

**Our vision is your freedom.**  
In our creation, your tomorrow will be safer, greener and easier.

# Mando Corporation

June 2021



# Highlight

In \*C.A.S.E. megatrend, product characteristics and required capabilities for **Mando Chassis business, closely related to Electrification led by EV market expansion**, and **ADAS business, closely related to Autonomous driving**, are rapidly changing  
 In particular, establishing a **foundation for technological and business growth is essential to secure a competitive position in Lv.3~ autonomous driving**

Mando aims to promote more expertized and optimized business operation by **separating Chassis and ADAS businesses**, where two businesses require **differing business capabilities, including strategy, investment priorities, HR, organization and partnerships**

Proposed Reorganization Structure	Key Success Factors	Mando's Growth Strategy	Sales CAGR ('21-'25)			
<p>Shareholders</p> <p>↓</p> <p><b>EV Solutions [Mando, Existing Co.]</b></p> <table border="1"> <tr> <td>Chassis Electrification</td> <td>SW Enhancement</td> <td>xEV New Biz</td> </tr> </table> <p>100% ↓ Split-off</p>	Chassis Electrification	SW Enhancement	xEV New Biz	<ul style="list-style-type: none"> <li>• Innovative xEV product development</li> <li>• Mechanical/electronics/SW talents</li> <li>• Economies of scale &amp; operational efficiency</li> </ul>	<ol style="list-style-type: none"> <li>1) Electrification of chassis products</li> <li>2) Advanced SW capability</li> <li>3) xEV product expansion</li> </ol>	<p>~9%</p>
Chassis Electrification	SW Enhancement	xEV New Biz				
<p><b>Autonomous Driving [*MMS, New Co.]</b></p> <table border="1"> <tr> <td>Autonomous Driving</td> <td>Mobility</td> </tr> </table> <p>*MMS : Mando Mobility Solutions</p>	Autonomous Driving	Mobility	<ul style="list-style-type: none"> <li>• Technological &amp; business foundations for future market</li> <li>• Large investment for technology &amp; talents</li> <li>• Electronics/SW/network/AI talents</li> </ul>	<ol style="list-style-type: none"> <li>1) Advanced autonomous driving products</li> <li>2) Regional &amp; customer diversification</li> <li>3) New business expansion (mobility)</li> </ol>	<p>~14%</p>	
Autonomous Driving	Mobility					

## Implication on Split-off Structure

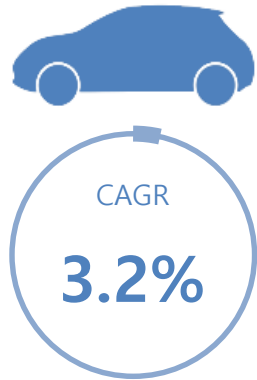
- Existing Co. 'Mando' maintains competitive advantage as an **active safety solution provider** by securing control over New Co.; New Co. seeks accelerated growth of ADAS business through timely funding and pursuing synergy through MHE<sup>2)</sup> assets
- **New Co. becomes a wholly-owned subsidiary** of Mando, remaining **"neutral" to consolidated financial statements**

Note: 1) Connectivity, Autonomous, Sharing, Electrification; 2) Mando Hella Electronics, a wholly-owned subsidiary of Mando Mobility Solutions (New Co.)

# Automotive Industry Megatrends

C.A.S.E megatrend is quickly disrupting the automotive industry, with 'Electrification' and 'Autonomous' especially **closely related to Mando's business areas**, while ESG<sup>1)</sup> and eco-friendly Clean Tech will accelerate 'Electrification' and 'Autonomous' trends

## Sluggish Growth of Global New Vehicle Sales



Global New Light Vehicle Sales (2021-25)

- **Reduced consumer confidence** and **economy slowdown** due to COVID19
- Advanced markets reaching '**peak car**' level
- **Declining growth rate** in the emerging markets

Source: IHS (2020), Yole Development (2020)  
Note: 1) ESG : Environmental, Social, Governance

## Change in Growth Drivers Led by Megatrends of the Auto Industry

**Connectivity**

**Autonomous**

**Shared**

**Electrification**



L1~L2+ Vehicles among Global New Light Vehicle Sales (2021-25, number of vehicles)

- Intensified competition among OEMs, Tier-1s and IT companies to secure leadership in **autonomous vehicle solution**



