



**BOSCH**

Bosch Limited  
Post Box No:3000  
Hosur Road, Adugodi  
Bangalore-560030  
Karnataka, India  
Tel +91 80 67523878  
www.bosch.in  
L85110KA1951PLC000761  
[Secretarial.corp@in.bosch.com](mailto:Secretarial.corp@in.bosch.com)

Corporate Relationship Department  
BSE Limited  
1<sup>st</sup> Floor, New Trading Ring  
Rotunda Building  
Phiroze Jeejeebhoy Towers  
Dalal Street, Fort  
Mumbai – 400 001  
Scrip code:500530

The Manager  
Listing Department  
National Stock Exchange of India Ltd.  
Exchange Plaza, C-1, Block G  
Bandra-Kurla Complex  
Bandra (E)  
Mumbai – 400 051  
Scrip code: BOSCHLTD

19.08.2024

Dear Sir/Madam,

**Sub: Intimation of outcome of Analyst/Financial Institution/Investor Meetings under the SEBI (Listing Obligations and Disclosure Requirement) Regulations, 2015. Presentation Made at Investor Meeting held today.**

In pursuance of Regulation 30 of the Securities and Exchange Board of India (Listing Obligations and Disclosures Requirements) Regulations, 2015 and in continuation of our earlier letter dated. 12.08.2024, intimating schedule of Investor meet on August 19, 2024, at 10.00 hrs please find enclosed presentation made thereat.

Please note that the Company has referred to publicly available documents for discussions at the meeting.

This is for the information of the exchange and the members.

