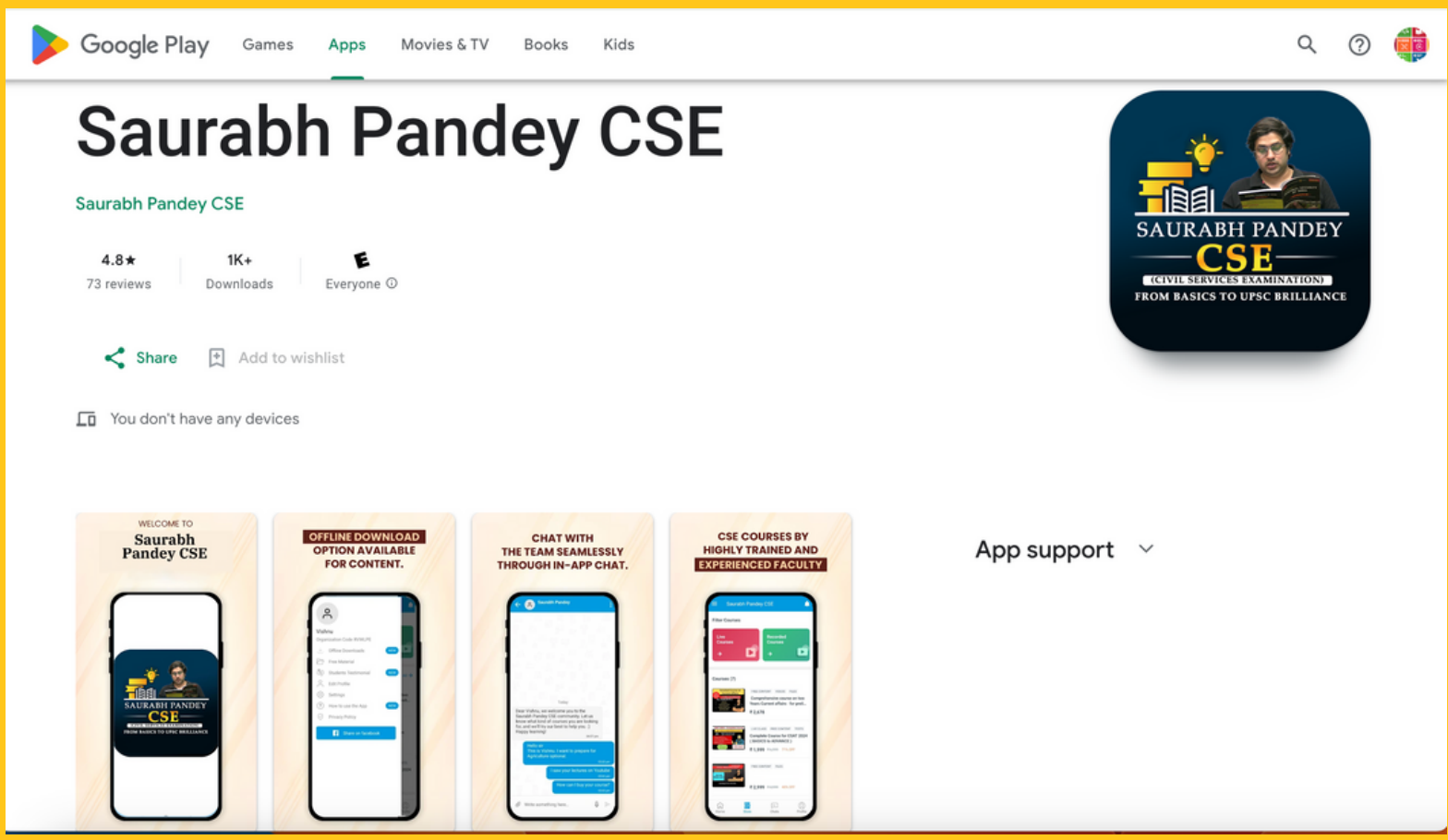
The TEPA reflects the culmination of dedicated efforts to foster a deeper economic partnership, underscoring the importance of dialogue, cooperation and mutual understanding

India-European Trade and Economic Partnership Agreement (TEPA) will take India's growth story to Europe' But not without challenges. Elaborate.

→ Trade relations between India and Europe can be traced back to the 15th Century. Indian products like textile, spices, silk and stones were much demanded in European market.

India is expected to sign a Trade and Economic Partnership Agreement (TEPA) with the EFTA - European Free Trade Association, whose members are Iceland, Norway, Switzerland, & Liechtenstein.

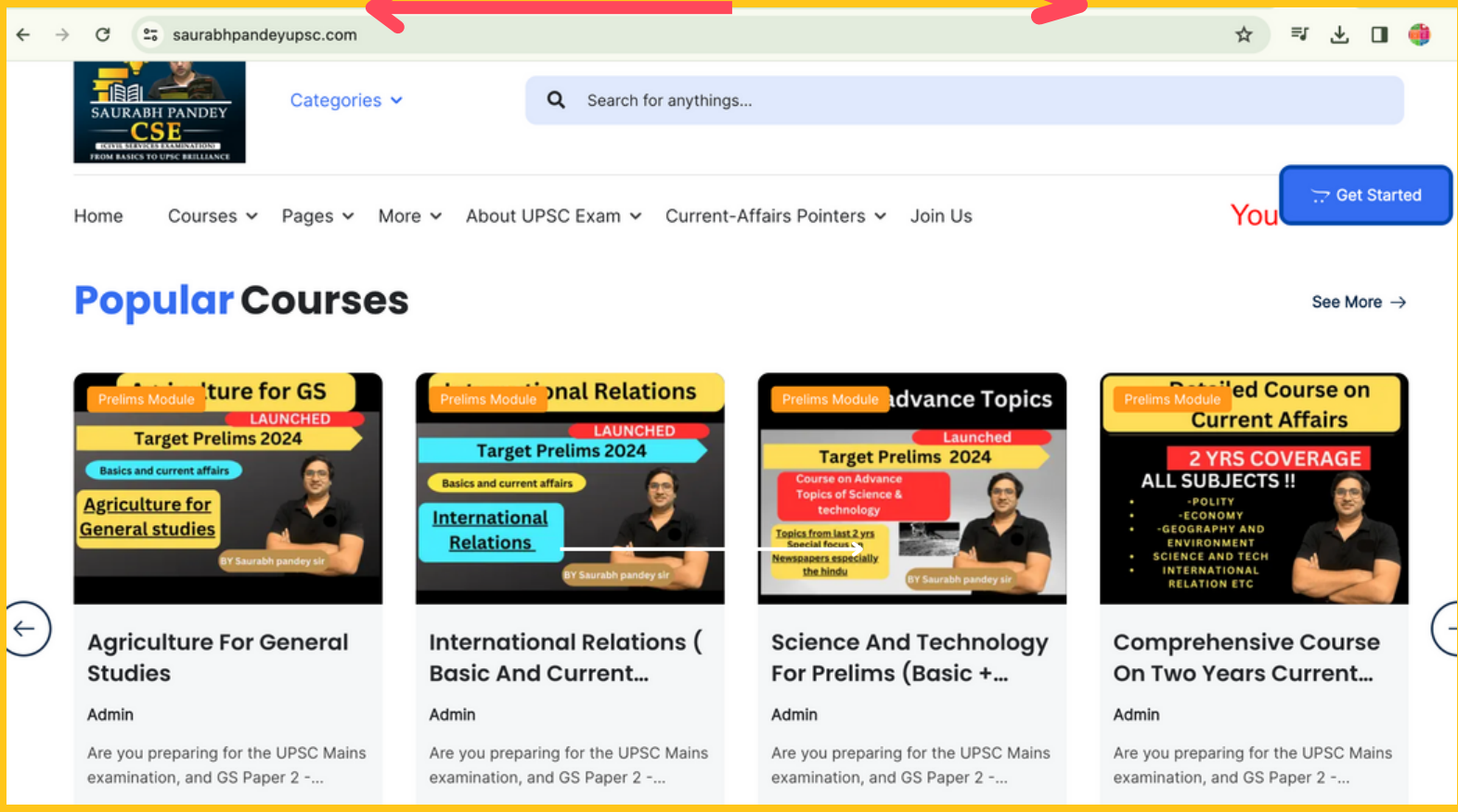
- The aim of this agreement is increasing trade and investment flow, job creation and economic growth.
- EFTA would invest $100bn into India over the next 15 years, generating nearly 1mn jobs.
- This enhances market access and simplifies customs procedure to facilitate business in respective markets.
- Provisions such as :-
  (i) No effective duty cut on gold.
  (ii) Swiss watches, chocolates, wines, coffee from EFTA to get cheaper.
  (iii) Both sides keep most dairy, agri-production in sensitive list.
  (iv) No TRIPS-plus commitment by India.



