India's Digital Landscape with PM-WANI

For Prelims: PM WANI, India's Digital Public Infrastructure (DPI)

For Mains: Role of PM-WANI in India's Digital Public Infrastructure (DPI), Digital Public Infrastructure (DPI)

Source: IE

Why in News?

The **Prime Minister Wi-Fi Access Network Interface (PM WANI)** scheme is set to **revolutionize public Wi-Fi in India.** PM-WANI can be a **potential game-changer for** India's digital public infrastructure.

- The scheme enables **public Wi-Fi data service through small retail data offices**, which can potentially **bring broadband internet to remote locations at a minimum investment.**

What is PM-WANI?

- **About:**
  - The PM-WANI, launched by the **Department of Telecom (DoT) in December 2020,** is one key scheme launched to bolster the penetration of **public WiFi hotspots to establish a robust digital communication infrastructure throughout the nation, especially in rural areas.**
  - It is a framework that enables any entity, such as a shopkeeper, a tea stall owner, or a Kirana store owner, to set up a public Wi-Fi hotspot and provide internet service to customers.
  - This framework takes forward the goal of the **National Digital Communications Policy, 2018 (NDCP)** of creating a robust digital communications infrastructure.
- **Importance:**
  - To facilitate **ease of doing business and encourage local shops and small establishments** to become Wi-Fi providers, it has been approved that the last-mile Public Wi-Fi providers require no license, no registration and will not need to pay any fees to DoT.
- **PM-WANI Ecosystem:**
  - PM-WANI consists of four elements:
    - **Public Data Office (PDO):** PDO is the entity that **establishes, maintains, and operates the Wi-Fi hotspot** and provides last-mile connectivity to the users by procuring internet bandwidth from telecom service providers or internet service providers.
    - **Public Data Office Aggregator (PDOA):** PDOA is the entity that provides aggregation services, such as **authorization and accounting,** to PDOs, and facilitates them in providing services to the end users.
    - **App Provider:** It is the entity that develops an application to register users and discover and display PM-WANI compliant Wi-Fi hotspots in proximity for accessing the internet service and also authenticate the potential users.

            - **Central Registry:** It is the entity that **maintains the details of App Providers, PDOAs, and PDOs**. It is currently maintained by the **Centre for Development of Telematics (C-DoT).**
        - **Status:**
            - As of November 2022, the PM-WANI central registry reported the existence of **188 PDO aggregators, 109 app providers, and 11,50,394 public WiFi hotspots.**
- **Benefits of PM-WANI:**
    - It can **expand Internet access** in rural and remote areas.
    - It can provide an **affordable and convenient option for internet access**, as compared to **mobile** technologies like 5G**,** which require high investment and subscription costs.
    - It can stimulate **innovation and competition in the internet market.**
- **Challenges of PM-WANI:**
    - **Ensuring Wi-Fi quality and user experience poses challenges** related to **bandwidth availability, managing user numbers, device compatibility,** and maintaining data security and privacy.
    - Security threats like **data leakage, hacking, and** malware can jeopardize user and provider privacy.
    - **Mobile telecom companies might face challenges,** including market share and revenue loss, due to PM-WANI's affordability and accessibility.
    - Expanding and **maintaining PM-WANI in rural and remote areas** with low internet demand and **high operational costs** could be challenging.

How can PM-WANI be a Game-Changer for India’s Digital Public Infrastructure?

- PM-WANI is a key part of **India's Digital Public Infrastructure (DPI).** It can democratize internet access and bridge the digital divide by enabling anyone to become a Wi-Fi provider and anyone to become a Wi-Fi user, without any license, registration, or fee.
- Leverage the existing physical and social infrastructure, such as the shops, the CSCs, the SDCs, the post offices, the schools, the panchayats, etc., to create a distributed and decentralized network of Wi-Fi hotspots, and also utilize the existing digital infrastructure, such as **Aadhaar, UPI, e-KYC, e-Sign,** etc., to enable **seamless and secure authentication and payment of the Wi-Fi services.**
- Empower the citizens and the communities by providing them access to information, knowledge, opportunities, and services that can **improve their quality of life, and also enable them to participate and contribute to the digital economy and society.**

What is Digital Public Infrastructure (DPI)?

- **About:**
    - DPI refers to blocks or platforms such as **digital identification, payment infrastructure and data exchange solutions** that help countries deliver essential services to their people, empowering citizens and improving lives by enabling digital inclusion.
    - DPIs mediate the **flow of people, money and information.** First, the flow of people through a **digital ID System**. Second, the flow of money through a **real-time fast payment system.** Third, the flow of **personal information through a consent-based data-sharing system** to actualize the benefits of DPIs and to empower the citizens with a real ability to control data.
        - These three sets become the foundation for developing an effective DPI ecosystem.
    - Operates under open, transparent, and participatory governance.
    - India, through India Stack, became the first country to develop all three foundational DPIs, Digital identity (Aadhar)**,** Real-time fast payment (UPI)and **Account Aggregator** built on the **Data Empowerment Protection Architecture (DEPA).**
- **Constitutes Digital Public Infrastructure (DPI):**
    - DPI comprises three integral layers:
        - **Market:** Innovative and competitive players designing inclusive products.
        - **Governance:** Legal and institutional frameworks, public programs, and policies.
        - **Technology Standards:** Identity, payments, and data sharing standards for interoperability.
- **Benefits of DPI's Approach:**

    - Reduced **development costs and modular end-user solutions.**
    - An ecosystem of **diverse applications and lower entry barriers.**
    - A democratic, non-monopolistic system with built-in scalability.
- **Successful DPI Initiatives in India:**
    - **Aadhaar,** Unified Payment Interface (UPI)**, and** CoWin**. Others like** Unified Health Interface (UHI)**,** Ayushman Bharat Digital Mission (ABDM)**, and** Open Network for Digital Commerce **are in progress.**

UPSC Civil Services Examination Previous Year's Questions (PYQs)

Prelims:

Q. Consider the following statements: (2018)

1. Aadhaar card can be used as a proof of citizenship or domicile.
2. Once issued, Aadhaar number cannot be deactivated or omitted by the Issuing Authority.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Ans: (d)