Thanking you,

**Yours Sincerely,  
for Bosch Limited,**

**V Srinivasan  
Company Secretary & Compliance Officer**

# Future of Mobility



**Guruprasad Mudlapur**

**Managing Director & Chief Technology Officer, Bosch Limited,  
and President Bosch Group, India**

August 19, 2024

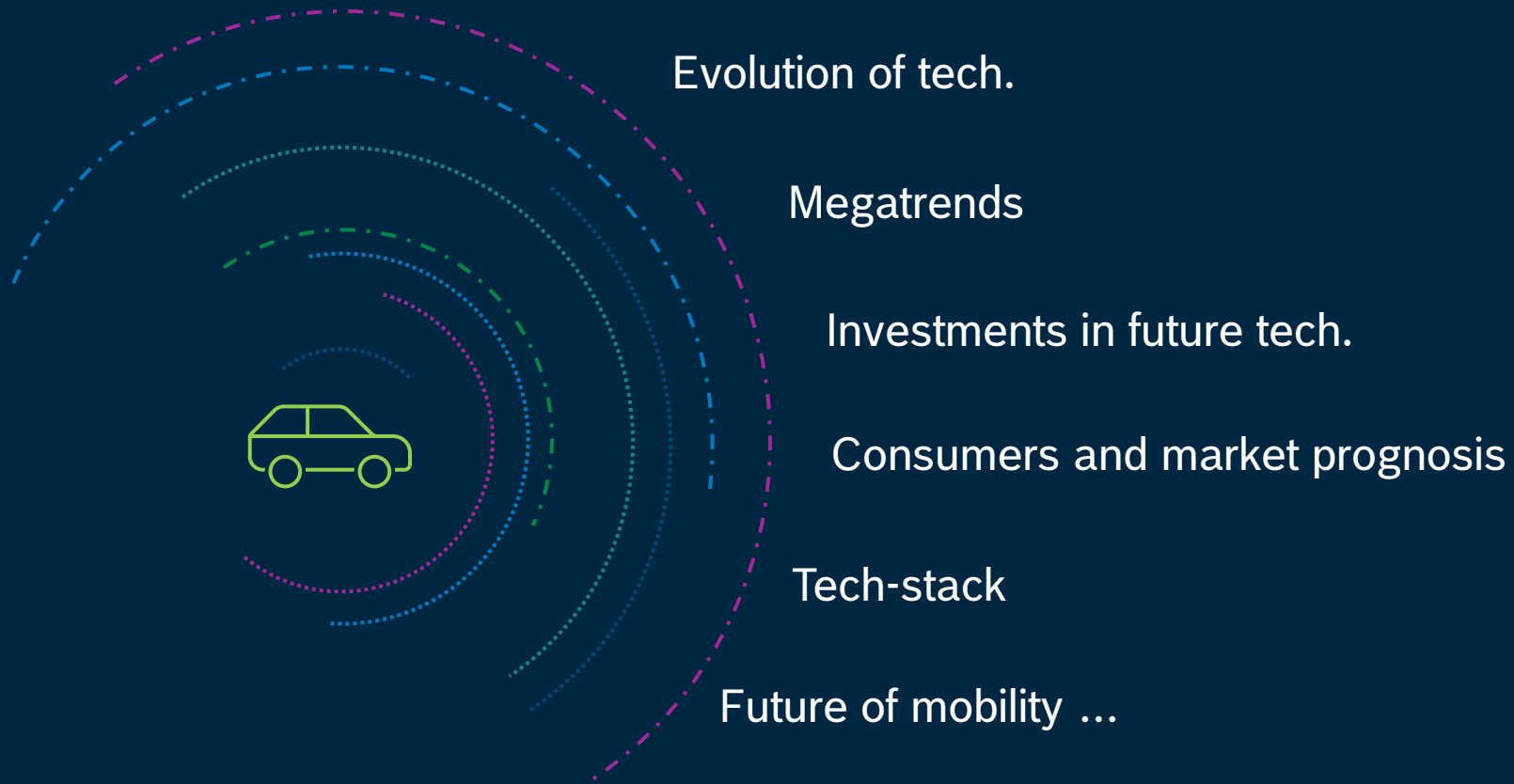


# Motilal Oswal 20<sup>th</sup> Annual Global Investor Conference, 2024 – Future of Mobility

## Safe Harbor Statement

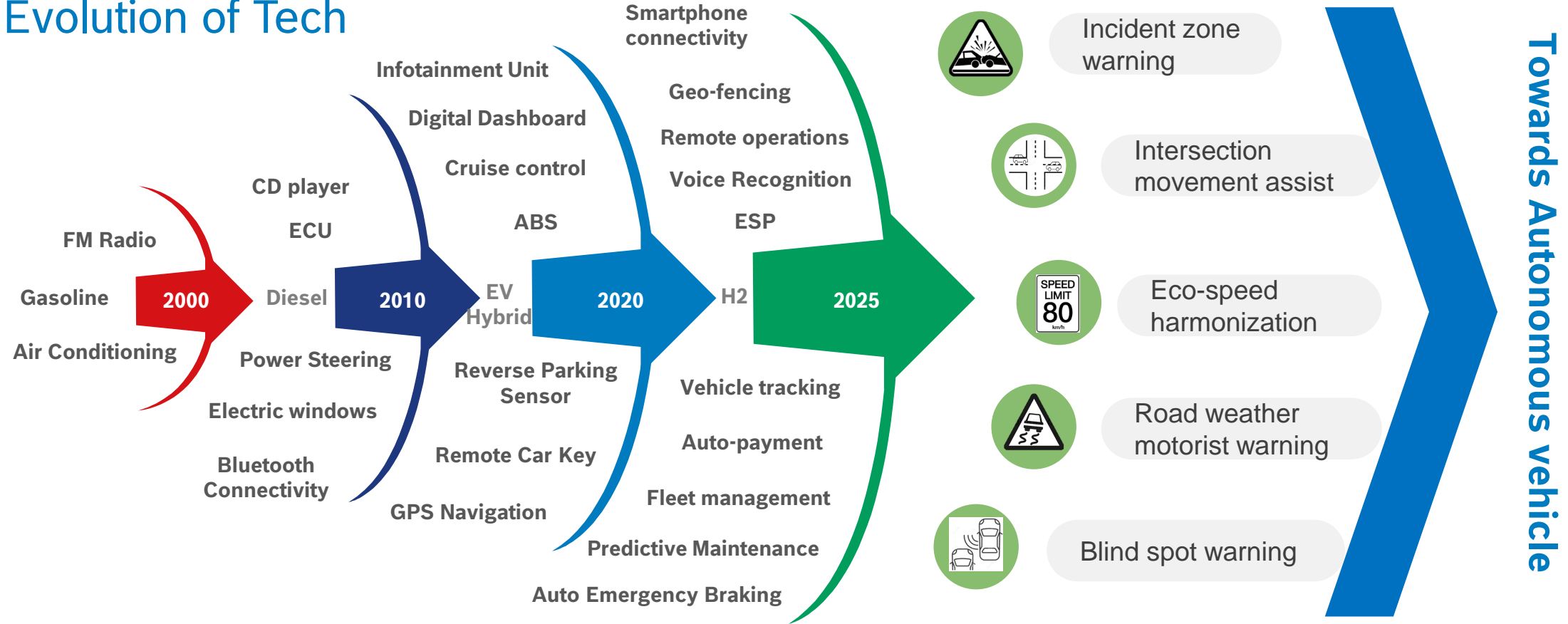
At the outset, we would like to reinforce our Safe Harbor statement. In today's interactions and presentation, there may be some predictive statements that reflect our current views about Bosch Limited's future performance, but these are subject to risks and uncertainties