For any query msg- 9057921649

Classes on laptop-

https://web.saurabhpandeyupsc.com/login



saurabhpandeyupsc.com

Right whales may never breed after run-ins with fishing gear

A new study has reported that even entanglements scientists classify as 'minor' have devastating impacts on the critically endangered right whales and that, surprisingly, potential mothers who suffer such entanglements have the lowest chance of starting to breed

Joshua Reed
Leslie New
Peter Corkeron
Rob Harcourt

Scientists estimate that before commercial whaling scaled up in the 18th and 19th centuries, there may have been as many as 10,000 North Atlantic right whales. Today, fewer than 360 of them remain. GETTY IMAGES/ISTOCKPHOTO

It sounds like a crime show episode at sea: In late January 2024, federal regulators learned that a dead female North Atlantic right whale had been sighted near Martha's Vineyard, Massachusetts. The whale was towed to shore, where more than 20 U.S. and Canadian scientists converged to perform a necropsy, or animal autopsy.

On February 14, the U.S. National Oceanic and Atmospheric Administration announced that the whale was #5120 in a catalogue that tracks individual right whales. Further, the agency said, a rope that had been deeply embedded in the whale's tail had likely come from lobster fishing gear in Maine.

Entanglement in fishing gear is a deadly threat to these critically endangered animals. Scientists estimate that before commercial whaling scaled up in the 18th and 19th centuries, there may have been as many as 10,000 North Atlantic right whales. Today, fewer than 360 individuals remain. Almost 90% of them have been entangled at least once.

When whales become entangled in fishing gear, they use extra energy dragging it as they swim. If the rope is caught around their mouths, they may struggle to feed and slowly starve. Ropes wrapped around whales' bodies, flippers or tails can cut into the animals' skin and become deeply embedded in their flesh, as happened to whale #5120. This can cause infections, chronic emaciation and damage to whales' blubber, muscle, bone and baleen – the bristly structures in their mouths that they use to filter prey from the water.

North Atlantic right whales are legally protected, both internationally and in U.S. waters, including policies that seek to reduce deaths or serious injuries resulting from entanglements. However, even when entanglement does not kill a whale, it can affect individuals' ability to reproduce, which is critically important for a species with such low numbers.

In a newly published study, we show that even entanglements scientists classify as "minor" have devastating impacts on female right whales and that, surprisingly, potential mothers who suffer "minor" entanglements have the lowest chance of starting to breed. As researchers with expertise in marine biology, ecology and statistics, we believe our findings underline the urgent need for ropeless fishing gear that can reduce threats to the survival of this species.

Smaller females having fewer young

Understanding reproductive patterns is essential for supporting species that are critically endangered. North Atlantic right whales historically started breeding by around 9 years of age and gave birth to a single calf every three to four years thereafter for several decades.

Today, however, many females have yet to reproduce at all. Moreover, those that have successfully produced calves now don't produce another calf for more than seven years on average.

As we showed in a 2022 study, after an encouraging North Atlantic right whale population recovery from the 1970s through the early 2000s, the number of reproductively mature female right whales declined from 2014 onward. By 2018 there were only about 73 breeding females left, representing roughly half of all females and a sixth of the entire species.

Other research has shown that poor health and physical condition are making it harder for these females to even start breeding. Since the early 1980s, North Atlantic right whales have literally shrunk: Adults have shorter bodies than they did several decades ago. This trend is associated with entanglements in fishing gear. As is true for all mammals, decreasing female body size reduces the likelihood of reproducing. Smaller whales have fewer calves.

Low calving rates are a significant factor in North Atlantic right whales' decline, so it is important to understand what causes them. Many organisations are involved in tracking North Atlantic right whales, including government agencies, aquariums and conservation groups. Photos taken from the air enable researchers to identify individuals and so monitor whale population trends, births and deaths, ocean habitat use patterns, health, and rates of scarring from entanglements and collisions with ships.

Our new study found that female right whales who have experienced even a minor entanglement before reaching sexual maturity may not ever start to breed. Even females who have previously reproduced are less likely to breed again following an entanglement event.

We determined this by using a mathematical model to incorporate information on the identity of individual whales, derived from photographs of natural markings known as callosities on the whales' heads. By identifying and photographing whales repeatedly over time, scientists can estimate different stages of their life, such as when females give birth.

> The number of reproductively mature female right whales declined from 2014 onward. By 2018 there were only about 73 breeding females left, representing roughly half of all females and a sixth of the entire species

Weakness of current regulations

Researchers categorise the severity of injuries that result from entanglements as minor, moderate or severe. The scientists who manage the right whale catalogue classify scars or injuries on the skin as minor if they are smaller than 2 cm without entering the blubber. If they are larger and enter the blubber, they are classified as moderate. Injuries that extend deep into the muscle or bone are categorised as severe.

Our research makes it clear that such value-laden terms are potentially misleading because even minor entanglements can threaten whales' successful reproduction.

Multiple laws ostensibly protect North Atlantic right whales, including the U.S. Endangered Species Act and Marine Mammal Protection Act, and Canada's Species at Risk Act. In our view, these measures do not give enough weight to preventing all types of entanglements, regardless of severity.

Under the Marine Mammal Protection Act, the NOAA develops and implements conservation plans and so-called Take Reduction Plans, which are designed to minimise wildlife deaths and serious injury resulting from commercial fishing gear.