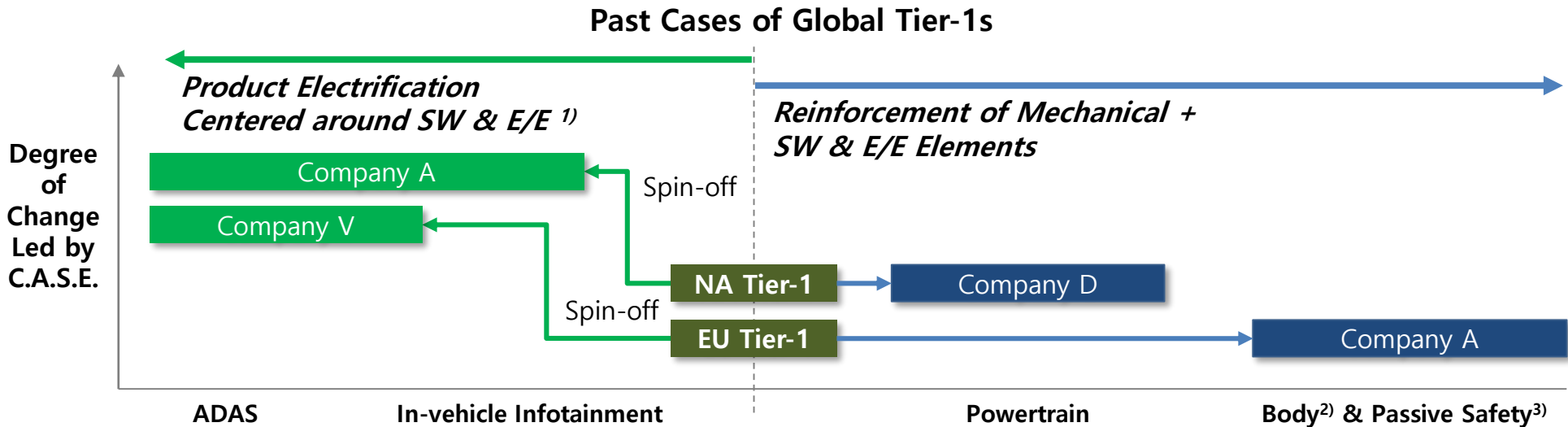
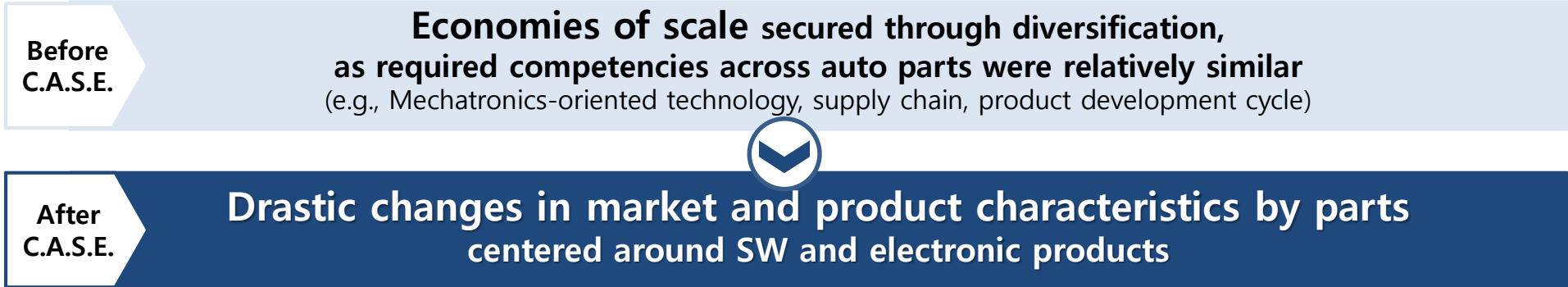
BEV Sales among Global New Light Vehicle Sales (2021-25, number of vehicles)

- Launch of various services with the shift in paradigm from '**owning**' to '**using**' vehicles
- A continuous **increase in EV m/s** expected with government support & initiatives

**Autonomous and Electrification closely related to 'Eco-friendly Clean Tech'**

# C.A.S.E. Driving Change in Auto Parts Industry

Tier-1 suppliers, which traditionally sought business diversification for economies of scale, **have begun to reorganize businesses by specialty areas** as the product characteristics and technological demands for auto parts have changed rapidly with the emergence of C.A.S.E.



Note: 1) Electric & Electronics; 2) Thermal mgmt., lighting, door, seating; 3) Airbag, seat belt, etc.