# Future of Mobility



# Future of Mobility

## Evolution of Tech



**Moving towards cleaner and sustainable option**

ECU : Electronic Control Unit    ABS : Anti-Lock Braking System    ESP : Electronic Stability Program    EV : Electric Vehicle



# Future of Mobility

Megatrends: “Disruptions & boundary conditions that are shaping the Indian Economy”

## Renewables



~50% RE by 2030,  
Policy support

## Middle class



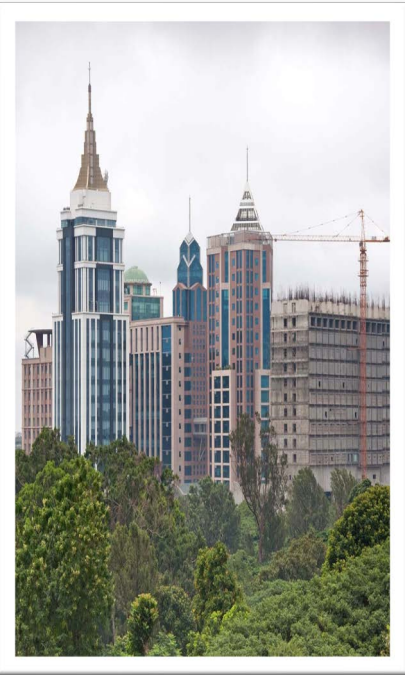
Doubling per capita  
income by 2030

## Demography



~50% GenZ &  
Millennial's by 2030

## Urbanization



2x rise in urban  
population by 2030

## Digitalization



Digital economy will  
contribute to 20% by  
2030

# Future of Mobility

On ground technology changes: Major Investments across India focusing on new age technologies of strategic importance for the future

**~USD 70 bn**

## Renewable Energy

• Reliance	9.0 Bn\$
• TATA Power	8.4 Bn\$
• Torrent Power	5.7 Bn\$
• ACME solar	4.3 Bn\$
• GSECL	2.4 Bn\$
• Jio bp	2.1 Bn\$
• JSW Energy	1.5 Bn\$

**~USD 58 bn**

## Green Hydrogen

• NTPC	8.4 Bn\$
• Tata Power	8.5 Bn\$
• Renew Fuel Energy	8.0 Bn\$
• Welspun	4.8 Bn\$
• JSW Energy	3.0 Bn\$
• Welspun	3.6 Bn\$
• Inox Air Products	1.8 Bn\$
• Leap Green Energy	1.5 Bn\$
• L&T Energy	1.2 Bn\$

**~USD 24 bn**

## Electrification

• Tata	5.1 Bn\$
• JSW & MG	4.8 Bn\$
• Hyundai	2.5 Bn\$
• Vin fast	2.0 Bn\$
• Gogoro	1.5 Bn\$
• Mahindra	1.4 Bn\$
• Suzuki	1.4 Bn\$
• Nexzu	1.0 Bn\$
• OLA	0.8 Bn\$
• Hyundai	0.7 Bn\$
• Stellantis	0.4 Bn\$