The Atlantic Large Whale Take Reduction Plan, developed in 1997, requires fishers to use weak links, with a maximum breaking strength of 771 kg, to connect lobster and crab pots to buoys on the surface. These links are intended to break when whales swim into them, so that the whales do not become entangled and weighed down by ropes and traps.

The plan also requires fishers to use heavy ground lines to connect multiple traps or pots. These lines are designed to sink to the bottom rather than floating in the water column. And the plan closes trap fishing areas seasonally when whales are known to be present in those zones.

Coming back from the brink

Current population estimates suggest that the numbers of North Atlantic right whales could be stabilising, meaning that the number of deaths is approximately equal to the number being born. While these estimates seem promising, females need to start and continue producing calves to increase whales' numbers.

From our work, it is very clear that both lethal and sublethal impacts of entanglements are of grave concern for these whales. As we see it, eliminating entanglement, not mitigating it, is the only way to avoid the extinction of this species. Every entanglement, whatever its severity, is bad news for the whales.

(Joshua Reed is a research associate in biology, Macquarie University; Leslie New is an assistant professor of statistics, Ursinus College; Peter Corkeron is an adjunct senior research fellow, Centre for Planetary Health and Food Security, Griffith University; and Rob Harcourt is a professor of marine ecology, Macquarie University. This article is republished from The Conversation.*)*

The hindu analysis by saurabh pandey sir

North Atlantic whale

- Entanglement in fishing gear is a deadly threat to these critically endangered animals.
- Scientists estimate that before commercial whaling scaled up in the 18th and 19th centuries, there may have been as many as 10,000 North Atlantic right whales.
- Today, fewer than 360 individuals remain. Almost 90% of them have been entangled at least once.
- When whales become entangled in fishing gear, they use extra energy dragging it as they swim.
- If the rope is caught around their mouths, they may struggle to feed and slowly starve.

The hindu analysis by saurabh pandey sir

THE HINDU

- **North Atlantic right whales are legally protected, both internationally and in U.S. waters, including policies that seek to reduce deaths or serious injuries resulting from entanglements**

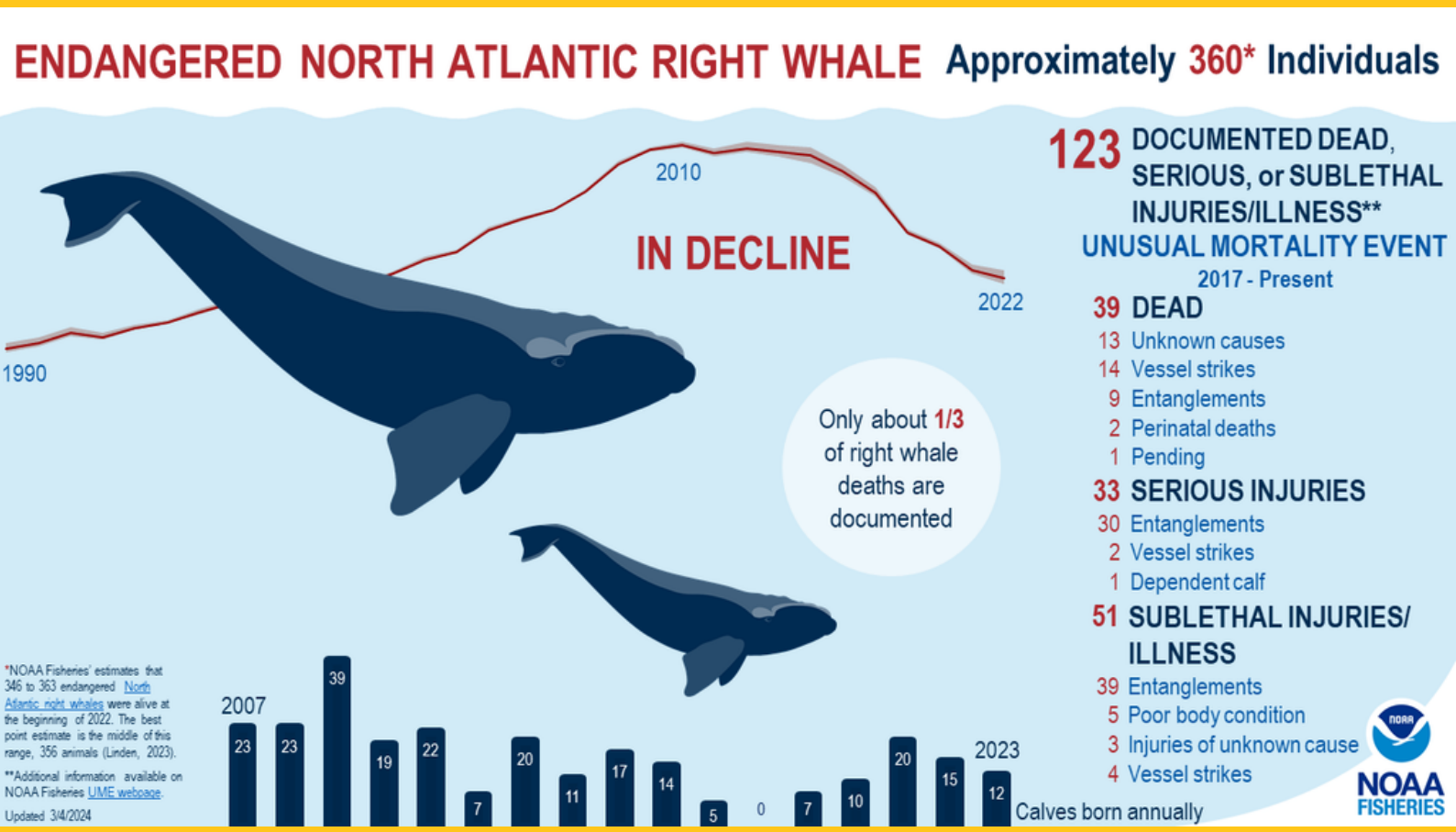
About the Species

- The North Atlantic right whale is one of the world's most endangered large whale species.
- Two other species of right whales exist: the North Pacific right whale, which is found in the North Pacific Ocean, and the Southern right whale, which is found in the southern hemisphere.
- Right whales are baleen whales, feeding on copepods (tiny crustaceans) by straining huge volumes of ocean water through their baleen plates, which act like a sieve.
-

- North Atlantic right whales have been listed as endangered under the Endangered Species Act since 1970.
- There are approximately 360 individuals remaining, including fewer than 70 reproductively active females.
- Human impacts continue to threaten the survival of this species

The hindu analysis by saurabh pandey sir

THE HINDU



The hindu analysis by saurabh pandey sir

Collision with NASA spacecraft altered the asteroid Dimorphos' shape. REUTERS

NASA craft that diverted space rock also dented it

Reuters

When NASA sent its DART spacecraft to slam into the asteroid Dimorphos in 2022, the U.S. space agency demonstrated it was possible to change a celestial object's trajectory, if needed, to protect the earth. It turns out this collision changed not only the asteroid's path but its shape as well.

The asteroid, which before the DART encounter looked like a ball that was a bit plump in the waist, now appears to be shaped more like a watermelon – or, technically, a triaxial ellipsoid, scientists have said.

