

# India Mobile Broadband Index 2023

10<sup>th</sup> Edition



NOKIA



# About

## Nokia MBit Index



Nokia MBit Index is a report on mobile broadband performance in India. It aims to provide valuable insights, data and analysis of mobile broadband and traffic growth by co-relating these trends with various demand and supply-side drivers of the connectivity ecosystem, such as handsets, devices, content and subscriber usage patterns.

01

The 5G services were launched in India in October 2022. As 5G is gaining momentum with rollout progressing at a fast pace across the country, it is expected to accelerate data consumption, revenue growth & 5G smartphone sales.

02

The 10<sup>th</sup> edition of the report assesses 4G and 5G data traffic growth and trends across India, including circle categories. It also captures data consumption per user and highlights the current device ecosystem in India.

03

The report highlights how 5G is enabling private wireless network for Industry 4.0 applications. It also gives insights into 5G/4G adoption in various sectors, including Manufacturing, Utilities, Transportation, etc.

CAGR of 50% in the last 6 years for mobile data, 19.5 GB avg. data usage per subscriber per month.

14.4 Exabyte

14% (y-o-y) ↑

Mobile data traffic per month in 2022

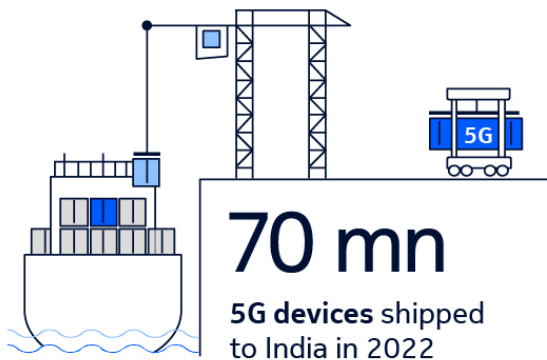
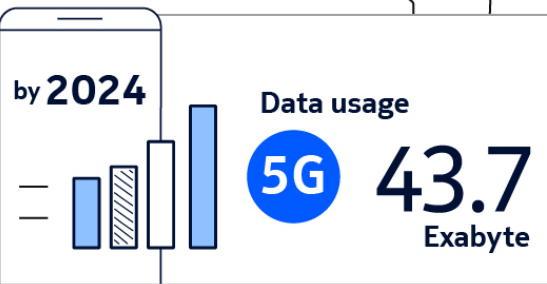
Growth in 5 years  
mobile data traffic



