# Ransomware Attack Disrupts Bank Operations

**For Prelims:** Ransomware, Regional Rural Banks, National Payments Corporation of India, Unified Payments Interface, Aadhaar-enabled payment systems, Malware

**For Mains:** Impact of Ransomware on the Financial Sector, Cybersecurity Measures, Government Initiatives

**Source: IE**

## Why in News?

Recently, a **ransomware attack** severely disrupted the operations of at least 150-200 cooperative banks and **Regional Rural Banks (RRBs)** in India.

- The **National Payments Corporation of India (NPCI)** has identified the attack, which has primarily affected banks serviced by **C-Edge Technologies Ltd.,** a joint venture between **Tata Consultancy Services Ltd. (TCS)** and **State Bank of India (SBI).**

## How has the Ransomware Attack Affected the Banks?

- The ransomware attack targeted C-Edge Technologies Ltd., impacting their ability to provide services to cooperative banks and RRBs.
  - Customers of the affected banks were unable to access payment systems, including Unified Payments Interface (UPI) and **Aadhaar-enabled payment systems (AePS).**
  - Some RRBs, depending on their sponsor banks, continued to function normally as they use different technology service providers.
- **Broader Implications for the Payment Ecosystem:**
  - The attack highlights the **vulnerability of technology service providers** and their critical role in maintaining the payment infrastructure.
  - The incident underscores the **need for robust** cybersecurity measures to protect against such attacks in the future.
  - Cooperation between NPCI, banks, and technology providers is crucial to swiftly address and mitigate the impacts of such disruptions.

**Note:** AePS is a bank-led model that allows **online interoperable financial transactions** at Point of Sale (PoS) or micro-ATMs through the Business Correspondent of any bank using **Aadhaar authentication.**

- It was taken up by NPCI, a joint initiative of **Reserve Bank of India (RBI)** and **Indian Banks' Association (IBA)** to provide easy and secure access to banking services for the poor and marginalised, especially in rural and remote areas.

## What is Ransomware?

- **Definition: Ransomware is a type of** malware that encrypts a victim's data or locks their device, demanding a ransom for the decryption key or to regain access.
- **Early Attacks:** Initially, ransomware attacks focused on **encrypting data and demanding a ransom for the decryption key.**
- **Modern Tactics:** Recent ransomware attacks have evolved to include double-extortion and triple-extortion tactics:
    - **Double-extortion:** Attackers threaten to leak stolen data online if the ransom is not paid.
    - **Triple-extortion:** Attackers use stolen data to target the victim's customers or business partners.
- **Types of Ransomware:**
    - **Encrypting Ransomware (Crypto Ransomware):** Encrypts the victim's data, demanding a ransom for the decryption key.
    - **Non-encrypting Ransomware (Screen-locking Ransomware):** Locks the victim's entire device, displaying a ransom demand on the screen.
    - **Subcategories of Ransomware Include:**
        - **Leakware or Doxware:** Steals and threatens to publish sensitive data.
        - **Mobile Ransomware:** Affects mobile devices, often using screen-lockers.
        - **Wipers:** Threaten to destroy data, sometimes even if the ransom is paid.
        - **Scareware:** Uses fear tactics to coerce payment, sometimes posing as legitimate alerts.
- **Ransomware as Cyber Threat:**
    - **Financial Impact:** Ransomware attacks can cost organisations millions of dollars.
        - An IBM (International Business Machines Corporation) report showed that the **average cost of a data breach touched an all-time high of Rs 19.5 crore (USD 2.35 million)** in financial year 2024, up by around 7% over 2023, with the local industrial sector being the most impacted.
        - Ransomware victims and negotiators are reluctant to disclose ransom payments.
    - **Speed of Attacks:** Once hackers gain access to a network, they can deploy ransomware in **less than four days,** giving organisations **little time to detect and respond.**
- **Steps for Responding to a Ransomware:**
    - **Isolate the infected device from the network** to contain the infection. Disconnect all suspiciously behaving devices from the network to stop the spread of infection.
    - Identify the **entry point by checking for any alerts** from any active monitoring platform and identify the ransomware by scanning encrypted files and ransom notes.
    - **Prioritize the restoration of systems** by restoring the most critical ones first, followed by eradication of the threat from the network.
        - If backup is available, restore the systems from a backup. **Otherwise, try for decryption options.**