"The prevailing understanding is that Dimorphos is a loosely packed agglomeration of debris ranging from dust to gravel to boulders. Thus, its global strength is quite low, allowing deformation much more easily than for a solid monolithic body," said Steve Chesley, a senior research scientist at NASA's Jet Propulsion Laboratory (JPL) in California and a co-author of the study published in the *Planetary Science Journal*.

"The shape change was so dramatic because of its rubble-pile composition," said JPL navigation engineer and study lead author Shantanu Naidu. "By measuring the pre- and post-impact orbit of Dimorphos, we were able to deduce the change in the shape of Dimorphos due to the DART impact."

The spacecraft collided on September 26, 2022, at about 22,530 kph into Dimorphos, which was about 170 metres wide, roughly 11 million km from the earth.

Dimorphos is a moonlet of Didymos, which is defined as a near-earth asteroid. The DART (Double Asteroid Redirection Test) mission was a proof-of-principle mission using a spacecraft to apply kinetic force to nudge a celestial object that otherwise might be on a collision course with the earth. Dimorphos and Didymos do not pose an actual threat to the earth.

The spacecraft collided on September 26, 2022, at about 22,530 kph into Dimorphos, which was about 170 metres wide, roughly 11 million km from the earth. Didymos has a diameter of about 780 metres.

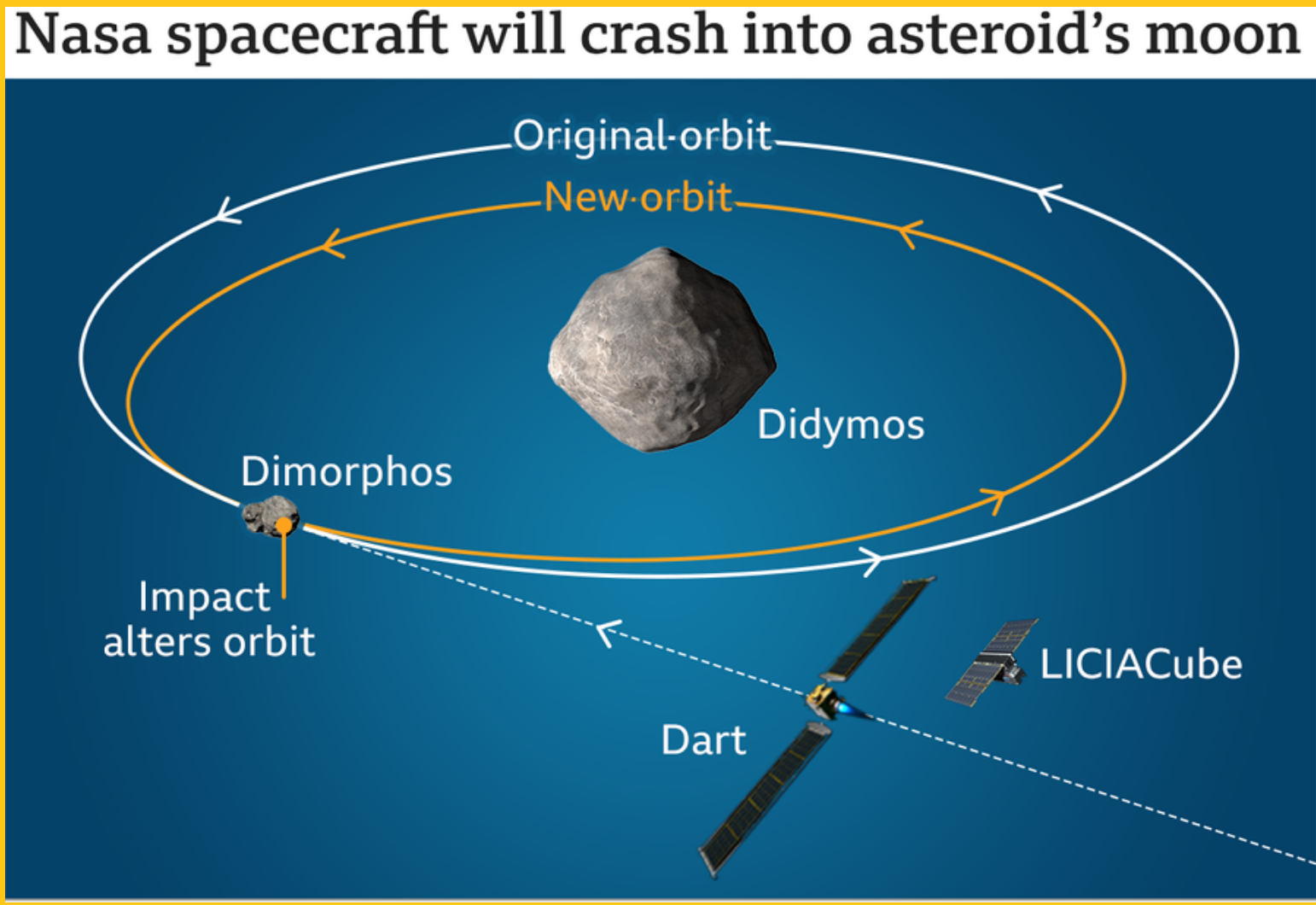
DART's collision, which sent rocky debris from the asteroid flying into space, also changed the orbital path that Dimorphos takes around Didymos - making it elliptical instead of circular - and its orbital period, the time it takes to complete a single orbit, the scientists said. It now takes Dimorphos 15 seconds less than before the impact to complete an orbit, they found.

Scientists had previously disclosed that the asteroid's orbit had changed, with the new study offering the most precise readings yet.