4G + 5G contribution in  
mobile data traffic

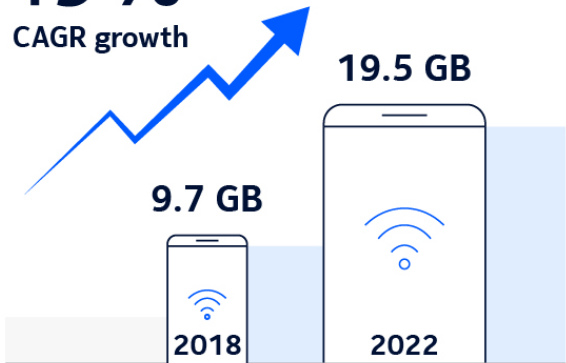
~100%

across all circle  
categories in 2022



Average monthly data traffic per user

19%  
CAGR growth



Investment to the tune of

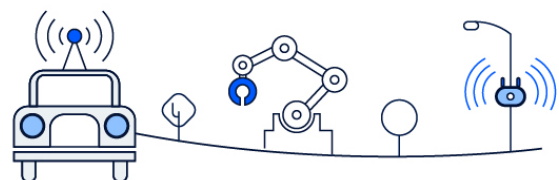
US\$250 mn

by 2027 in private wireless



Majority adoption across

Transport | Manufacturing | Utilities

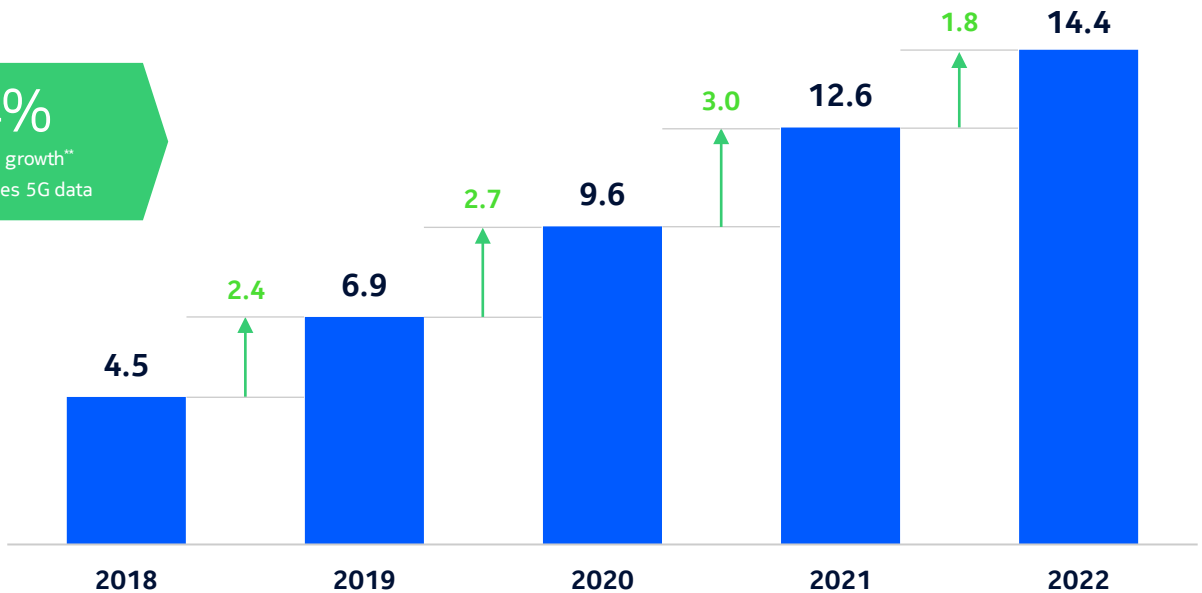


# Mobile data traffic jumped 3.2x in the last five years

## Pan-India mobile data usage – Exabyte (EB\*) per month

14%

y-o-y growth\*\*  
Includes 5G data



- 4G remained dominant with ~99% data share in 2022. 5G data contribution started December 2022 onwards.
- New 5G driven application and services to drive further data growth.
- ~20% (y-o-y) data growth reported in major service providers.

Major 5G uptake is expected starting 2H 2023. Expected **5G data usage** by 2024: (per annum): 43.7 EB.<sup>3</sup>

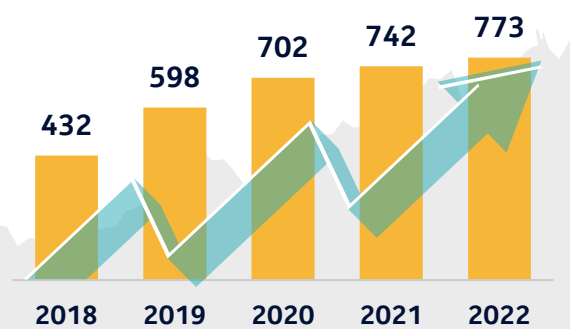
Expected subscribers by 2024 -

- **5G:** ~150 mn<sup>3</sup>
- **Combined (4G + 5G):** ~990 mn<sup>3</sup>

4G subscriber addition stabilizing after ~5 years of solid growth

Further subscriber addition to be driven by 5G and existing 2G subscribers (350 mn)<sup>1</sup> migrating to 5G/4G.

## 4G data subscribers (mn)



**31 million**  
added/migrated in 2022

Source: 1. Nokia Analysis 2. Operator Quarterly Reports, TRAI 3. OMDIA  
\*1EB=1000 PB \*\*Represents y-o-y growth for Dec-21 to Dec-22

# With 5G gaining momentum, 4G & 5G data combined accounts for near 100% of the total mobile data traffic

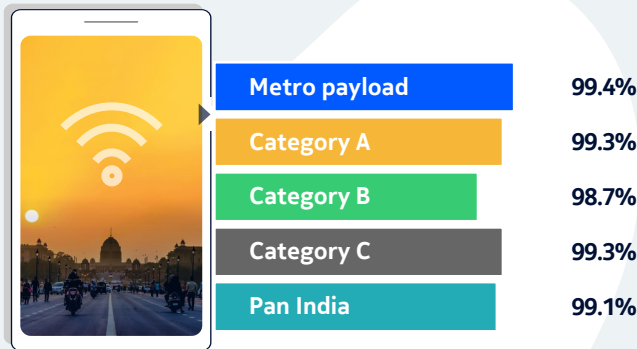
## 4G + 5G payload by category<sup>1</sup> (in Exabyte), per month

as per December data

	Metro payload	Category A	Category B	Category C	Pan India
2022	1.3	5.2	5.5	2.4	14.4
Y-o-Y Growth	▲ 8.9%	▲ 15.1%	▲ 11.3%	▲ 22.2%	▲ 14.2%
2021	1.2	4.5	5.0	2.0	12.6

