Persist with probe

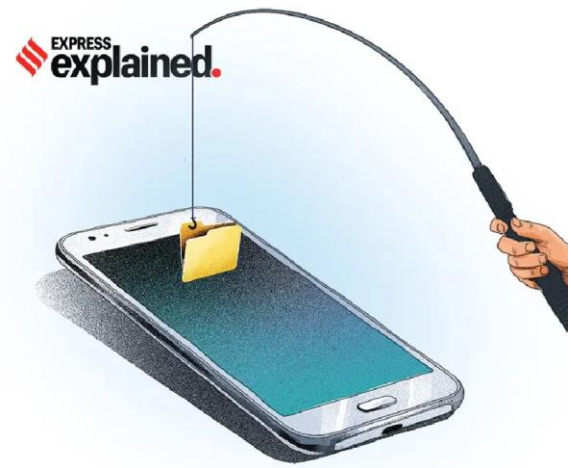
Fresh report of Pegasus use-flags the need to take inquiry to its logical conclusion.

Highlights:

1. It is difficult to disagree with the argument that there cannot be a parallel probe by any inquiry commission into the allegations of unlawful surveillance using the Pegasus spyware after the Supreme Court ordered an independent inquiry.
2. It is no surprise, then, that the top court has stayed the functioning of the Commission constituted by the West Bengal government and headed by a retired judge, Justice Madan B. Lokur.
3. Chief Minister Mamata Banerjee had taken note of the allegations of surveillance that possibly targeted personages in West Bengal, and was on the good legal ground when she took the first legal step towards unearthing the truth.
4. It was a step that was warranted by the circumstances then, given the Union government's refusal to acknowledge that it possessed such spyware or whether those identified by an international media investigation as targets were subject to any sort of surveillance in the country.
5. Reports by an international consortium of journalists said that 300 out of 50,000 likely targets of Pegasus spyware were Indians. Subsequently, the Government also refused to cede any ground in the Supreme Court and declined to give a simple 'yes' or 'no' reply to the Court's questions.
6. Stonewalling attempts to raise it in Parliament and sticking to its guns in Court, the Government inevitably invited an order from the Court for an independent investigation.
7. It is significant that the Bench, headed by the Chief Justice of India, N.V. Ramana, ruled that the bogey of national security was not an adequate reason not to have a credible inquiry into the allegations.

There is little doubt that the Court-ordered probe by experts supervised by a panel headed by the retired Supreme Court judge should be taken to its logical conclusion and the country be told whether Pegasus or any other spyware, was used to infect mobile phones and other devices of lawyers, activists and journalists, among others. There is much riding on this judicially overseen inquiry, and it behoves the government of the day to extend its full cooperation and not pose any impediment to its independent functioning.

EXPRESS explained.



WHAT IS PEGASUS?

Built and marketed by Israeli company NSO, Pegasus is a spyware that infects devices and spies on the victim by transferring data to a master server in an unauthorised manner. The company claims to sell it only to "vetted foreign governments" worldwide

#QUIXPLAINED 1

EXPRESS explained.

HOW DOES IT WORK?

- Pegasus, in the very basic form, can infect devices that are connected to the internet. Some updated versions, experts claim, can also infect phones even without the victim clicking on any links or messages

- Most spyware and stalkerware apps disguise themselves as anti-theft applications that can be used to track stolen or lost devices. While viruses and malware can be detected by anti-virus software, spyware and stalkerware apps disguise themselves as useful and send out stolen data to central servers without the knowledge of the users

#QUIXPLAINED 2

EXPRESS explained.

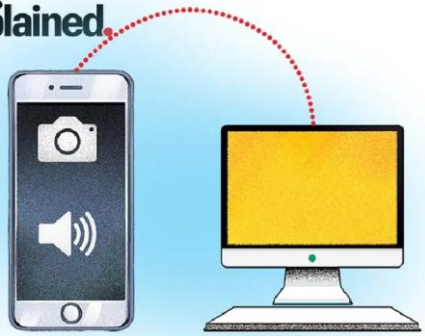
HOW DOES IT INFECT A DEVICE?

- For spyware apps, the easiest method is to disguise the spying code inside the unauthorised versions of premium apps. On the other hand, stalkerware apps seek explicit permissions at the time of their installation

- Such stalkerware applications, once installed, hide themselves in the background, from where they continue functioning. Similarly, Pegasus infects phones and computers of victims either through vulnerabilities in most commonly used apps such as WhatsApp, iMessage, or SMS. The software tries to gain "root privileges" so that they can become device administrators

#QUIXPLAINED 3

EXPRESS explained.



WHAT HAPPENS AFTERWARDS?

The software can, based on instructions from a remote server, automatically turn on the camera and the microphone and look into chats, contacts and data backup. It can also record speech, access the calendar and read SMS-es and emails. The spyware software can continue sending signals to the controlling server till the time it is detected

TEXT: AASHISH ARYAN; ILLUSTRATION: SUVAJIT DEY

#QUIXPLAINED 4

Can India become a technology leader?