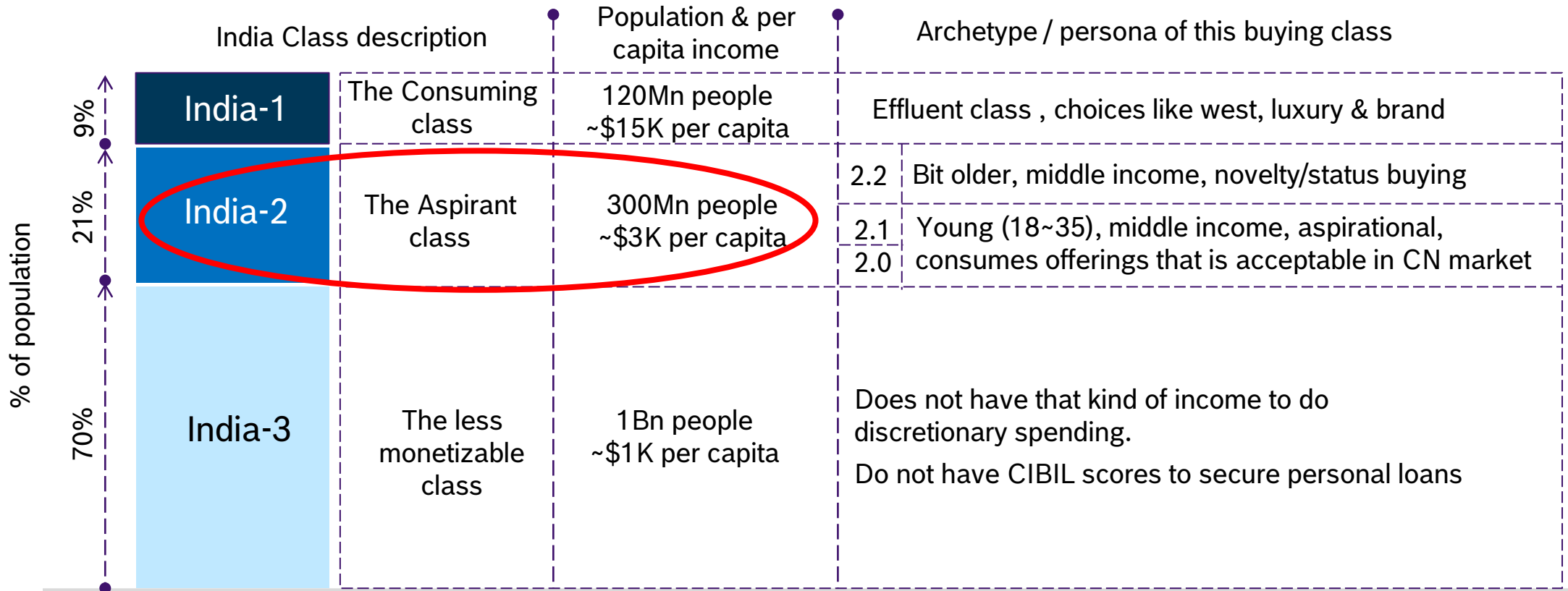
**~USD 23 bn**

## Semi-Conductor

• Tata Electronics	11 Bn\$
• Vedanta	5 Bn\$
• Tata & TSAT	3.3 Bn\$
• CG Power Solutions	0.92 Bn\$
• Micron	0.83 Bn\$
• Foxconn & HCL	0.04 Bn\$

# Future of Mobility

## India's Consumer Stack – Buying capabilities (current view)



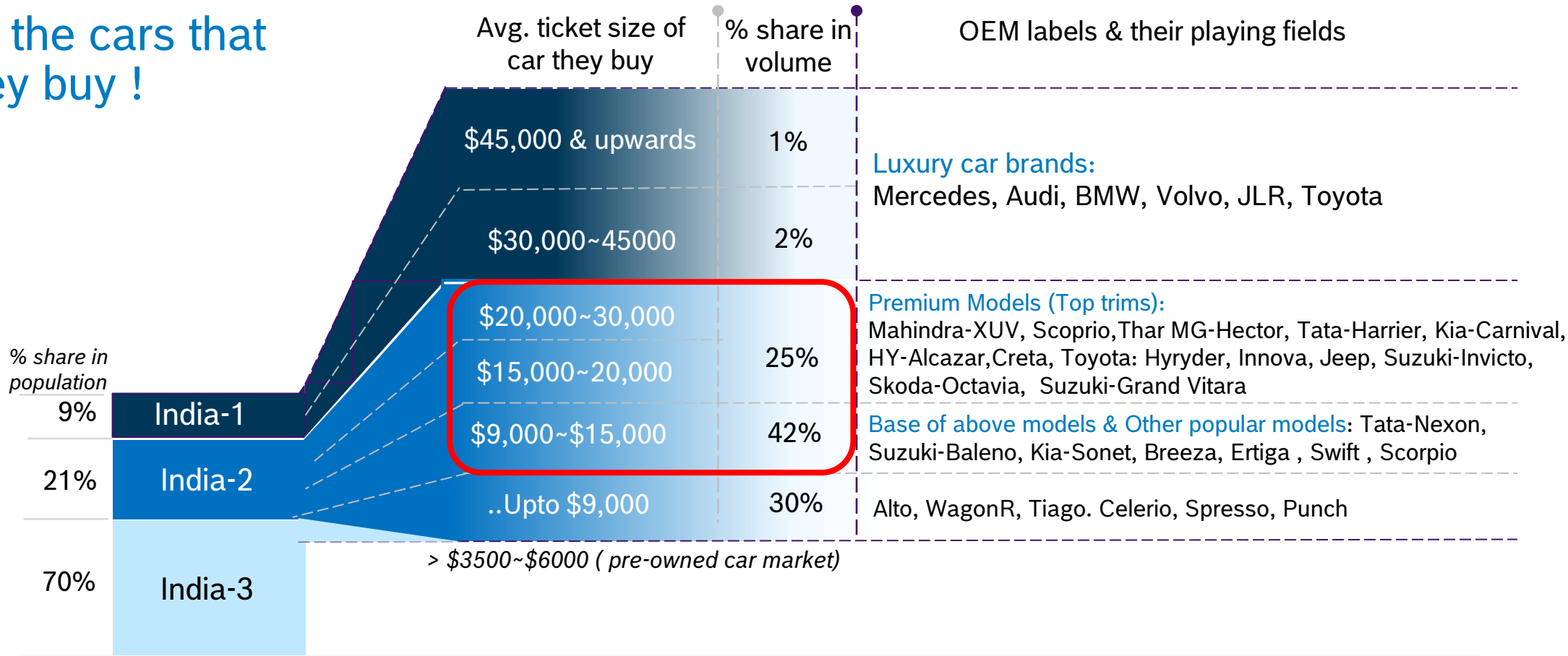
Concept of India Stack, Ref: Kishore Biyani's book, "It Happened in India"