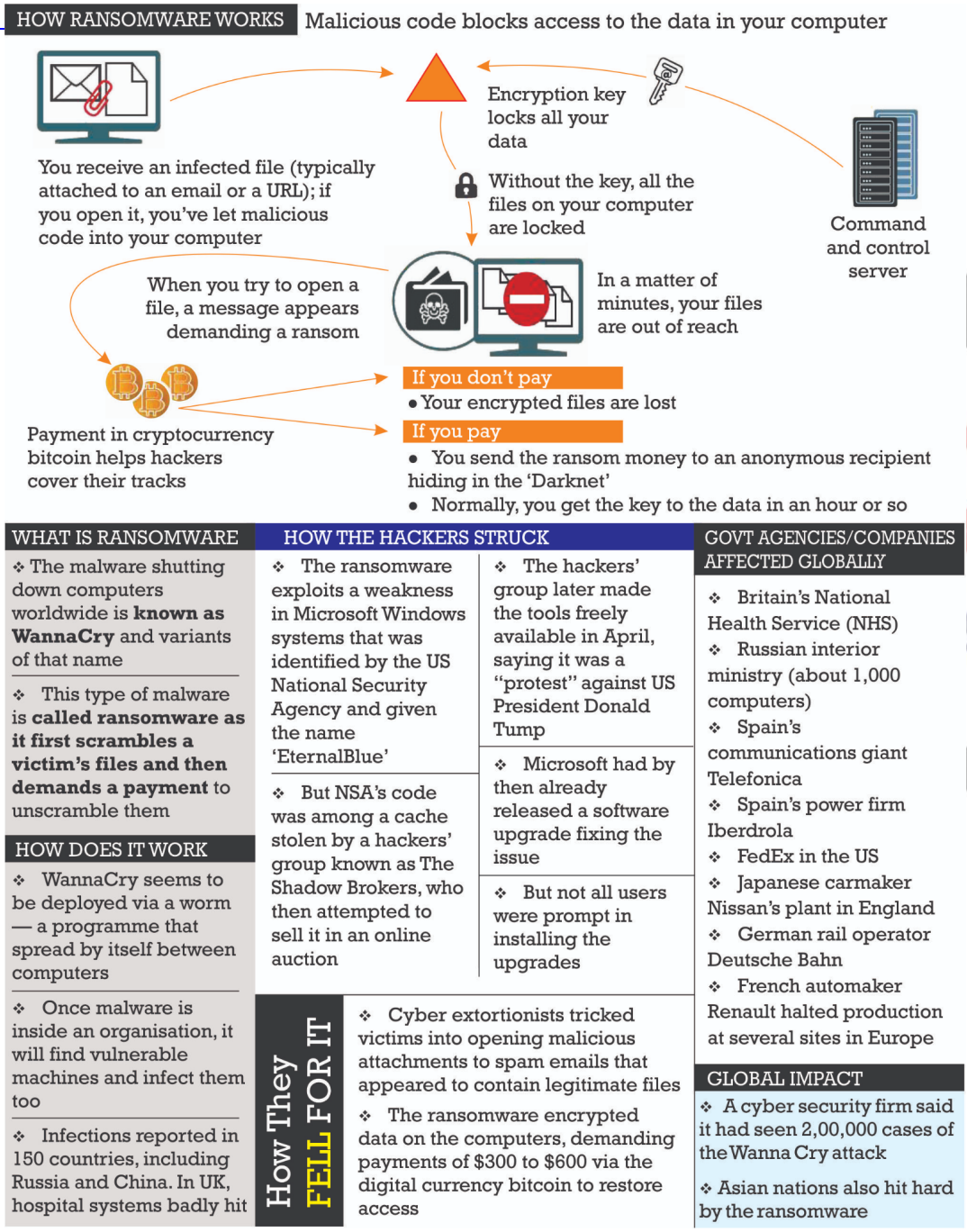
## How does Ransomware Infect Systems?