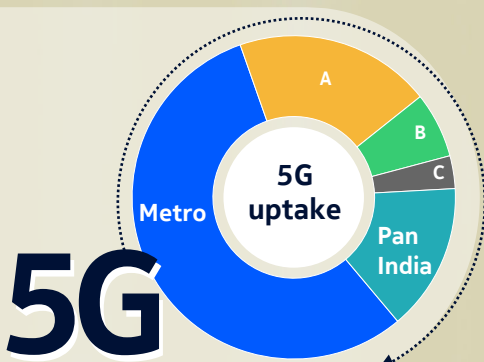
## 4G + 5G contribution<sup>1</sup>

5G launched Oct'22



\* 5G contribution as of December 2022

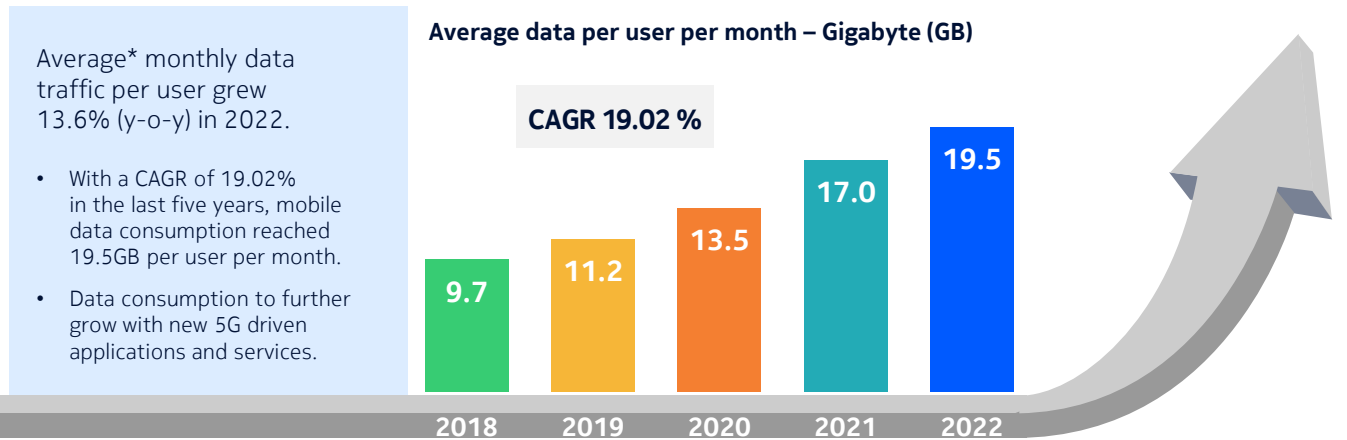
- Category A & B circles constitute 75% of overall data in India.
- Category C witnessed the highest growth (20%)<sup>1</sup> in data owing to aggressive rural deployments in 4G.
- 5G was launched in October 2022. Infrastructure build-up and rollout is still underway.
- Service providers are aiming for pan India 5G availability in next 12-15 months.