# Leading the Next Chapter of Autonomous Driving

Successful, timely execution of the strategy and implementation of key drivers, including **time-to-market, tech leadership, global footprint expansion** to unlock growth potential of the ADAS business with the start of Lv. 3 automation

## Mando's Roadmap

		Lv. 2	Lv. 2+	Lv. 3 ~ 5	
Radar	Front	Mid range	Long range	High performance long range	High resolution 4D Imaging
	Corner	2	4	Advanced, long-distance detection	High resolution
	Other				Ultra short range (surround)
Camera	Front	Multi-function	High resolution, long range		
	Surround		High resolution satellite camera		
In-cabin	Occupant detection incl. CPD, DMS for next NCAP				
Compute Platform	Driving	MCU	MCU+AP (Mid TOPS)		MCU+AP (High TOPS)
	Parking	MCU+AP (Low TOPS)	MCU+AP (Mid TOPS)		
Lidar				Solid state lidar	
Addressable <sup>1)</sup> CPV \$		Lv. 2 \$600-700	Lv. 2+ \$1,300-1,500	Lv. 3 \$3,000~	\$4,000~

  Under production 
   Under commercial development 
   Advanced development

## Positioning / Strategy

**Volume play** with various hardware design backed by **scalable platform**

Solidify Lv. 3 ↑ autonomous driving leadership through **advanced, centralized compute solutions**

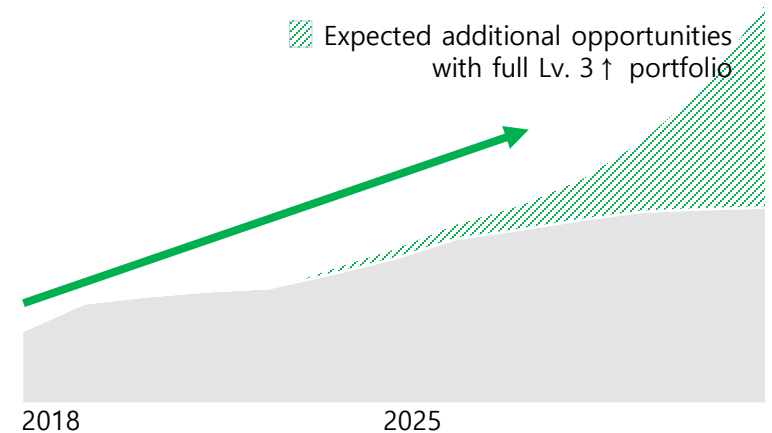
Secure **advanced sensor** for highly automated driving

## Key Success Drivers

- **Time-to-market**
- **Tech leadership**
- **Global mfg. footprint**
- **Local support** (Sales, Engineering)
- **Active partnerships**

CPD : Child Presence Detection  
 DMS : Driver Monitoring System  
 AP : Application Processor  
 TOPS : Trillion Operations Per Second

**New opportunities with advanced tech development**



Note: 1) Contents per Vehicle in USD, Mando internal forecast

# Necessity of Business Reorganization for Mando

In accordance with the change in market trends, Mando aims to achieve field expertise and business optimization by **establishing two "single-purpose companies"** that has differing business nature

**Chassis** Brake, Steering, Suspension

**ADAS**

Focus on **operational efficiency and economies of scale** to gain competitive advantage in the scale-driven market



Achieve **future market dominance** through long-term tech investments

Streamline existing investments, **invest in innovative xEV products**



Financial resources are shared as-is; **require large investments** in technology and key talents in preparation for future

Able to utilize Mando's existing manpower in **mechanical-electronics-SW** field



Competition for talents with IT companies, need talents for **electronics-SW-network-AI**

**Systemized organization** that leads industry standards and innovation



**Lean & agile organization** enabling timely response to highly versatile market

**Strategic partnership** for product advancement and value chain optimization



**Extensive cooperation required** with different sectors, startups, etc.

Establish a growth structure for field expertise and optimization through business split-off

# Proposal on Business Reorganization

IBD : Integrated Dynamic Brake  
 EMB : Electro-Mechanical Brake  
 SbW : Steer by Wire  
 SDC : Smart Damping Control

ePT : e-Power Train  
 DCU : Domain Control Unit  
 PCU : Parking Control Unit

Existing Chassis business focuses on targeting the xEV market, and the New Co. focuses on autonomous driving & mobility markets