- **Phishing:** It is a type of cyberattack that uses **Social Engineering tricks** to deceive victims into downloading ransomware through malicious attachments or links.
    - Social engineering is the use of psychological manipulation to trick users into making security mistakes or revealing sensitive information.
- **Exploiting Vulnerabilities:** Uses existing or zero-day vulnerabilities to inject ransomware.
- **Credential Theft:** Steals authorised user credentials to deploy ransomware.
- **Other Malware:** Use other malware (e.g., Trojans) to spread ransomware.
- **Drive-by Downloads:** Infects devices through compromised websites.
- **Ransomware as a Service (RaaS):** Allows cybercriminals to use ransomware developed by others in exchange for a share of the ransom.

Notable Ransomware Variants

- **Akira Ransomware**
- **LockBit Ransomware**
- **CryptoLocker:** Credited with kick-starting the modern age of ransomware in 2013.

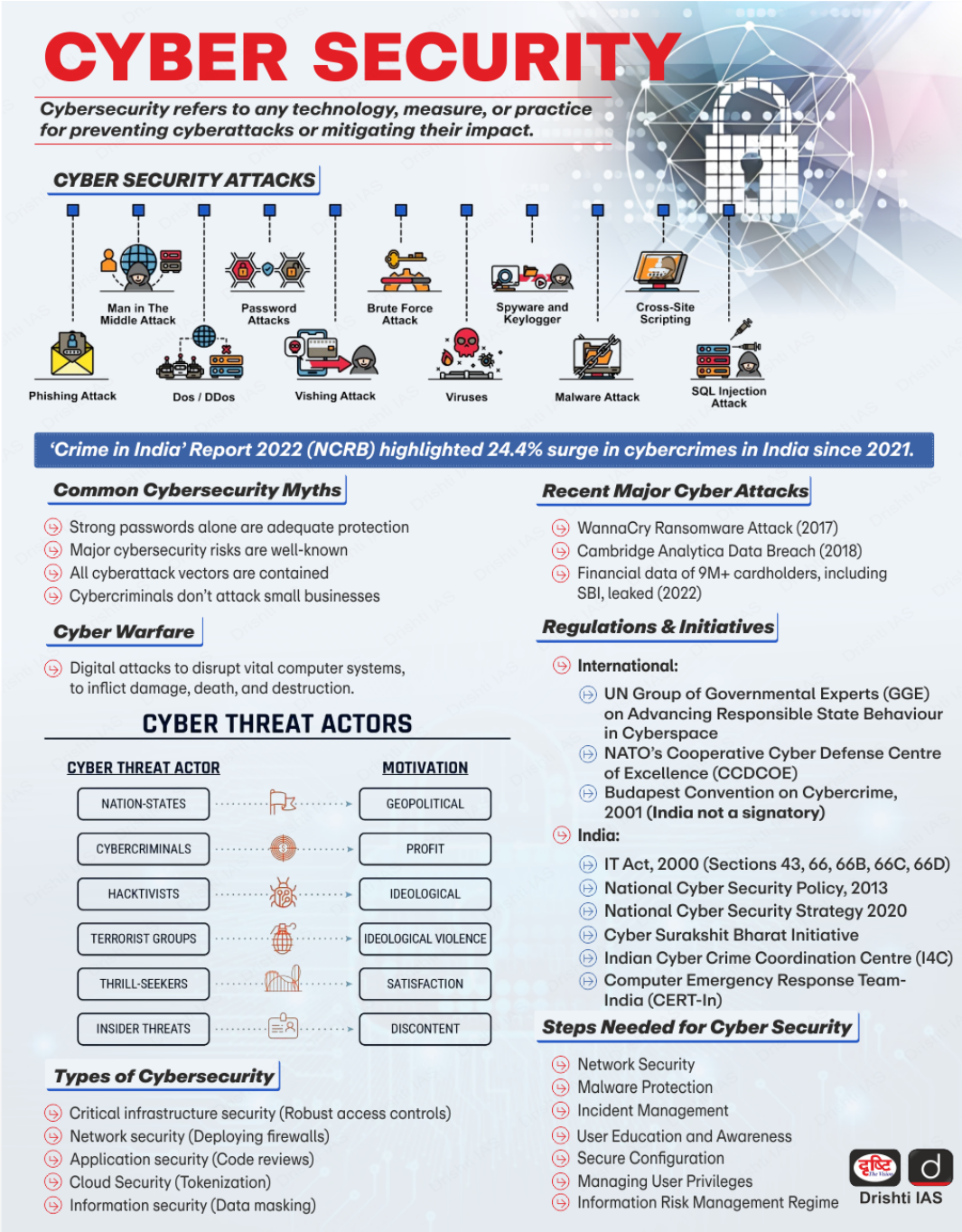
- **WannaCry:** A cryptoworm that attacked over 200,000 computers in 150 countries in 2017.
- **Petya and NotPetya:** Encrypts the file system table, rendering computers unable to boot.
- **Ryuk:** Popularized big-game ransomware attacks against high-value targets.
- **DarkSide:** Responsible for the Colonial Pipeline attack in 2021.
- **Locky:** Uses macros in email attachments to infect devices.
- **REvil:** Known for big-game hunting and double-extortion attacks.
- **Conti:** Operated a RaaS scheme, using double-extortion tactics.