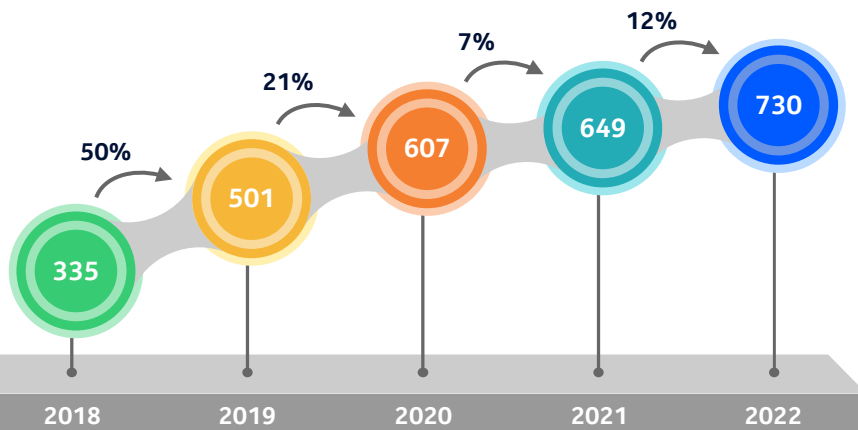
5G has started picking up across circles, e.g. 5G traffic in Metro is 3% – 5% of total data traffic (as of December 2022)

# Average data per user per month grew 2x in the last five years

**Cumulative 5G smartphone shipments to cross the 100 mn mark in Q2 2023, surpassing 4G smartphone shipments by the end of 2023<sup>2</sup>**



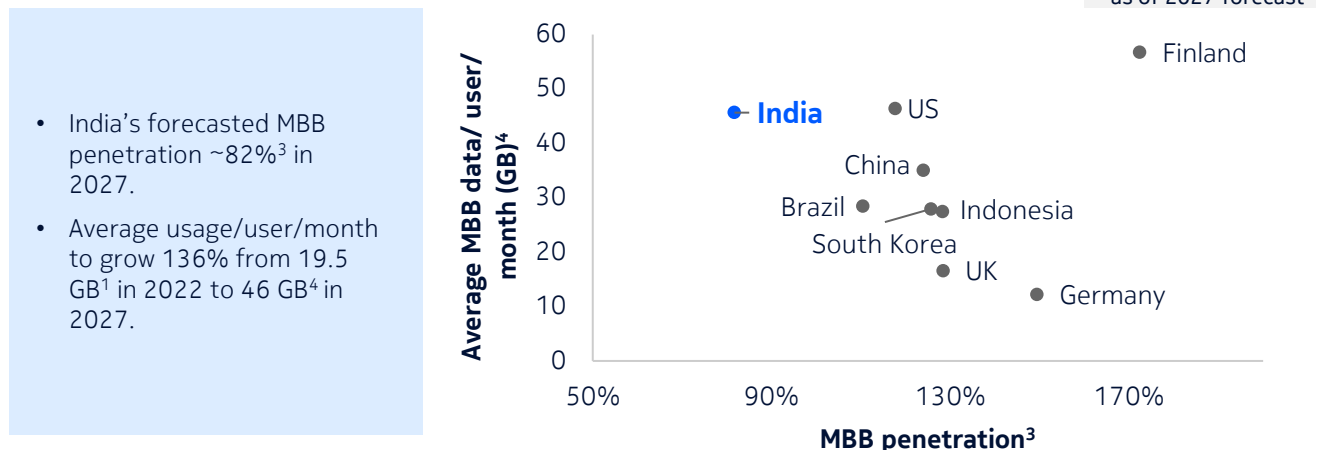
## 4G capable unique devices (mn)



## 4G/5G device ecosystem in India

- 730 mn<sup>1</sup> Active 4G capable devices.
- 85 mn<sup>1</sup> (out of 730 mn) are 5G capable devices.
- 70 mn<sup>1</sup> 5G devices shipped to India in 2022.
- Improved 5G availability will further accelerate 5G smartphone growth in 2023, ~62% (y-o-y).<sup>2</sup>

## India will continue to rank amongst the top data consuming countries



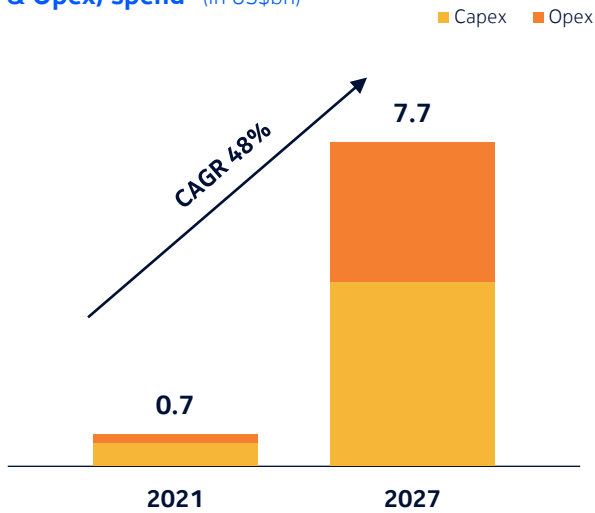
Source: 1. Nokia analysis 2. Media Reports 3. GSMA intelligence 4. GlobalData  
\* Avg. data per user/month (GB)

# India's total spend on private wireless network to reach around US\$250mn by 2027<sup>1</sup>

- Private wireless network is experiencing a lot of traction across the globe: Western Europe, APAC, and North America are among the front runners.
- India's market is evolving as future enterprise business revenues are pegged at almost 40% of overall 5G revenues.