**Aspirant class represents majority of the target consumer**



# Future of Mobility

..& the cars that they buy !

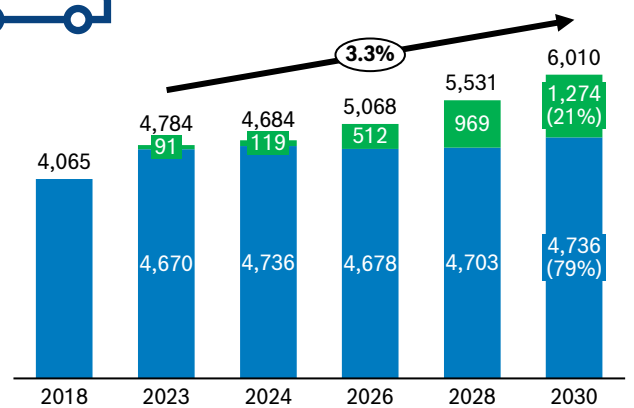


India 2 population is growing: Premiumization as a trend due to the consumer spread

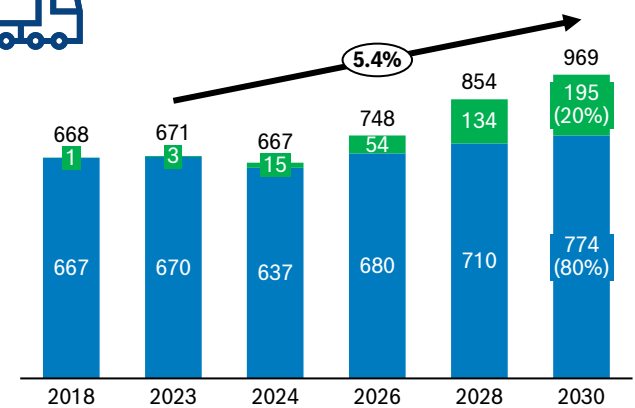
# Future of Mobility

Indian Automotive market prognosis | Overall market expected to grow annually at 3% - 4% in long term

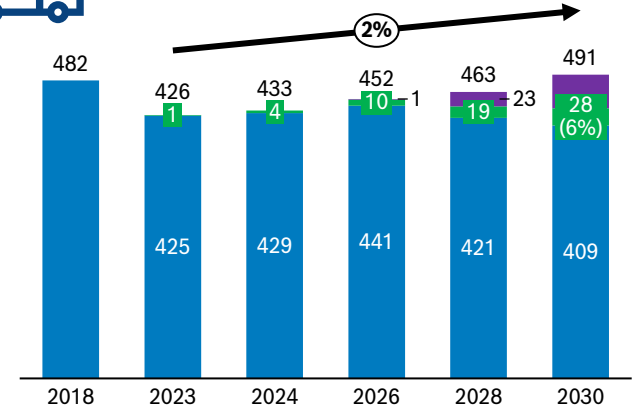
ICE Volumes in '000  
EV Volumes in '000  
H2 Volumes in '000  
Source: (A)MP24