## What are the Legislations to Protect Against Ransomware Attacks in India?

- Ransomware attacks constitute various offences under the **Indian Penal Code 1860** and the **Information Technology(IT) Act 2000.**
    - The IT Act has **relevant provisions include: Section 43 and 66 (damage to**

**computer/system), Section 65 (tampering with computer source documents), and Section 66D (cheating by personation).** Additionally, corporate bodies holding sensitive personal data have an obligation to implement reasonable security practices under the IT Rules.
    - The punishment for ransomware attacks under the IT Act ranges from imprisonment for a term of three years to seven years and a fine of up to Rs. 1 crore.
- The **Ransomware Task Force (RTF)** is a specialised unit within **India's National Cyber Security Coordinator (NCSC)** organisation that serves as a central point of contact for victims of ransomware attacks, providing assistance with investigation, recovery, and prevention efforts.
- **Cybersecurity Framework for the Indian Banking Sector, 2018,** issued by the RBI provides specific guidelines for banks and financial institutions to protect against cyber threats, including ransomware attacks.
    - It mandates banks to implement robust cybersecurity measures, such as multi-factor authentication, encryption, and regular security audits.




## Way Forward

- **Cybersecurity Enhancements:** Banks and technology service providers must implement robust cybersecurity measures, including **endpoint protection, network security, data backup, and employee training.**
    - Improved threat detection and prevention have led to an 11.5% decline in ransomware infections between 2022 and 2023.
    - Establish a centralised platform for sharing **threat intelligence among banks and financial institutions.**
- **Data Backup and Recovery:** Implement robust data backup and recovery procedures, including offline backups. Develop comprehensive business continuity plans to ensure minimal disruption in case of a cyberattack.
- **Enhanced Security Standards:** Conduct rigorous security assessments of third-party vendors and partners. Improve incident response capabilities to minimize the impact of cyberattacks.
    - Obtain relevant **cybersecurity certifications** to demonstrate commitment to security.

**Drishti Mains Question:**
**Q.** Analyze the effects of the ransomware attack on the banking ecosystem and what measures can organisations implement to mitigate these risks?

## UPSC Civil Services Examination Previous Year Question (PYQ)

### ***Prelims:***

**Q. The terms 'WannaCry, Petya and EternalBlue' sometimes mentioned in the news recently are related to (2018)**

(a) Exoplanets
(b) Cryptocurrency
(c) Cyber attacks
(d) Mini satellites

**Ans: (c)**

**Q. In India, it is legally mandatory for which of the following to report on cyber security incidents? (2017)**

1. Service providers
2. Data centres
3. Body corporate

**Select the correct answer using the code given below:**

(a) 1 only
(b) 1 and 2 only
(c) 3 only
(d) 1, 2 and 3

**Ans: (d)**

### ***Mains:***

Q.What are the different elements of cyber security? Keeping in view the challenges in cyber security, examine the extent to which India has successfully developed a comprehensive National Cyber Security Strategy. **(2022)**

Q. Discuss the potential threats of Cyber-attack and the security framework to prevent it. **(2016)**