

Nissan CVT briefing

(Continuously Variable Transmission)

Aug. 22, 2006
Nissan Motor Co., Ltd.

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Agenda

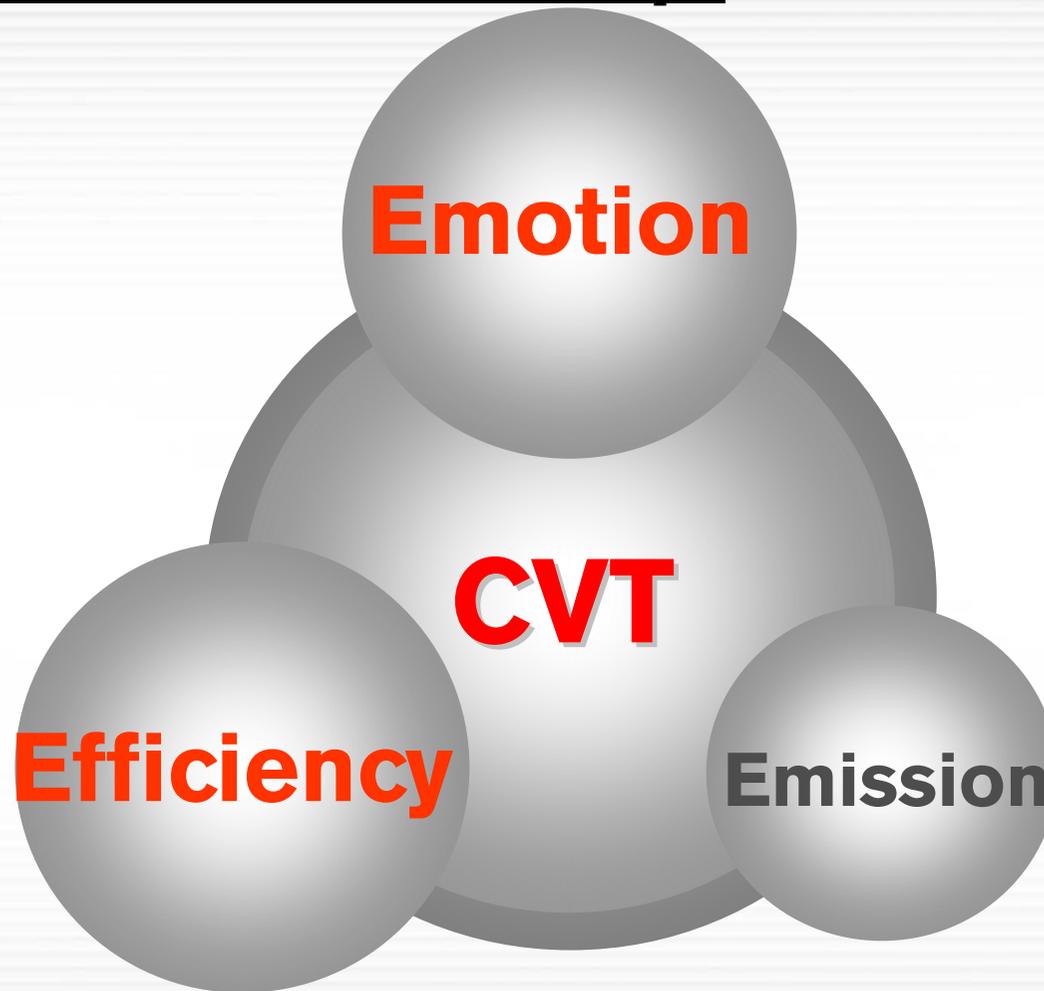
- 1. The Powertrain concept**
- 2. The History of Nissan CVT and Plans for Future Applications**
- 3. CVT Expansion in North America**
- 4. What is CVT?**
- 5. XTRONIC CVT**
- 6. CVT for 3.5L Engines**
- 7. Summary**