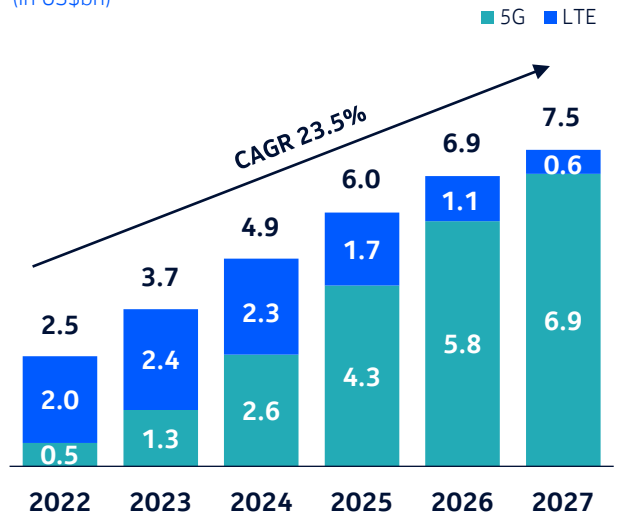
## How big is the private wireless network opportunity?

**Global: Private wireless network 5G & LTE (Capex & Opex) spend<sup>2</sup>** (in US\$bn)



- Global private 5G/LTE (Capex & Opex) spend projected to reach US\$7.7bn by 2027, increasing at a CAGR of 48% (2021-2027).

**Global: Private wireless network (5G & LTE) revenue<sup>3</sup>** (in US\$bn)



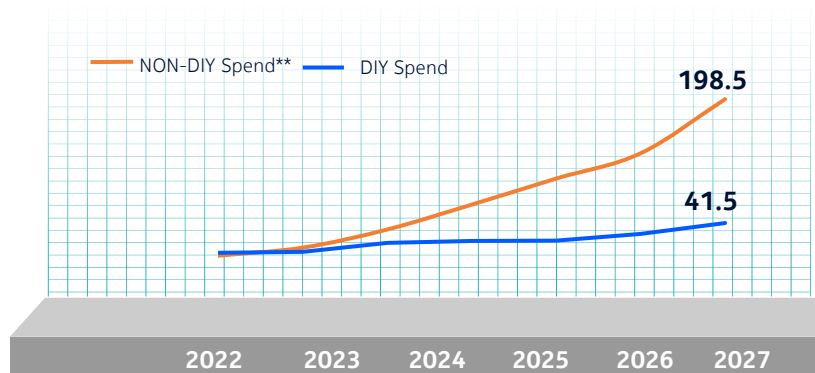
- Global private LTE/5G revenues projected to reach US\$7.5bn by 2027, increasing at a CAGR of 23.5% (2022-2027).

Globally, operators are addressing the opportunity via a mix of technologies and it is expected that the private 5G market will eclipse the private LTE market in 2024 as enterprises leverage 5G as a foundational platform for digital transformation.

## India: Total NON-DIY (SPaaP and others) and DIY (enterprise owned) spend<sup>1</sup>

(in US\$m)

- Total spend on private wireless networks in India will reach around US\$250mn by 2027 (including managed services, equipment leasing and direct CAPEX by enterprises).
- The NON-DIY managed services model will be the primary deployment model used in India.