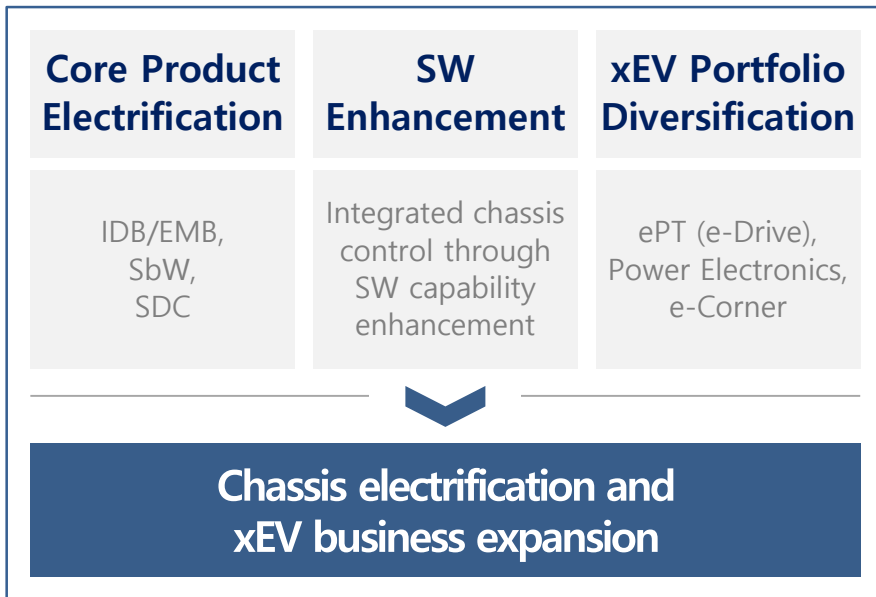
Enhance corporate value by expanding EV solutions by leveraging existing chassis capabilities



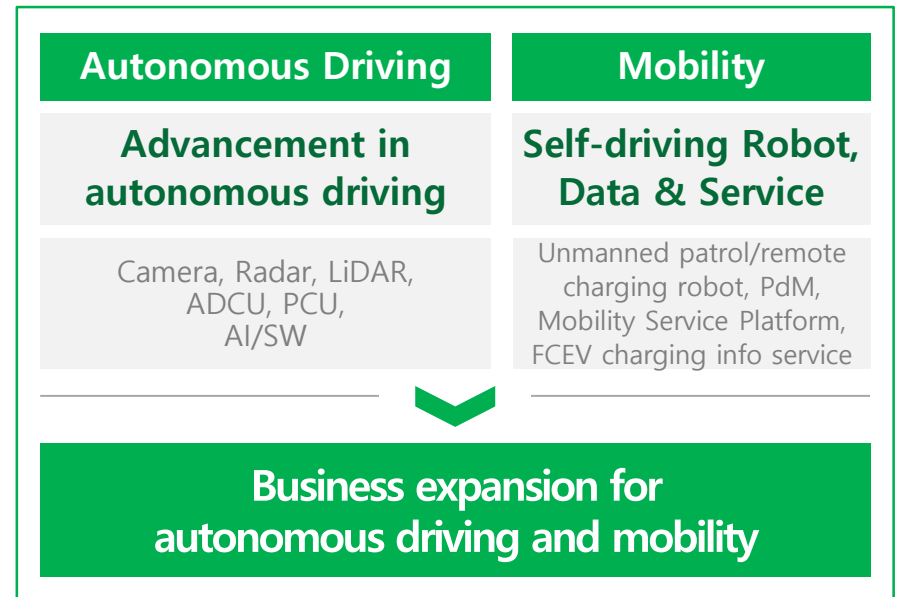
Mobility Freedom Creator

Dominate fast growing industries by concentrating resources on future "winning" businesses

