



eSIMs Technology

For Prelims: eSIMs Technology, Technology related to Telecommunication.

For Mains: Advantages and Disadvantage of eSIM Technology.

Why in News?

Apple Inc., an American multinational technology company, has come up with a **physical SIM slot** or an eSIM in order **to access mobile networks**.

Switch Operators at Will

Mobile phone users may soon be able to change operators on a whim, thanks to embedded SIM, or eSIM cards. Telecom providers will be able to raise their game to retain users, say company executives and experts

What is an eSIM?
eSIM is a digital SIM card

Its uses...
Subscribers can use the eSIM to activate a mobile tariff plan without recourse to a physical SIM

Who or what will suffer...
Carriers will have to work harder to retain or acquire new customers
This may lead to competition intensifying
Margins may be hurt as customer cost may rise

Telcos' Stance
Vodafone Idea & Bharti Airtel say they are ready to work with eSIMs
Airtel & Reliance Jio have already partnered with **Apple** to sell eSIM enabled **Apple Watches**

Its current application...
eSIMs are largely being used for IoT and Machine-2-Machine solutions

Challenges
The handset ecosystem is at a nascent stage
eSIMs adoption rate among consumers has been slow as it has been introduced only on high-end devices

Future Outlook
Only a few smartphones – **iphones XS, XS Max, XR** and **Google Pixel 3**, which are premium devices – support eSIMs
eSIM penetration in India is less than **1%**. It is expected to grow to **25%** by **2025**
Globally, the eSIM market is estimated to grow to **\$978.3 million** in **2023** from **\$253.8 million** in **2018**

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What is an e-SIM?

- eSIMs were first established in 2012.
- It is an **embedded SIM**, which is permanently embedded in the same hardware of a regular sim

card chip.

- Just like a traditional SIM card, an **eSIM also consists of some components**, which are part of a phone's internal organs. They also function the same way, acting as **a unique identifier for telecom operators** and other consumers to reach your exact smartphone when they make a call or send a text.
- However, being attached to the motherboard also allows re-programming, letting users switch operators **without having to replace any physical SIM cards**.

What are the Advantages?

- **Security:**
 - An eSIM provides security to sim theft, as there is no physical element to pull out and use in another device.
 - Attackers cannot use your phone after being robbed to breach your social media or bank accounts.
- **One less opening on your phone:**
 - One less opening on the frame of your phone reduce the likelihood of elements like dust and water entering the phone.
 - It also saves some space on the inside of the phone **to be used elsewhere**.

What are the Disadvantages?

- **Emergencies:**
 - If your phone stops working, runs out of battery or simply falls and gets a cracked screen, your communication is brought to a complete standstill with eSIMs. Traditional SIMs, meanwhile, can be quickly pulled out of the affected phone and into another backup device or secondary phone.
- **Unusable in countries with no eSIM support:**
 - eSIM phones cannot be used in a country **where the telecom operators simply don't support the technology yet**.
 - This isn't an issue if your phone supports both eSIM and traditional SIMs, but is a problem on devices like the US-version iPhone 14, which will solely rely on eSIM alone.
- **Telcos have more control:**
 - An eSIM may save one's initial trip to the telecom operator's store to get a SIM card, but one has to rely on the operator while switching one's phone.
 - Operators may charge extra for **eSIM plans or for switching phones**, in the future.

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