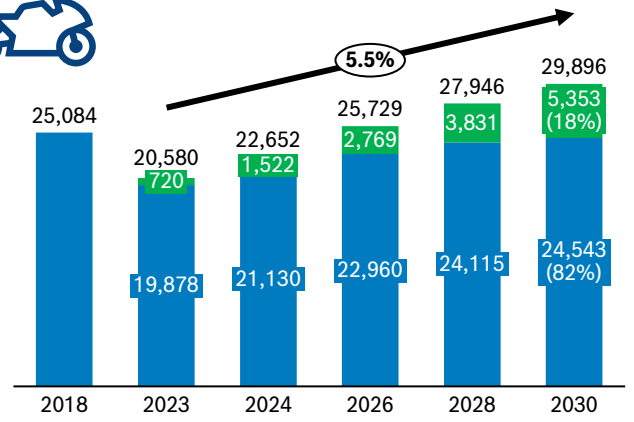
High % of BEV in 2030 driven by TCO & Infra development



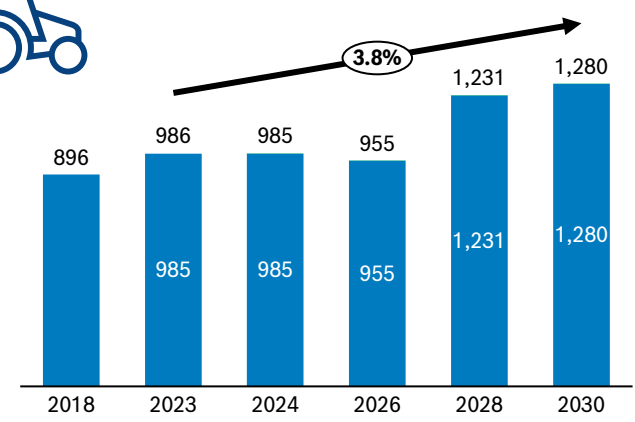
EV penetration mainly in < 2T LCVs | Last mile TCO benefit



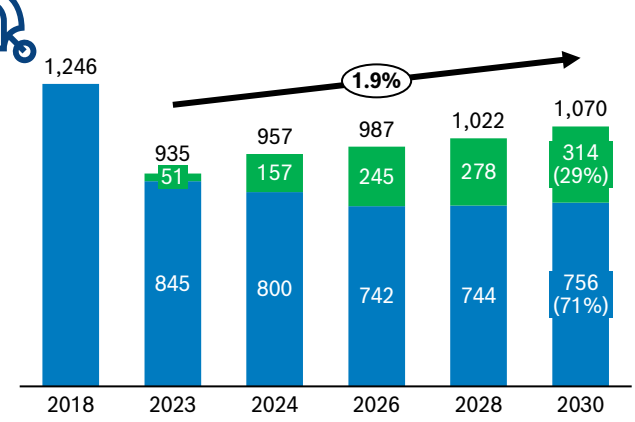
Long haul fleets will be part of the hydrogen ecosystem