## [Existing Co.] EV Solutions



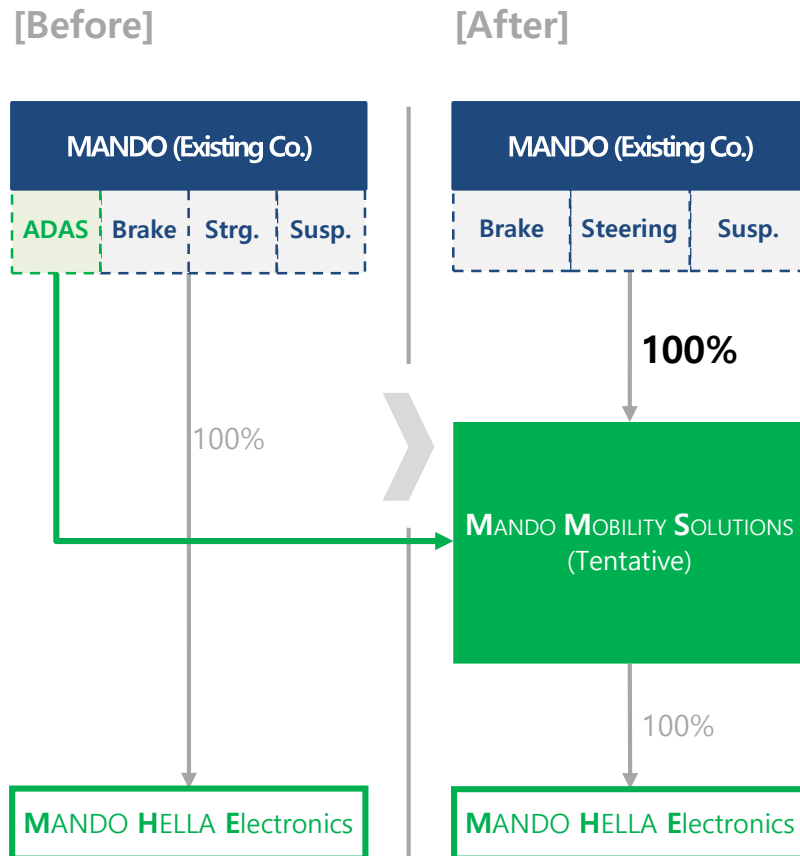
## [New Co.] Autonomous Driving



# Business Reorganization Method > Split-off

Enhance shareholder value by having Existing Co. own 100% stake in the New Co., thereby maintaining its position as an active safety solutions provider, and New Co. intends to accelerate growth by securing timely funding and enlarge synergy with MHE

## Split-off



## Why Split-off?

**Maintain active safety solution provider status by securing control over the New Co.**

+ Maintain sales/cost synergy through split-off



**Accelerate growth of autonomous driving business through managing optimized timing for funding**

Promote split-off (100% subsidiary) to secure flexibility for future funding



**Synergy through value chain integration between New Co. and MHE**

Allows internalization of full value chain through integration of Mando ADAS (R&D, Sales) and MHE (R&D, manufacturing)



**"Neutral" on consolidated financial statements**

Sales and profit of New Co., a wholly-owned subsidiary of Existing Co., consolidated in Existing Co.'s financial statements



