

INDIAN ECONOMY**Supreme Court directs RBI to alter disclosure policy**

The Supreme Court gave the RBI “a last opportunity” to withdraw a November 2016 Disclosure Policy to the extent to which it stonewalls revelation of every other kind of information under the Right to Information Act, including the list of willful defaulters and annual inspection reports.

Last warning to RBI

- The policy was found to be directly contrary to the court’s judgment of December 2015 that the Reserve Bank could not withhold information sought under the RTI Act.
- The 2015 judgment had rejected the RBI’s argument that it could refuse information sought under the RTI on the grounds of economic interest, commercial confidence, fiduciary relationship or public interest.
- The court had observed that there was “no fiduciary relationship between the RBI and the financial institutions”.
- The court, in 2015, reminded the RBI that it had the statutory duty to uphold the interests of the public at large, the depositors, the economy and the banking sector.

Why did RBI refuse?

- The RBI had refused to provide information to the petitioner, claiming “fiduciary relationship” between itself and the banks in question.
- Such information, the regulator had then said, was exempted from being revealed under Section 8(1) (d) and (e) of the RTI Act.
- Section 8 allows the government to withhold from public some information in order to “guard national security, sovereignty, national economic interest, and relations with foreign states”.
- The information to the petitioners was denied by the RBI despite orders from the Central Information Commissioner (CIC) to do so.

ENVIRONMENT- CONSERVATION, BIO-DIVERSITY AND ISSUES**Emperor Penguin colony in Antarctica vanishes**

The Antarctic’s second-largest colony of emperor penguins collapsed in 2016, with more than 10,000 chicks lost, and the population has not recovered, according to a new study. Still, the population in Halley Bay represents only about 8% of the world’s population of emperor penguins.

Habitat loss leads to breeding failure

- Emperor penguins — the world’s largest — breed and molt on sea ice, chunks of frozen seawater.
- Under the influence of the strongest El Niño in 60 years, September 2015 was a particularly stormy month in the area of Halley Bay, with heavy winds and record-low sea ice.
- The penguins generally stayed there from April until December when their chicks fledged or had grown their feathers, but the storm occurred before the chicks were old enough.
- Those conditions appeared to have led to the loss of about 14,500 to 25,000 eggs or chicks that first year and the colony has not rebounded.

About Emperor Penguin

- The emperor penguin (*Aptenodytes forsteri*) is the tallest and heaviest of all living penguin species and is endemic to Antarctica.
- Like all penguins it is flightless, with a streamlined body, and wings stiffened and flattened into flippers for a marine habitat.
- Its diet consists primarily of fish, but also includes crustaceans, such as krill, and cephalopods, such as squid.
- The only penguin species that breeds during the Antarctic winter, emperor penguins trek 50–120 km over the ice to breeding colonies which can contain up to several thousand individuals.
- In 2012 the emperor penguin was uplisted from a species of least concern to near threatened by the IUCN.

Halley Bay

- Halley Research Station is an internationally important platform for global earth, atmospheric and space weather observation in a climate sensitive zone.

- Built on a floating ice shelf in the Weddell Sea, Halley VI is the world's first re-locatable research facility.
- This award-winning and innovative research station provides scientists with state-of-the-art laboratories and living accommodation, enabling them to study pressing global problems from climate change and sea-level rise to space weather and the ozone hole – first discovered at Halley in 1985.

SCIENCE AND TECHNOLOGY- EVERYDAY SCIENCE, SPACE, NUCLEAR, DEFENCE ETC

Scientists create speech from brain signals

Scientists have created a virtual vocal tract – completes with lips, jaw and tongue – that can generate natural-sounding synthetic speech by using brain signals. The brain-machine interface is created by neuroscientists at University of California, San Francisco in the US.

Synthetic Speech

- The apparatus comprised:
 - two “neural network” machine learning algorithms:
 - a decoder that transforms brain activity patterns produced during speech into movements of the virtual vocal tract, and
 - a synthesizer that converts these vocal tract movements into a synthetic approximation of the participant's voice.
- The algorithms produced sentences that were understandable to hundreds of human listeners in crowdsourced transcription tests.

How it works

- Patients are implanted with one or two electrode arrays: stamp-size pads, containing hundreds of tiny electrodes that were placed on the surface of the brain.
- As each participant recited hundreds of sentences, the electrodes recorded the firing patterns of neurons in the motor cortex.
- The researchers associated those patterns with the subtle movements of the patient's lips, tongue, larynx and jaw that occur during natural speech.
- The team then translated those movements into spoken sentences. Native English speakers were asked to listen to the sentences to test the fluency of the virtual voices.
- As much as 70 percent of what was spoken by the virtual system was intelligible, the study found.

Utility of the project

- The interface could one day restore the voices of people who have lost the ability to speak due to paralysis and other forms of neurological damage.
- Many people with epilepsy do poorly on medication and opt to undergo brain surgery.
- Stroke, traumatic brain injury, and neurodegenerative diseases such as Parkinson's disease, multiple sclerosis, and amyotrophic lateral sclerosis often result in an irreversible loss of the ability to speak.
- We can hope that individuals with speech impairments will regain the ability to freely speak their minds and reconnect with the world around them coming days.

Overcoming challenges

- The biggest clinical challenge may be finding suitable patients: strokes that disable a person's speech often also damage or wipe out the areas of the brain that support speech articulation.
- Still, the field of brain-machine interface technology, as it is known, is advancing rapidly, with teams around the world adding refinements that might be tailored to specific injuries.
- Before operating, doctors must first locate the “hot spot” in each person's brain where the seizures originate which may take weeks.

QUOTE OF THE DAY

Tough times never last, but tough people do.