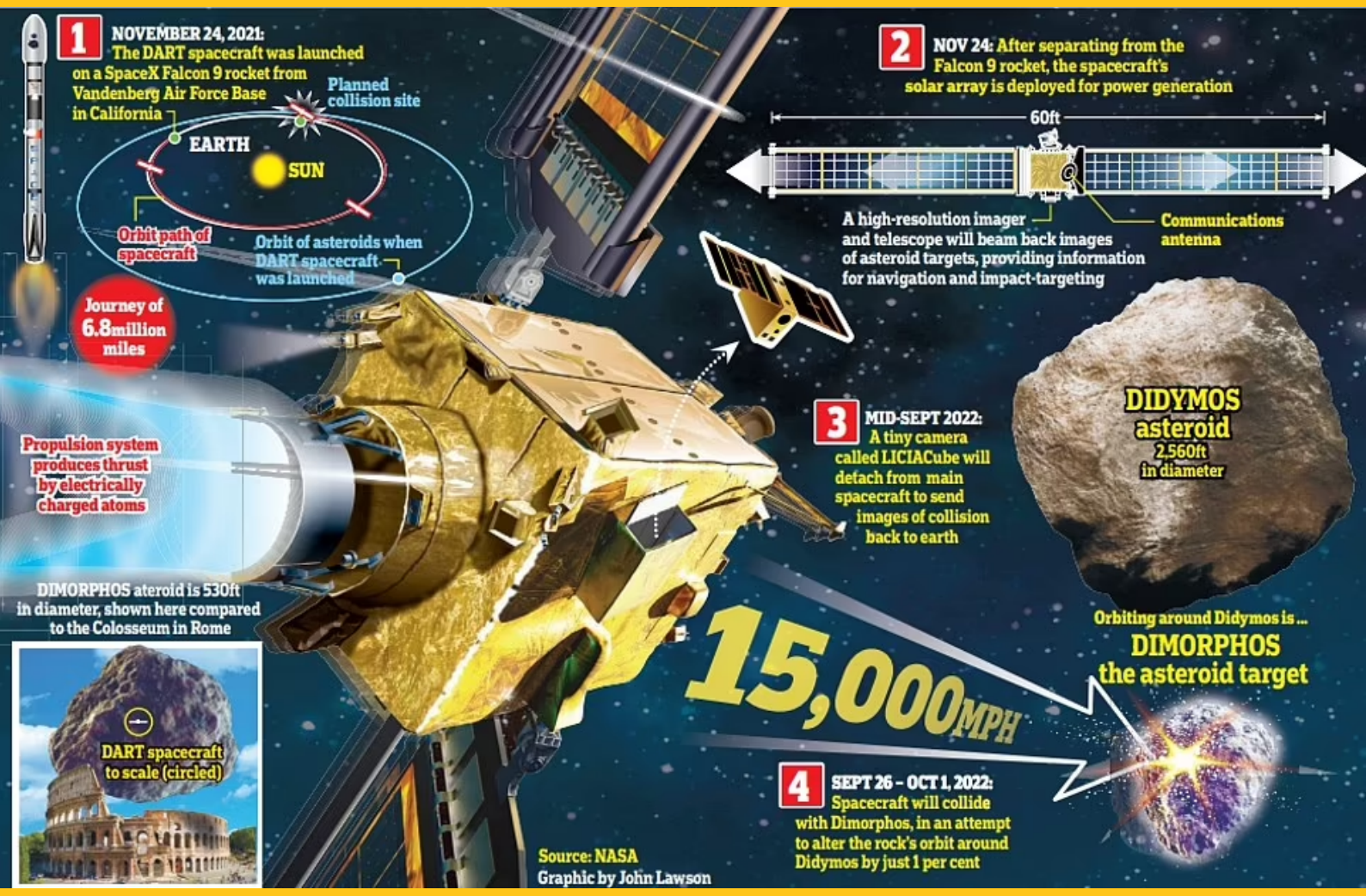
Dr. Chesley said the asteroid's orbital period continued to decay slowly in the weeks after the impact.

"We believe this is due to the fact that loose debris in the system continues to leak out and carries angular momentum with it, thus necessarily contracting the orbit," he added. Angular momentum refers to how much a rotating object's mass is distributed around its axis and how quickly it is spinning.

DART

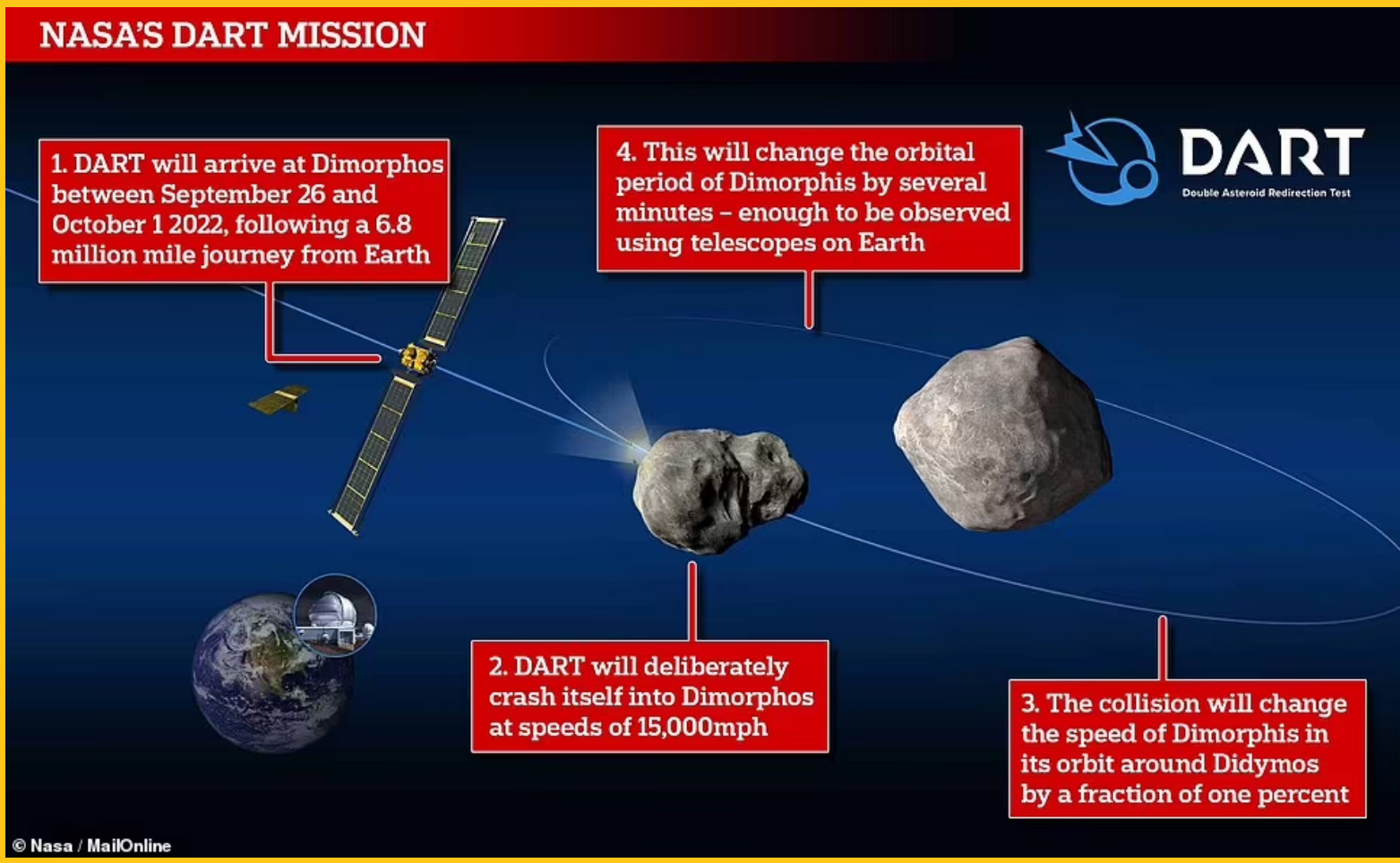


The hindu analysis by saurabh pandey sir



The hindu analysis by saurabh pandey sir

THE HINDU


NASA'S DART MISSION
1. DART will arrive at Dimorphos between September 26 and October 1 2022, following a 6.8 million mile journey from Earth
4. This will change the orbital period of Dimorphis by several minutes – enough to be observed using telescopes on Earth
DART
Double Asteroid Redirection Test
2. DART will deliberately crash itself into Dimorphos at speeds of 15,000mph
3. The collision will change the speed of Dimorphis in its orbit around Didymos by a fraction of one percent
© Nasa / MailOnline

Why has Karnataka banned certain colouring agents?

