Direct-to-mobile technology

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The Telecommunication Engineering Centre (TEC) has flagged challenges that could crop up in the implementation of the direct-to-mobile (D2M) technology, which would pave the way for streaming television content directly to mobile phones, without an internet connection.

[ref-Economictimes]

What is D2M?

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- D2M is a **broadcasting technology** designed to **transmit multimedia content** directly to consumers' smartphones **without the need for an active internet connection**.
- Traditionally, it has been employed for **issuing emergency alerts** and assisting in disaster management.
    - However, its versatility extends beyond these conventional applications.
- D2M allows governments to **broadcast citizen-centric information**, and telecom operators can collaborate with content providers to deliver multimedia content, including **live news,** without putting excessive strain on network bandwidth.
- This approach **benefits consumers** by **reducing their reliance on internet data** consumption for staying informed and entertained.

How does D2M technology work?

- D2M technology functions in a manner similar to listening to **FM radio on a smartphone**, where a **receiver taps into radio frequencies**.

- Another comparison is **direct-to-home (DTH) broadcasting**, in which a dish antenna receives broadcast signals directly from satellites and transmits them to a receiver, known as a set-top box.

Why it is not ready for rollout?

- Currently, mobile devices lack support for D2M technology as it requires the **ATSC 3.0 standard**.
    - ATSC 3.0 represents the **latest version** of the **Advanced Television Systems Committee** standards, designed to define how television signals from different networks, including terrestrial, satellite, and cable networks, are broadcasted and interpreted by devices.
- To make devices compatible, a **separate baseband processing unit**, antenna, low-noise amplifiers, baseband filters, and a receiver are needed, **increasing smartphone costs** and potentially disrupting LTE and 5G network designs.
- The **current network infrastructure** is not equipped to transmit signals for D2M.
    - It requires a **dense network of terrestrial towers** to receive signals from satellites and transmit them to devices, necessitating smaller device antennas.

Alternative to D2M:

- An alternative to D2M is 5G Broadcast technology, **currently undergoing testing**.
- It utilizes **high towers with powerful transmitters** to distribute media content via continuous, linear data streams.
- This approach eliminates the **need for a new processing unit**, potentially reducing device costs.
- 5G Broadcast is compatible with both 5G and 4G, operates within the existing network setup, and **eliminates the need for a separate processing unit**.
- It **utilizes high towers with powerful transmitters** for efficient content distribution.