An invisible hand

1. Research shows that the state (in the USA) has been crucial to the introduction of the new generation of technologies, including computers, the Internet, and the nanotech industry.
2. Public sector funding developed the algorithm that eventually led to Google's success and helped discover the molecular antibodies that provided the foundation for biotechnology.
3. In these successful episodes, the governmental agencies were proactive in identifying and supporting the more uncertain phases of the research, which a risk-averse private sector would not have entered into.
4. The role of the government has been even more prominent in shaping the economic growth of China, which is racing with the U.S. for supremacy in technology.
5. A little over a decade earlier, China was known for its low-wage manufacturing. Even while being hailed as the 'factory of the world', China had been stuck at the low value-adding segments of the global production networks, earning only a fraction of the price of the goods it manufactured.
6. However, as part of a 2011 government plan, it has made successful forays into 'new strategic industries such as alternative fuel cars and renewable energy.

The Chinese experience

1. China's achievements came not because it turned 'capitalist', but instead by combining the strengths of the public sector, markets and globalisation.
2. China's state-owned enterprises (SOEs) were seen as inefficient and bureaucratic. However, rather than privatising them or letting them weaken with neglect, the Chinese state restructured the SOEs.
3. On the one hand, the state retreated from light manufacturing and export-oriented sectors, leaving the field open for the private sector.
4. On the other, SOEs strengthened their presence in strategically important sectors such as petrochemicals and telecommunication as well as in technologically dynamic industries such as electronics and machinery.

Indian Experience:

1. When India inaugurated planning and industrialisation in the early 1950s, it was possibly the most ambitious of such initiatives in the developing world.

2. Public sector funding of the latest technologies of the time including space and atomic research and the establishment of institutions such as the Indian Institutes of Technology (IITs) were among the hallmarks of that effort. Many of these institutions have over the years attained world-class standards.
3. The growth of information technology and pharmaceutical industries has been the fastest in Bengaluru and Hyderabad.

Challenges to India technological sovereignty:

1. However, the roadblocks to progress have been many, including India's poor achievements in school education.
2. In 1991, when India embraced markets and globalisation, it should have redoubled efforts to strengthen its technological capabilities. Instead, the spending on research and development as a proportion of GDP declined in India from 0.85% in 1990-91 to 0.65% in 2018.
3. In contrast, this proportion increased over the years in China and South Korea to reach 2.1% and 4.5%, respectively, by 2018.

Supply and demand factors

Despite the setbacks, India still possesses favourable supply and demand factors that can propel it into the frontlines of technology.

1. The number of persons enrolled for tertiary education in India (35.2 million in 2019) is way ahead of the corresponding numbers in all other countries except China.
2. Further, graduates from STEM (Science, Technology, Engineering and Mathematics) programmes as a proportion of all graduates was 32.2% for India in 2019, one of the highest among all countries (UNESCO data).
3. Without doubt, India needs to sharply increase its public spending to improve the quality of and access to higher education. An overwhelming proportion of tertiary students in India are enrolled in private institutions: it was 60% for those enrolled for a bachelor's degree in 2017, while the average for G20 countries was 33%, according to OECD.
4. India — which will soon have twice the number of Internet users as in the U.S. — is a large market for all kinds of new technologies. While this presents a huge opportunity, the domestic industry has not yet managed to derive the benefits.
5. For instance, the country is operating far below its potential in electronic manufacturing. Electronic goods and components are the second-largest

item, after oil, in India's import bill. Also, the country's imports are almost five times its exports in this industry (based on 2020-21 data).

6. High-value electronic components needed in the manufacture of, say, mobile phones are technology- and design-intensive. Big multinational companies control these technologies and corner the bulk of the revenues.
7. China has used its large market size as a bargaining chip in negotiations with the foreign firms: stay in our markets only if you localise production and share technologies with the local firms.
8. Meanwhile, there have been aggressive efforts to enhance China's own technological strengths through its research institutions and SOEs.

Way Forward:

1. The 'Make in India' initiative will have to go beyond increasing the 'ease of business for private industry.
2. Indian industry needs to deepen and broaden its technological capabilities.
3. This will happen only if universities and public institutions in the country are strengthened and emboldened to enter areas of technology development for which the private sector may have neither the resources nor the patience.
4. Over the last three decades, PSUs in India have been judged mainly on the short-term financial benefits they bring. Instead, they should be valued for their potential long-term contributions to economic growth, the technologies they can create, and the strategic and knowledge assets they can build.
5. A strengthened public sector will create more opportunities for private businesses and widen the entrepreneurial base. Small and medium entrepreneurs will flourish when there are mechanisms for the diffusion of publicly created technologies, along with greater availability of bank credit and other forms of assistance.
6. The next big story about Indian prowess does not have to be from the U.S. but could come from thousands of such entrepreneurs in far-flung corners of the country.