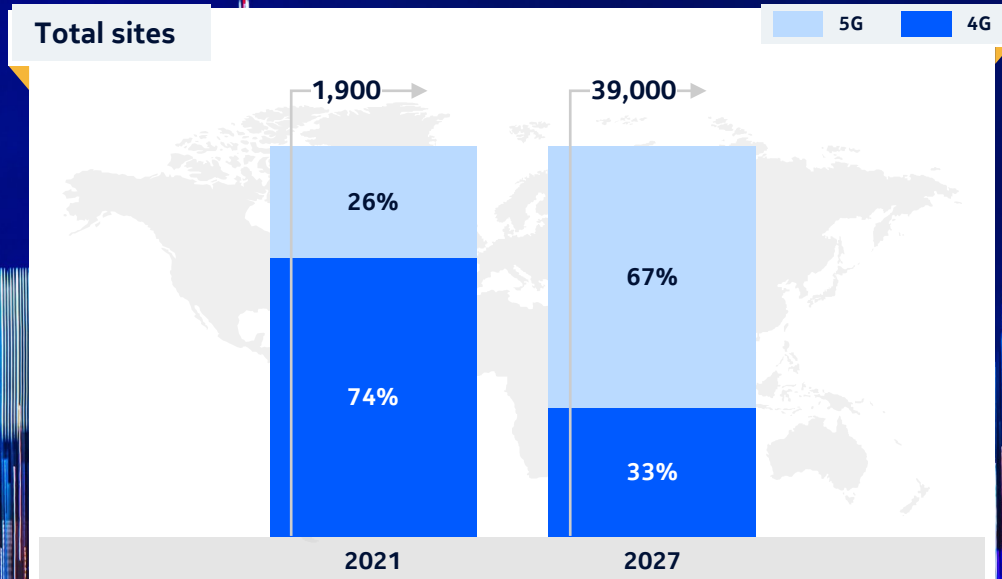
Source: 1. Mandala insights 2. Media Reports 3. OMDIA

\*\*Non-DIY spend includes "managed service" utilizing telco-owned spectrum or through a leasing arrangement for dedicated spectrum and equipment. Spending on Private wireless networks in this DIY category would cover the costs of spectrum acquisition and commercialization, equipment/software purchase and network operations.

# India to have 2,000+ sites for private wireless network by 2027<sup>1</sup>

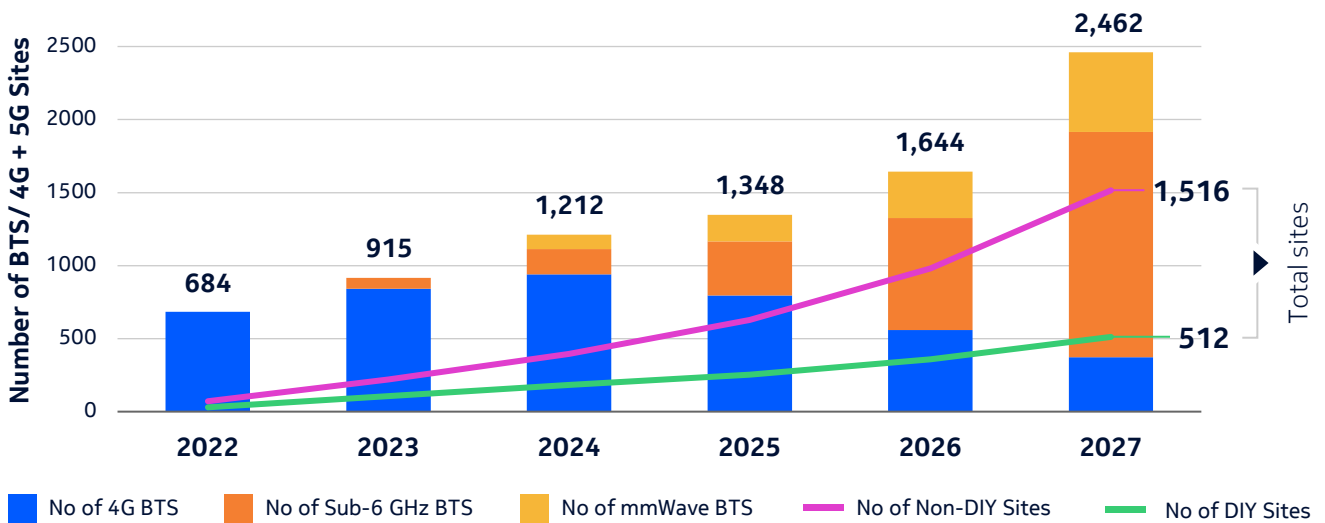
Globally, the number of private LTE/5G wireless network to grow at a CAGR of 65% between 2021 (1,900) and 2027 (39,000)<sup>2</sup>.