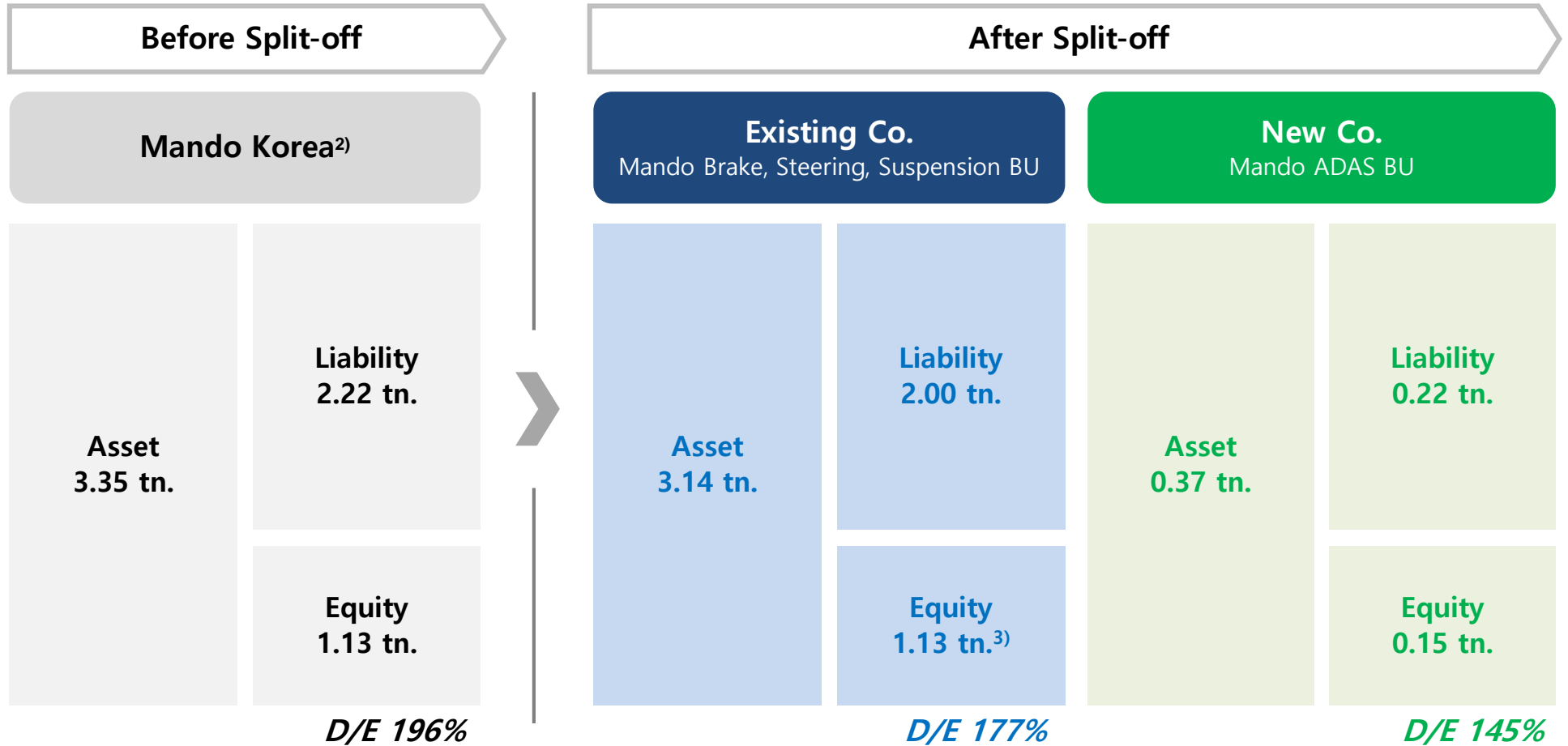
**Enhance Shareholder Value**



# Financials Before and After the Split-off

## Mando Korea Statement of Financial Position (As of 31 March 2021<sup>1)</sup>)

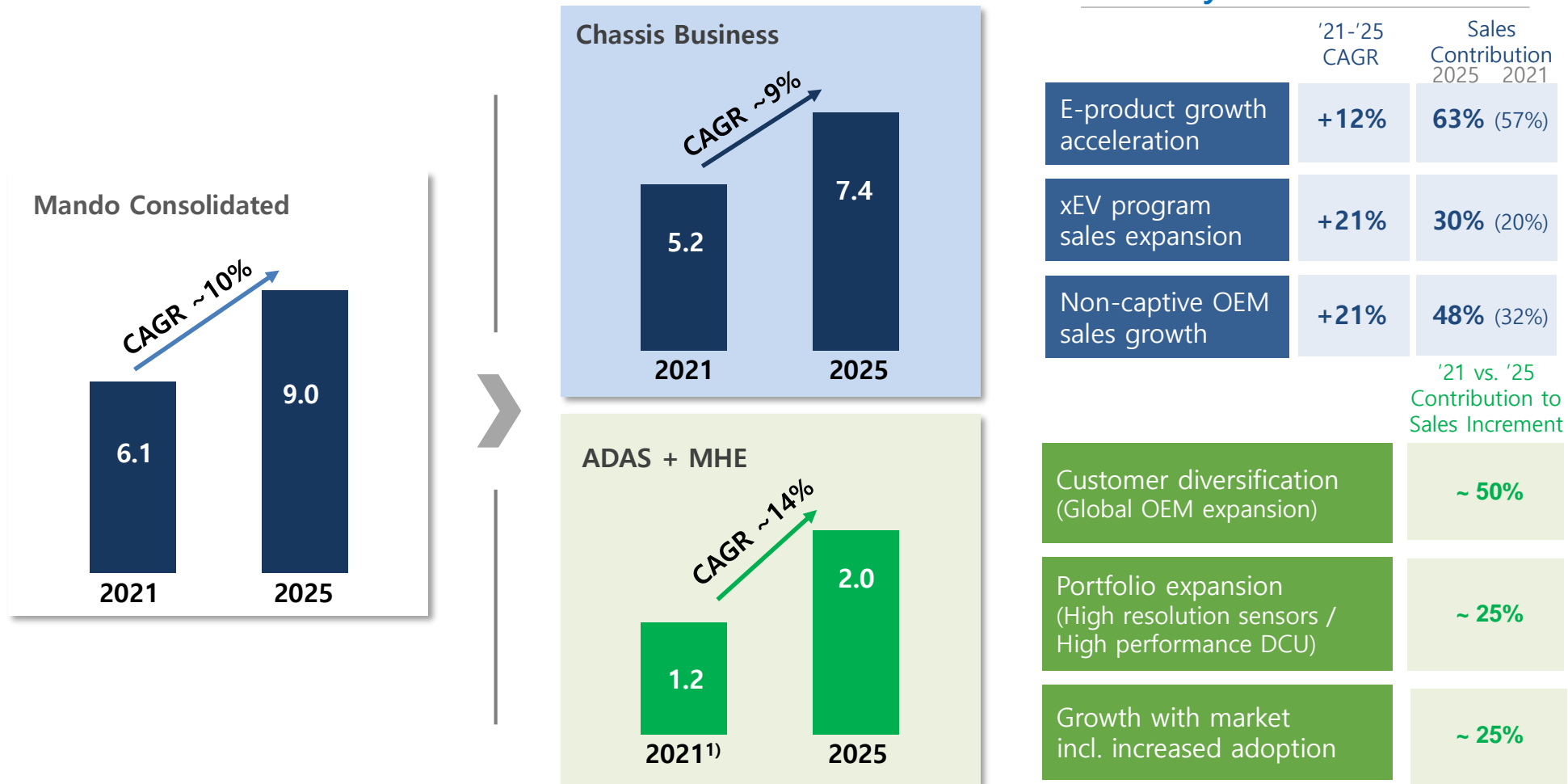
(Unit: KRW tn.)