Where were these harmful agents found? Which are the colouring agents rendered as harmful? What are the stipulated penalties if manufacturers are found using these chemicals?

Sharath S. Srivatsa

The story so far:

Karnataka became the third State in South India to ban the use of certain colouring agents in cotton candy and gobi manchurian that are found to be harmful. The decision follows similar steps taken in Tamil Nadu and Goa, and came after a survey by the Public Health Department that showed the presence of harmful chemicals present in the food samples, making them unsafe for consumption. The government has also clarified that there is no ban on making cotton candy as long as these colouring agents are not used.

What did the survey results show?

Samples in the State were collected from February 12 and submitted for laboratory tests, which then revealed the presence of harmful chemicals in many samples. Of the 25 cotton candy samples collected, 15 were termed as unsafe as they contained colours, while the rest were safe samples as they were made without added colours. Among the 171 samples of gobi manchurian collected, 107 samples were declared unsafe due to added colours, while 64 were declared safe as they did not contain added colours.

What were the harmful chemicals?

The unsafe samples with added colours showed traces of sunset yellow, tartrazine and rhodamine-b in cotton candy. Similarly, the unsafe samples of gobi manchurian had tartrazine, sunset yellow and carmoisine. A ban is already in place over the use of colouring agent rhodamine-b, a suspected carcinogenic substance. In the case of tartrazine, Health Minister Dinesh Gundu Rao said that although it is an approved artificial food colour, there are restrictions on its usage. There is a list of food items in which it can be used, with the amount to be used also prescribed. However, these conditions are only for packed food items; tartrazine cannot be used for food items which are freshly prepared, he said.

While notifying the ban of harmful chemicals, the Food Safety Commissioner said that the prolonged use of snacks that contain artificial colours can lead to deadly diseases such as cancer.

What are the penalties?

As per Rule 16 of the Food Safety and Standards Act, 2006 (Food Products Standards and Food Additives Regulation 2011), no artificial colours should be used in the preparation of gobi manchurian. The same rules allow certain food colours to be used within the approved limits, while non-permitted colours, including rhodamine-b, should not be used in the preparation of cotton candy.

The cancellation of licence for commercial activities, hefty fines and jail term have been threatened against the offenders. The Food Safety and Standards Act stipulate a fine of not less than ₹10 lakh and a jail term of a minimum of seven years, extending to life imprisonment, against those using banned chemical substances in food products.

What next?

Health safety officials assert that the ban on the use of harmful chemicals has come into effect immediately. While the Government plans to create awareness among manufacturers, it has also urged consumers to be aware of what they are consuming. The notification advised the public not to use, or use minimally, food items prepared with artificial colours. Random checks will be conducted to ascertain adherence to the legal provisions.

Besides gobi manchurian, other popular food products such as kebabs in which colouring agents are used is likely to come under the scanner.

THE GIST

- Karnataka became the third State in South India to ban the use of certain colouring agents in cotton candy and gobi manchurian that are found to be harmful.
- While the Government plans to create awareness among manufacturers, it has also urged consumers to be aware of what they are consuming.
- The Food Safety and Standards Act stipulate a fine of not less than ₹10 lakh and a jail term of a minimum of seven years, extending to life imprisonment, against those using banned chemical substances in food products.

- Karnataka became the third State in South India to ban the use of certain colouring agents in cotton candy and gobi manchurian that are found to be harmful.
- While the Government plans to create awareness among manufacturers, it has also urged consumers to be aware of what they are consuming.
- The Food Safety and Standards Act stipulate a fine of not less than ₹10 lakh and a jail term of a minimum of seven years, extending to life imprisonment, against those using banned chemical substances in food products.

What were the harmful chemicals?

- **The unsafe samples with added colours showed traces of sunset yellow, tartrazine and rhodamine-b in cotton candy.**
- **Similarly, the unsafe samples of gobi manchurian had tartrazine, sunset yellow and carmoisine.**
- **A ban is already in place over the use of colouring agent rhodamine-b, a suspected carcinogenic substance. In the case of tartrazine,**

What are the penalties?

- As per Rule 16 of the Food Safety and Standards Act, 2006 (Food Products Standards and Food Additives Regulation 2011), no artificial colours should be used in the preparation of gobi manchurian.
- The same rules allow certain food colours to be used within the approved limits, while non-permitted colours, including rhodamine-b, should not be used in the preparation of cotton candy.
- The cancellation of licence for commercial activities, hefty fines and jail term have been threatened against the offenders.
- The Food Safety and Standards Act stipulate a fine of not less than ₹10 lakh and a jail term of a minimum of seven years, extending to life imprisonment, against those using banned chemical substances in food products.

The hindu analysis by saurabh pandey sir

THE HINDU

New tech: A man uses Apple Vision Pro mixed reality glasses at the Mobile World Congress (MWC), in Barcelona on February 27. AFP

The slow and steady rise of mixed reality technology

Apple went into overkill mode when it asked app developers, building applications for its Vision Pro, to call their apps 'spatial computing apps'. The iPhone maker must be mindful of the technology's rich history in its quest to play a larger role in making mixed reality headsets

John Xavier

When Apple unveiled its Vision Pro in June 2023, it called the device a "revolutionary spatial computer". But most tech enthusiasts preferred calling it a 'mixed reality headset'.

In February, just around the time it launched the product, the iPhone maker went a bit too far when it told developers to not call the Vision Pro "generally as a 'headset' when describing their apps for the device." It also told them to call their apps 'spatial computing apps' – not augmented reality (AR), virtual reality (VR), or mixed reality (MR) apps. Apple's forced use of language is an anti-thesis to its own four-decade-old Super Bowl ad that introduced the Macintosh personal computer to a world hooked to television sets by breaking the idea of 'doublethink' with 'newspeak'. It will serve well for Apple to keep the rich history of reality augmenting technology in mind before it forces the use of specific terms on app developers.

So, what is the history of reality-augmenting technology?

A brief history

In the late 1960s, pioneering computer scientist Ivan Sutherland, along with his student, designed the first-ever head-mounted display (HMD). The device consisted of two cathode ray tubes, mounted on either side of the user's head, enabling the wearer to see a three-dimensional wireframe room. When the user moved, the device would redraw the wireframe room factoring in the user's changed position and perspective. The HMD built by Dr. Sutherland was so heavy that it had to be supported by a large overhead beam. It was jocularly called "The Sword of Damocles" because of its sheer size.

On what such a technology could potentially do in the future, Dr. Sutherland, in his paper, wrote that "displayed material can be made either to hang disembodied in space or to coincide with maps, desktops, walls, or the keys of a typewriter."

But, it took another two decades for HMDs to move in that direction when some large industrial companies began testing the nascent technology to improve productivity on the shop floor and cut training costs. Boeing was one of the first few companies to test and use HMDs to train its shop floor workers.

Testing waters

In 1990, the aircraft manufacturer was looking to cut employee training costs. Making aircraft was – and is even now – a complex task. And most processes are still not automated as they require high levels of dexterity and perceptual awareness.