## Global: Private wireless network deployment (sites) split, by technology<sup>2</sup>



India's private wireless network sites rollout projected to be ~6% of the global deployment<sup>3</sup>.

## India: Number of private wireless network sites and base stations (deployed/ planned/ trial)<sup>1</sup>



India to have 372 base stations<sup>1</sup> (BTS) for 4G LTE in 2027 and 2,090<sup>1</sup> for 5G overall across sub-6 GHz and mmWave.

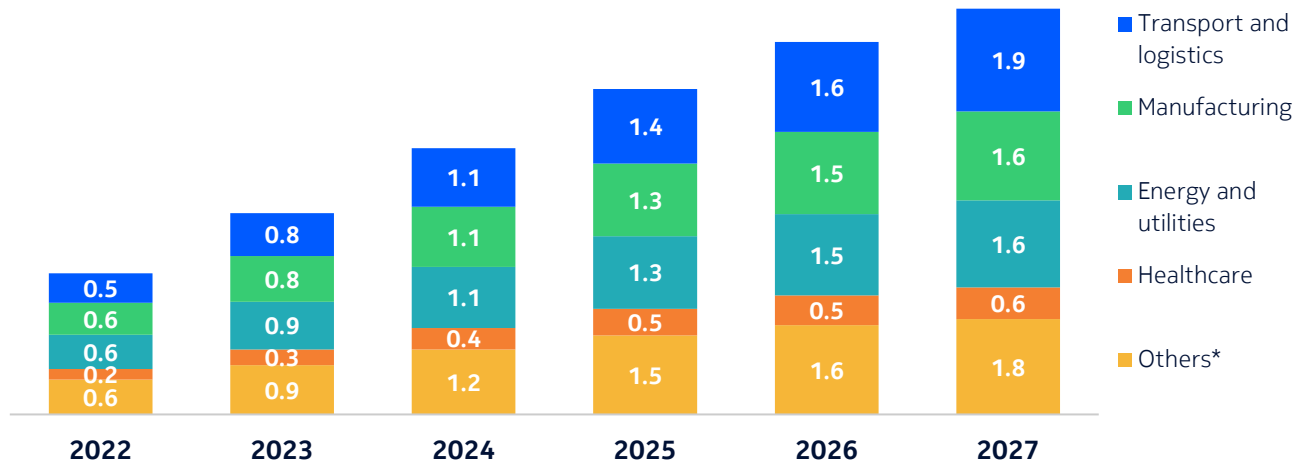
Source: 1. Mandala insights 2. Media Reports 3. Nokia analysis



# Manufacturing, Utilities and Transportation to constitute the majority of private wireless network deployment<sup>1</sup>

**Global: Manufacturing, Energy and Utility, Transport and Logistics, and Healthcare to constitute over 76% of the total private wireless network market revenue by 2027<sup>2</sup>.**

Private (LTE and 5G) wireless network market revenue by industry<sup>2</sup> (in US\$bn)



\*Others include: Public sector – Government, Education, Arts, media, and entertainment, Retail and real estate and other verticals

**India: Manufacturing, Utility, and Transport to constitute over 44% of the total private wireless network sites by 2027<sup>1</sup>**

	2022	2023	2024	2025	2026	2027
<b>Transport</b>	20	52	87	133	169	205
<b>Manufacturing</b>	42	72	125	194	280	380
<b>Utilities</b>	-	85	127	141	197	315
<b>Healthcare</b>	6	13	28	53	94	157
<b>Others</b>	31	104	211	359	598	971

\*Others include: Government, Education, Resource and construction and other industries

2023 should see a significant spurt in activity with scaled-up deployments and increasing ecosystem maturity.

Source: 1. Mandala Insights 2. OMDIA

# India marching ahead into the digital era

1  
Mobile data in India will grow more than double by 2024, with 5G as the new accelerator

2  
Private 5G networks to play a crucial role in driving efficiency, productivity and sustainability as enterprises evolve to Industry 4.0

3  
India to evolve as a global manufacturing and supply chain hub for ICT - 5G/4G driven Industry 4.0 adoption and government push to boost manufacturing as key factors

4  
5G will be the foundation for a greener economy - No green without Digital





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Through networks that sense, think and act, we work with our customers and partners to create the digital services and applications of the future.

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