Note: 1) Statement of financial position to be finalized on the date of the split-off; 2) Balance Sheet of Mando Korea; On a consolidated basis, Asset 5.4 tn., Liab. 3.6 tn., Equity 1.8 tn.; 3) As a 100% subsidiary of Mando, New Co.'s capital (0.15 tn.) is incorporated in Existing Co.'s capital

# Mando Mid-term Sales Plan

## Consolidated Sales with Intercompany Transaction Elimination (unit : KRW tn.)

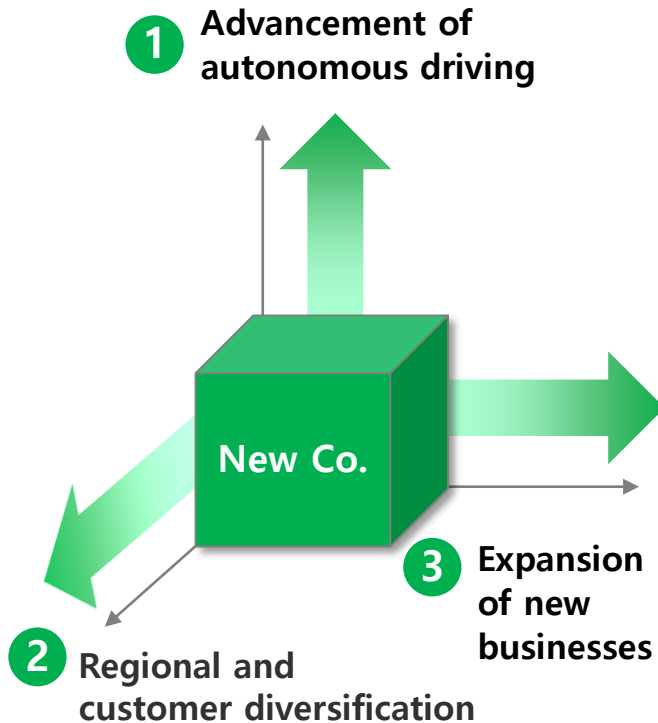


Note: 1) ADAS Jan.~Dec. 2021 sales *plus* MHE Mar.~Dec. 2021 sales (MHE acquired by Mando on March 2 2021)

# New Co. Growth Strategy

New Co. will become a **specialist in the field of autonomous driving and mobility** through 1) **advancement of autonomous driving**, 2) **regional and customer diversification**, and 3) **expansion of new businesses**