EV Adoption driven by PMPs and reducing battery prices



Steady growth over long term | TREM V delay possible



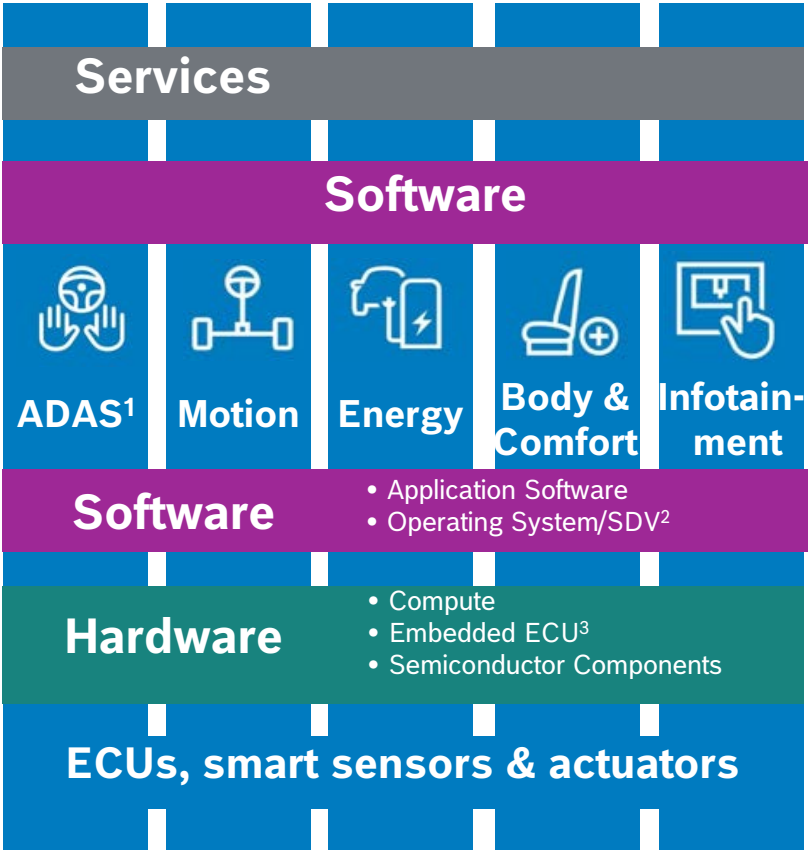
EV adoption led by TCO parity and new business models

# Future of Mobility

The market of future calls for new approaches to business – “Tech-stack”



- From many Individual solutions
- From hardware embedding software ...
- From Pure offerings in the vehicle ...



- ... to five holistic integrated core areas
- ... to separate hardware and software applications
- ... to a stronger focus on hardware and software inside and outside the vehicle

ADAS : Advanced Driver Assistance System SDV : Software Defined Vehicle ECU : Electronic Control Unit

# Future of Mobility

## Emerging mobility trends in India – “No more just a owner based segment”

### Changing Paradigm of urban mobility

### Mobility as a Service (MaaS)

### Electrification

### Technology

People Mobility

OVER CROWDING    TRAFFIC CONGESTIONS    HIGHER VEHICLE COST

RISE IN AIR POLLUTION    PARKING ISSUES    INCREASED TRANSIT TIME

Urbanization in India    **2030**  
40%

#### Shared Mobility

Share use of vehicle on need basis

#### Ride Hailing<sup>(1)</sup>

OLA    Uber

rapido    BLU SMART MOBILITY

mytaxiindia

#### Ride Sharing<sup>(2)</sup>

BLU SMART MOBILITY

OLASHARE    UberPool

#### Subscription

Ownership of vehicle through rentals or subscriptions

#### Self Drive<sup>(3)</sup>

Zoomcar Never Stop Living    WOW CARZ

revv    quiklyz

#### OEM Subscription<sup>(4)</sup>

MARUTI SUZUKI SUBSCRIBE    MG SUBSCRIBE

TOYOTA

OLA    OKINAWA    REVOLT    TVS

ATHER    BAJAJ

Mahindra electric

ERISHA    LOHIA ATUL

TATA    MG

KIA    HYUNDAI

ASHOK LEYLAND    JBM    TATA

SWITCH    EICHER

ADAS

V2X

E/E Arch

Infotainment

SaaS

Goods Mobility

### Change drivers

Energy Independence

Fleet Optimization

Asset utilization

Competitive Logistic cost

### Logistic and Transportation Services

#### Logistics Aggregators

DELHIVERY    PORTER    truckola

BLACKBUCK    HIET Freight with no hassle    RIVIGO

### Alternate Fuel

#### Electric

Last mile delivery

TATA    ERISHA

ASHOK LEYLAND

#### H2-ICE

TATA

ASHOK LEYLAND

\* 1. Rider hires a vehicle and a driver for personal use | 2. Rider shares the vehicle with other riders travelling | 3. Rider hires a vehicle for personal use for 'self-driving' | 4. Subscription offered by OEMs in partnership with firms