Back then, the company used diagrams and marking devices to guide workers in the factory to put parts together. Workers had to access a large amount of information, much of it coming from Computer-Aided Design (CAD) systems, to assemble aircraft. When engineering designs were updated to factor in new technical changes, it take more time to pass that information along, delaying the already expensive process. Two Boeing researchers, Thomas Caudell and David Mizell, analysed the situation and developed a goggle system that would let workers access the CAD system directly. They built a headset that augmented the user's field of vision with updated designs.

Like Boeing, throughout the 1990s and 2000s, several organisations tried their hand at making HMD-inspired products. Several military organisations were building and prototyping devices that gave the wearer an additional layer of information. Their goal was to make devices that would either create virtual environments or add layers of information over the user's field of vision with real-time information.

Changing lanes

While those experiments led to a new world of immersive experience technologies, they did not receive as much spotlight as other advances in personal consumer tech in the 2000s.

But, in the early 2010s, when two versions of HMD-based products hit the market, that perception began to change. One was launched by a start-up and another by a tech giant. The former became a success, while the latter failed. The one that did not succeed was Google glass. The search giant's AR glasses were definitely ahead of their time. They provided users an augmented view of the space they were in. But the tech giant's AR glasses were not well received by consumer tech enthusiasts.

The product was criticised for its limited functionality. Some noted that the spectacles violated privacy of people around the user. The search giant re-packaged it for business customers, after which the product took on different shapes and sizes before it was once and for all shelved in 2022.

While Google's AR spectacles suffered, another start-up succeeded. Oculus, founded by Palmer Luckey, built an HMD prototype in the early 2010s that took the gaming world by storm. The start-up was soon bought by Facebook-owner Meta Inc. And its first consumer headset, called Oculus Rift VR, was rebranded and sold as Meta Quest.

Mr. Palmer's idea of building VR devices was focused on making gaming immersive. But the VR company's new top boss, Mark Zuckerberg, had other plans. He was looking for a device that would make his moonshot a reality – the metaverse.

Subsequently, Meta acquired Surreal Vision, a U.K.-based company that was in the business of reconstructing real-time scenes, and integrated it with Oculus VR. The integration brought Oculus's VR headsets 3D capabilities, which enabled it to build products both for VR and AR, in effect creating a mixed reality headset.

Apple's Vision

Apple is now walking into this world with a $3,500 headset. The iPhone maker's headset comes with state-of-the-art hand- and eye-tracking features. It has a bunch of immersive apps, and a set of videos that are built for three-dimensional viewing.

While there are some first-generation bugs, this device offers an upgraded alternative to Meta's top-of-the-line Quest Pro VR headsets, which are retailing at less than half the price of a Vision Pro headset. Despite the expensive price tag, which will definitely make consumers cringe, the Vision Pro clearly sets a new bar in headset technology with its unique operating system, visionOS, that takes the user's gaze as input.

Apple has broken new ground by accomplishing the gaze input tech. So, in some sense, the Vision Pro offers AR, VR, and a little bit more. And that extra bit is making Apple force developers into calling the company's device a spatial computer. According to long-time mix reality researcher Louis Rosenberg, spatial computing "is a great overarc term for AR, MR, and VR, along with other immersive experiences such as movies and telepresence."

In his medium blog, Dr. Rosenberg recommends companies accept the language of the field.

"Spatial computing is a useful term, but so is augmented reality, mixed reality and virtual reality, all three of which part of our history and concluded.

What is Mixed Reality??

- Mixed reality is an immersive technology that combines physical and digital elements to enable them to interact with each other.
- This is typically done through 3D holograms.
- After mainframes, PCs, and cellphones, mixed reality is the next computing revolution.
- The term “mixed reality” was coined in a 1994 study titled “A Taxonomy of Mixed Reality Visual Displays” by Paul Milgram and Fumio Kishino.
-

The hindu analysis by saurabh pandey sir

THE HINDU

- **Mixed reality combines the digital and physical worlds, enabling organic and intuitive 3D interactions between humans, computers, and the environment.**
- **The developments in computer vision, graphical implementations, audio and visual technologies, input methods, and cloud computing are responsible for this new reality.**

The hindu analysis by saurabh pandey sir

THE HINDU

Mixed reality allows us to:

- Speed up innovation: Using mixed reality, construction or design teams can simply generate digital twins of items and test innovative concepts with minimal waste and cost.
- Mixed reality, like VR and AR, enables the development of far more engaging shared and interactive experiences
- Mixed reality provides tremendous training and development possibilities

The hindu analysis by saurabh pandey sir

THE HINDU

MR vs. VR vs. AR

Virtual reality, mixed reality, and augmented reality are altering our lifestyles and workplace environments.

- Virtual reality (VR) is a computer-generated, interactive representation of a genuine or artificial place or activity.
- Mixed reality (MR) is an interactive representation or perspective of real-world and computer-generated components.
- Augmented reality (AR) is a perspective of the actual world that incorporates computer-generated embellishments.

The hindu analysis by saurabh pandey sir

THE HINDU

Courses LIVE -(saurabh pandey cse app)

Must for upsc prelims 2024

saurabhpandeyupsc.com

- Agriculture for GS
- International relation
- 2 YRS Advanced current affairs
- sci- tech
- 10 full length test