## Direction for Growth



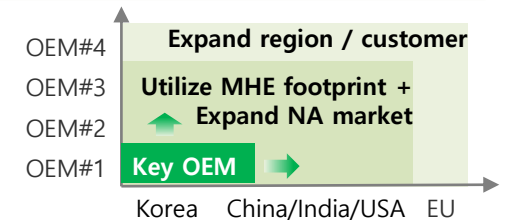
### 1 Advancement of autonomous driving CPV<sup>1)</sup> ↑, Tech Advancement

- **Volume growth and product line-up expansion** with higher levels of automation
  - Secure core technologies for high resolution sensors and high performance DCU while diversifying product offering

	L1/L2	L3 and above
CPV	5~10	20+
Products	Radar, Camera, DCU	Imaging Radar, Hi-res Camera, LiDAR, ADCU

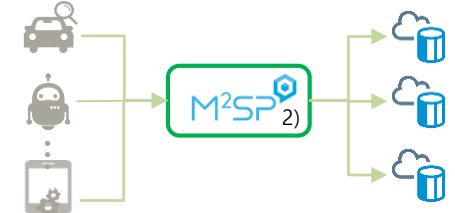
### 2 Regional and customer diversification Global Expansion

- Extensive **overseas market expansion**
  - Utilize MHE global footprints (China/India) and secure NA footprint



### 3 Expansion of new businesses Self-driving Robot, Data & Service

- Expansion of **new business in mobility**
  - Identify new mobility business opportunities based on data, cloud and H/W platform (unmanned patrol/remote charging robot, PdM, FCEV charging info. service etc.)



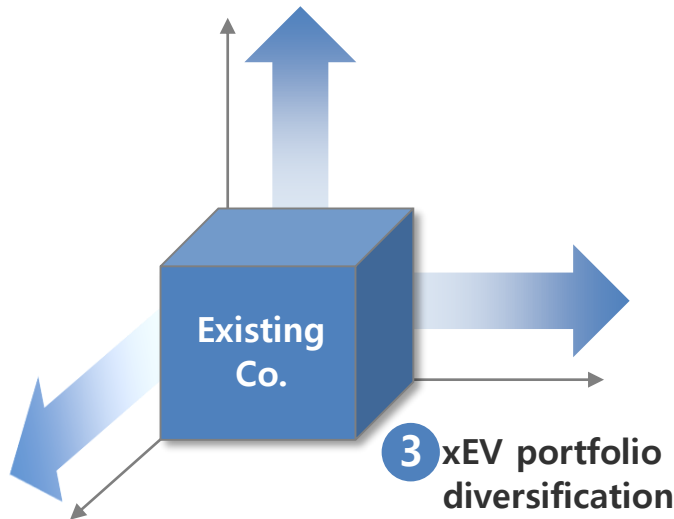
Note: 1) Contents per Vehicle; 2) Mando Mobility Service Platform

# Existing Co. Growth Strategy

Existing Co. will promote growth through **1) electrification of key chassis products, 2) increase in product competitiveness through SW enhancement, 3) xEV portfolio diversification**

## Direction for Growth

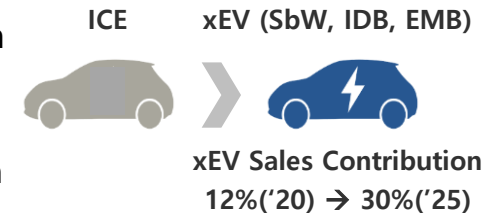
### 1 [HW] Electrification of key chassis products



### 1 Electrification of key chassis

- Improve company-wide profitability through **increased E/E product contribution**
  - New products, including SbW, IDB, EMB
  - Build barriers to entry using eco-friendly tech

#### Electrification



### 2 SW enhancement

- Establish entry barrier through SW level-up
  - Develop integrated chassis control / SaaP
  - Utilize reference and knowhow of responding to OTA update needs of Leading NA EV

#### SW Campus<sup>1)</sup>

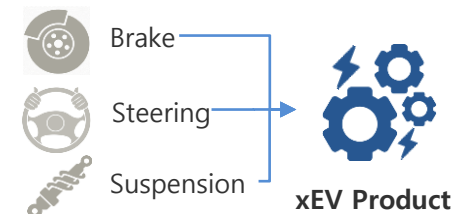
#### OTA



### 3 xEV portfolio diversification

- Proactive response to **future auto trends**
  - Development of next-generation integrated chassis module (e-Corner)
  - Expansion into chassis-related products in xEV: Power Electronics including e-Drive, FDC

#### Power Electronics, e-Corner



Note: 1) Established on April 1 2021

# Key Milestones



# Disclaimer

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