# Future of Mobility

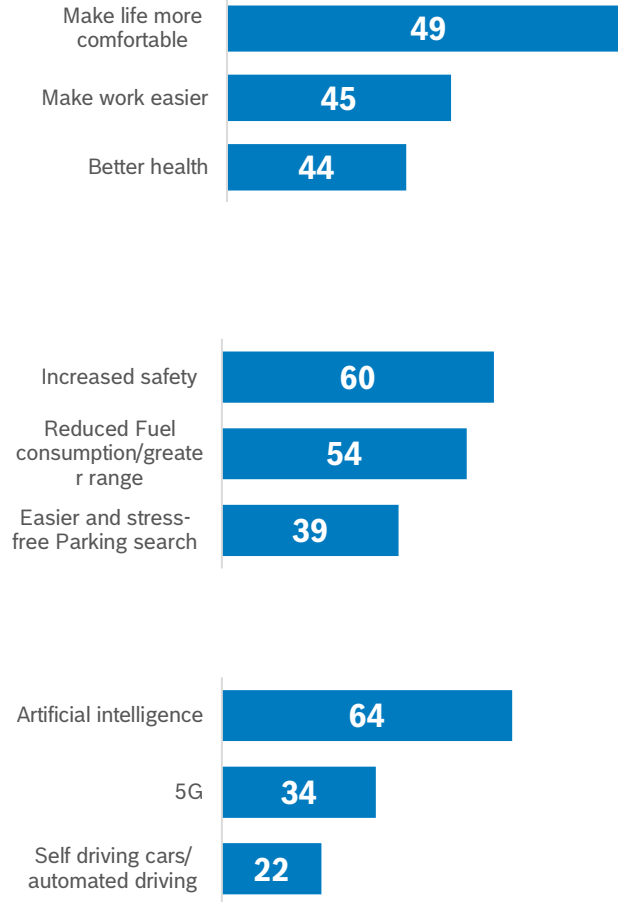
(BOSCH Tech Compass 2023-24)

## BENEFITS OF AI

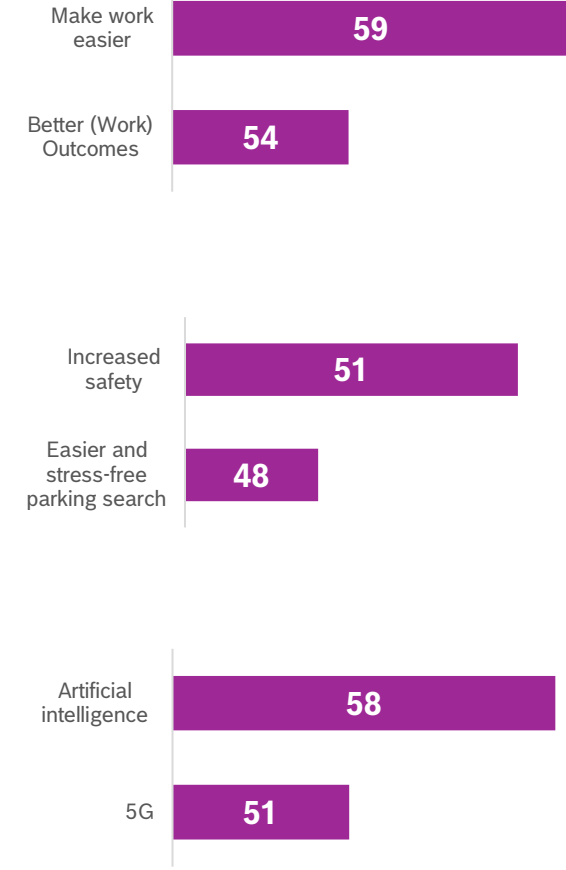
## MOBILITY BENEFITS OF AI

## TECH OF THE FUTURE

### GLOBAL INDEX



### REGIONAL



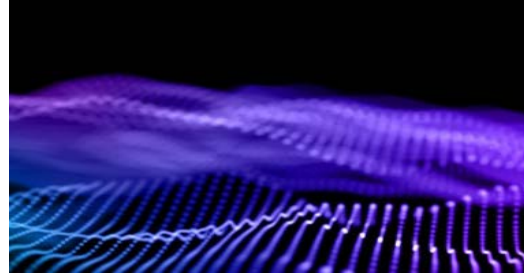
**India is ranked higher towards adoption of new trends on the technology (AI) front**

# Future of Mobility Summary



Who will define the future?

- **Regulators**
- **Consumers**
- **Stakeholders**



What drives the next gen. tech?

- **E & E Architecture**
- **Compute**



Key factors

- **Simple and solid foundation tech**
- **Cheaper compute**
- **Gen AI**

# Future of Mobility



Thank you!

**Guruprasad Mudlapur**

Managing Director and Chief Technology Officer, Bosch Limited  
and President Bosch Group, India

August 19, 2024