courses link in description box

Msg for any query 9057921649

PRELIMS TEST 25

Advanced current affairs

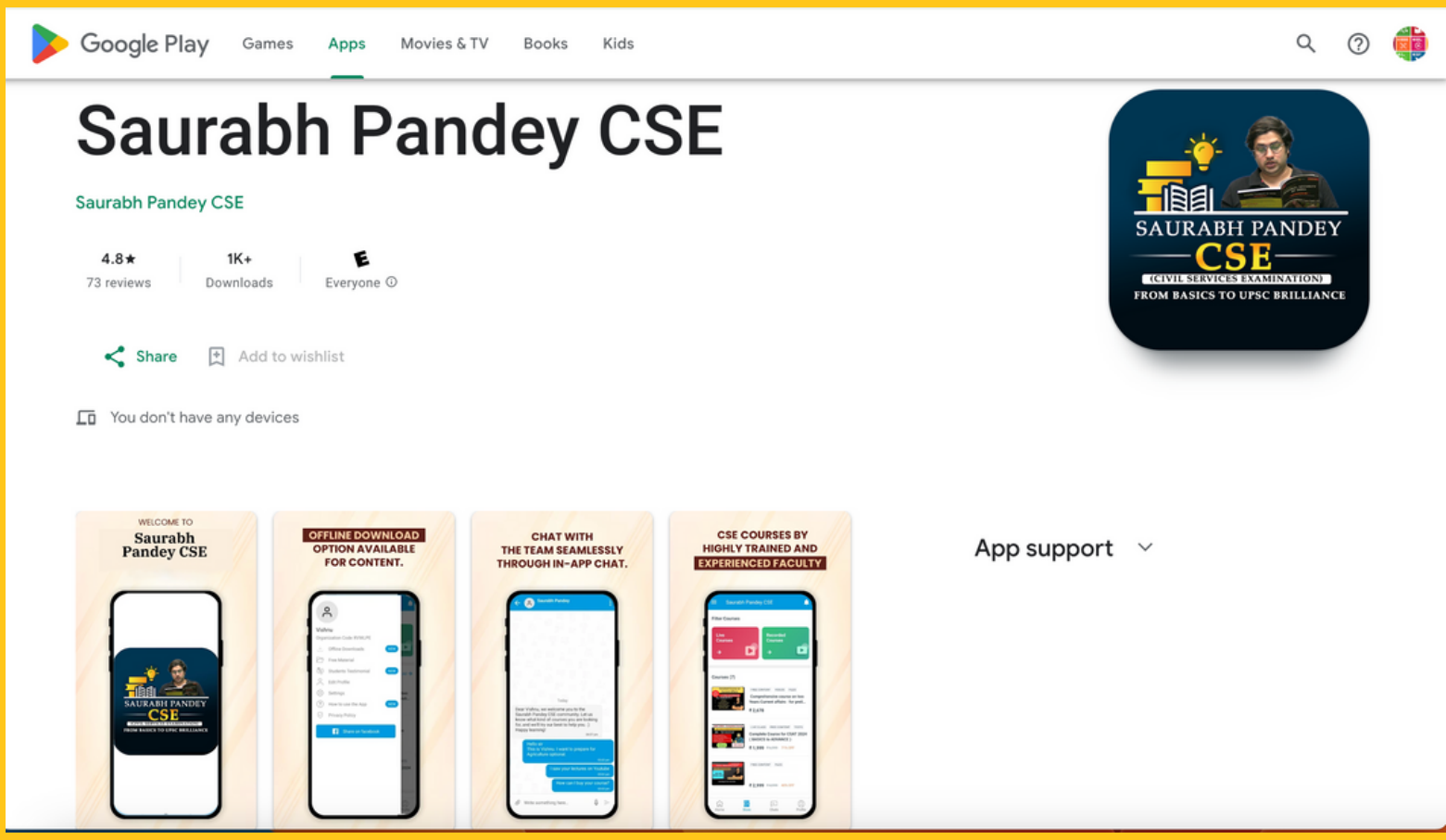
LIVE

ALL Tests revision pdf included

SAURABH PANDEY CSE (CIVIL SERVICES EXAMINATION) FROM BASICS TO UPSC BRILLIANCE

Link IN description

saurabhpandeyupsc.com



For any query msg- 9057921649

Classes on laptop- https://web.saurabhpandeyupsc.com/login

Target Mains 2024

Q "Mixed Reality has both positive applications and challenges "Elaborate

प्रश्न "मिश्रित वास्तविकता में सकारात्मक अनुप्रयोग और चुनौतियाँ दोनों हैं" विस्तार से बताएं

SEND ANSWER- SAURABH PANDEY
UPSC Telegram channel
For any query msg- 9057921649
mail-
saurabhpandey456321@gmail.com

LINK IN DESCRIPTION

Link in description

How to watch classes ??

1- Download Saurabh pandey cse app

2- visit web.saurabhpandeyupsc.com

For any query msg- 9057921649

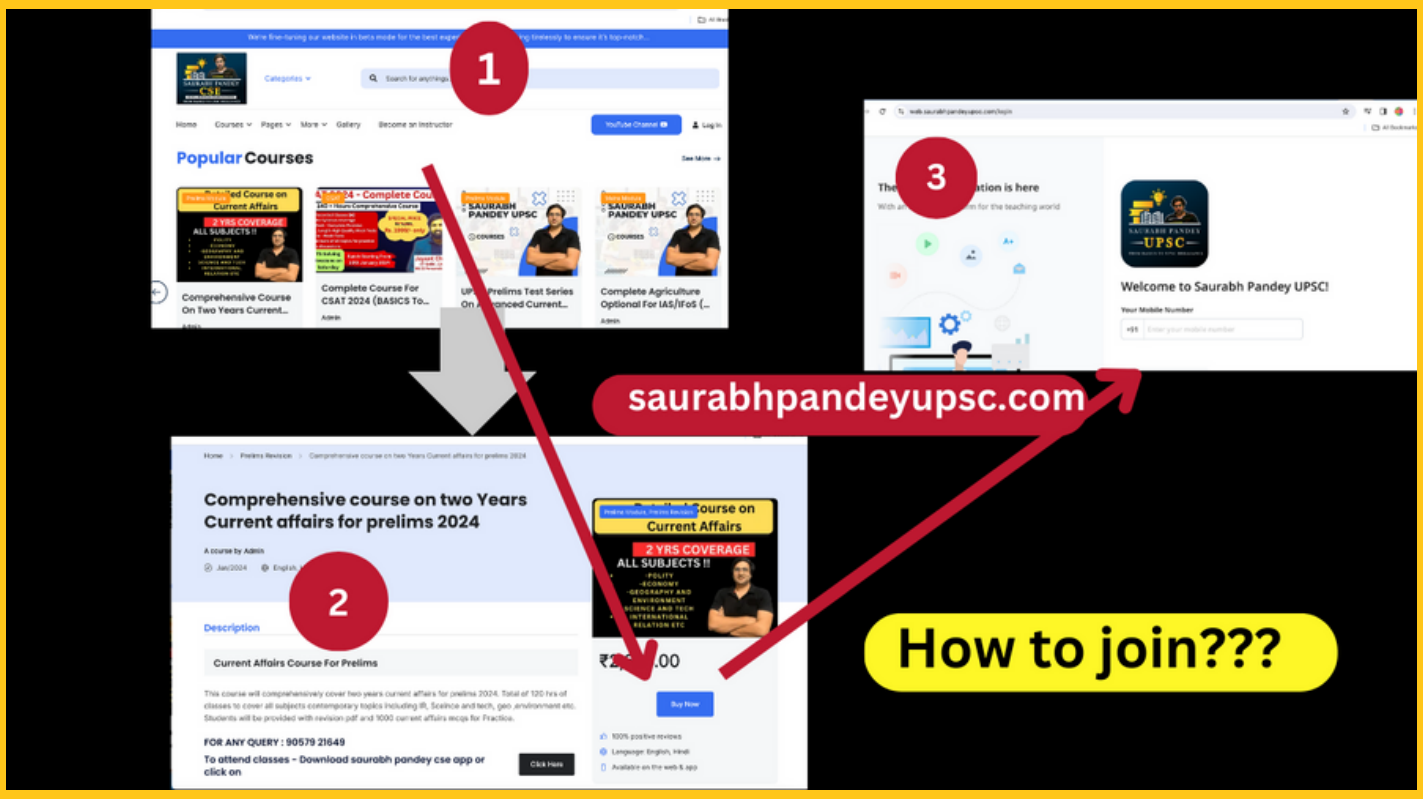
Courses Active

Prelims test series on advanced current affairs (total 50 tests)Saurabh Pandey UPSC: Home (Every Thursday and saturday)

visit saurabhpandeyupsc.com

For any query msg- 9057921649
mail-
saurabhpandey456321@gmail.com

HOW TO JOIN??



For any query msg- 9057921649
mail- saurabhpandey456321@gmail.com