1. The Powertrain concept

1-1. The Powertrain concept



1-2. The Powertrain concept

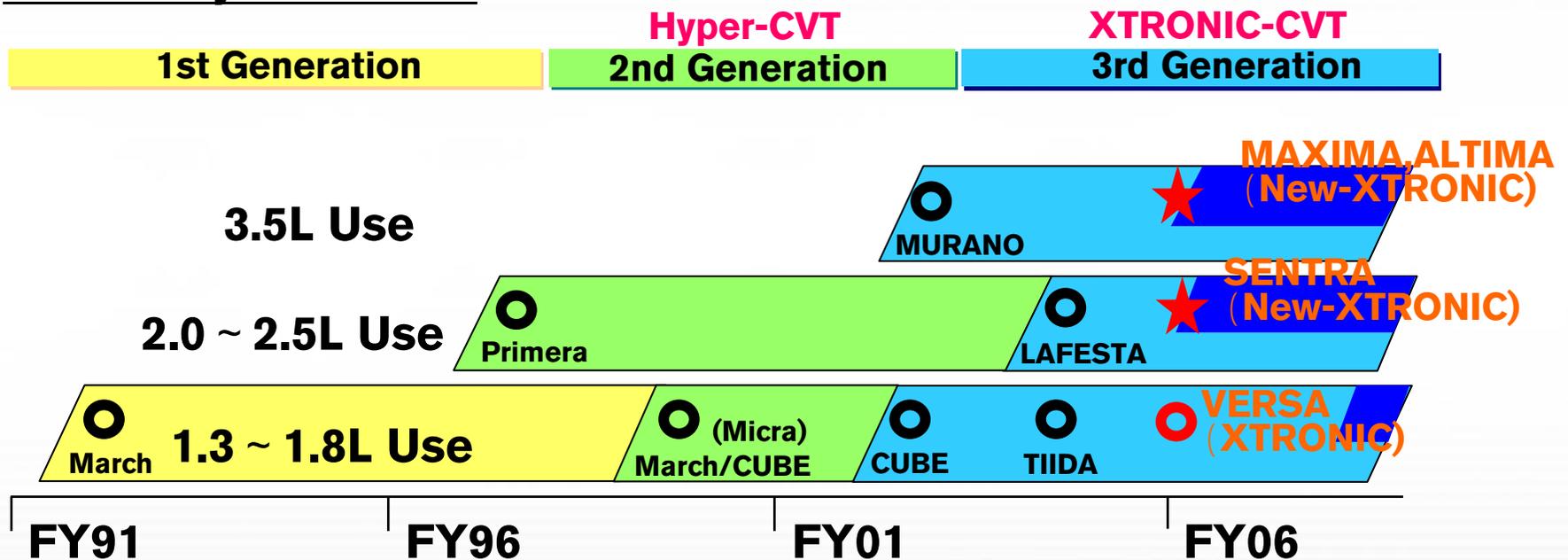




2. The History of Nissan CVT and Plans for Future Applications

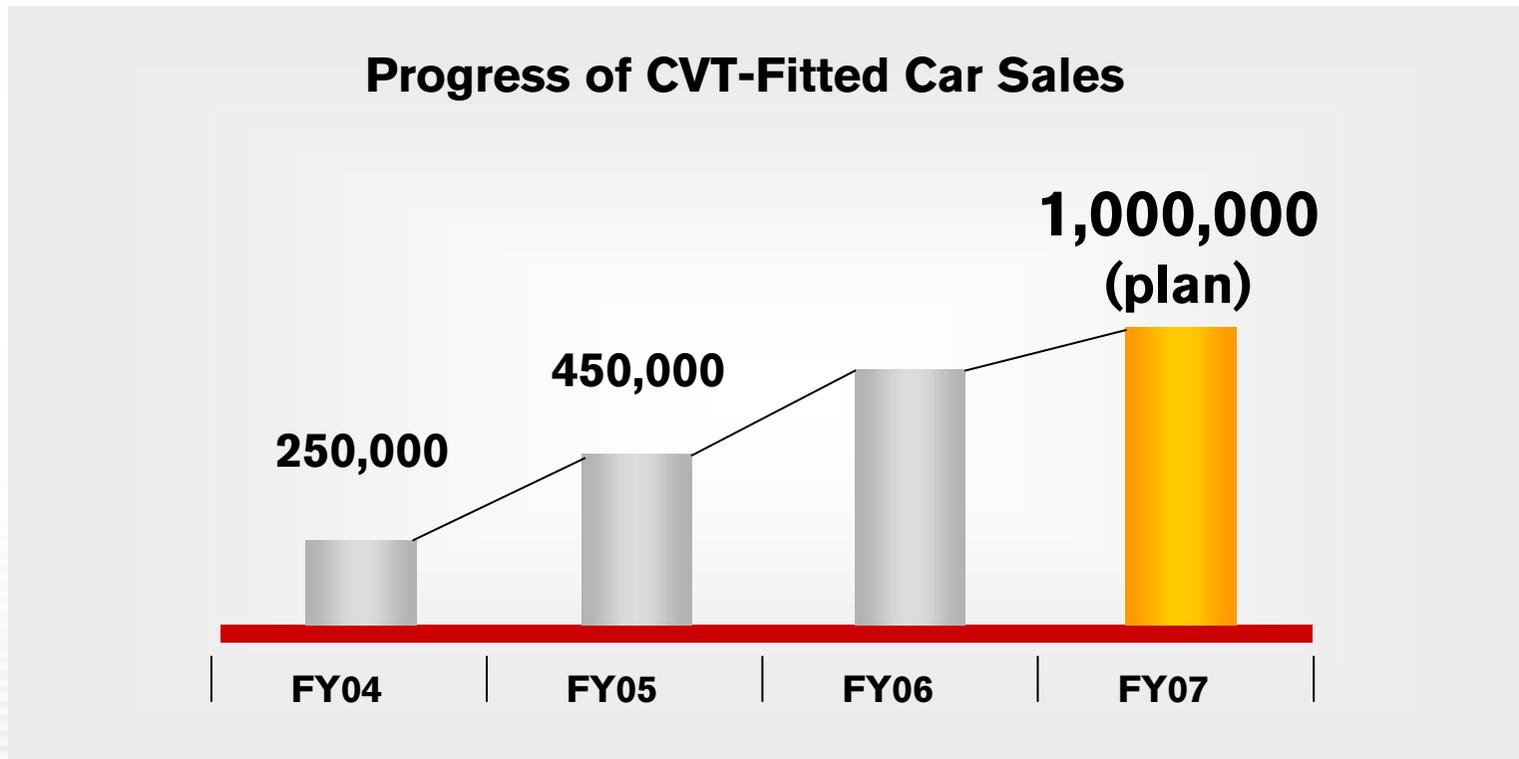
2-1. Changes in CVT

The History of Belt CVT



2-2. Progress of Nissan CVT Global Sales

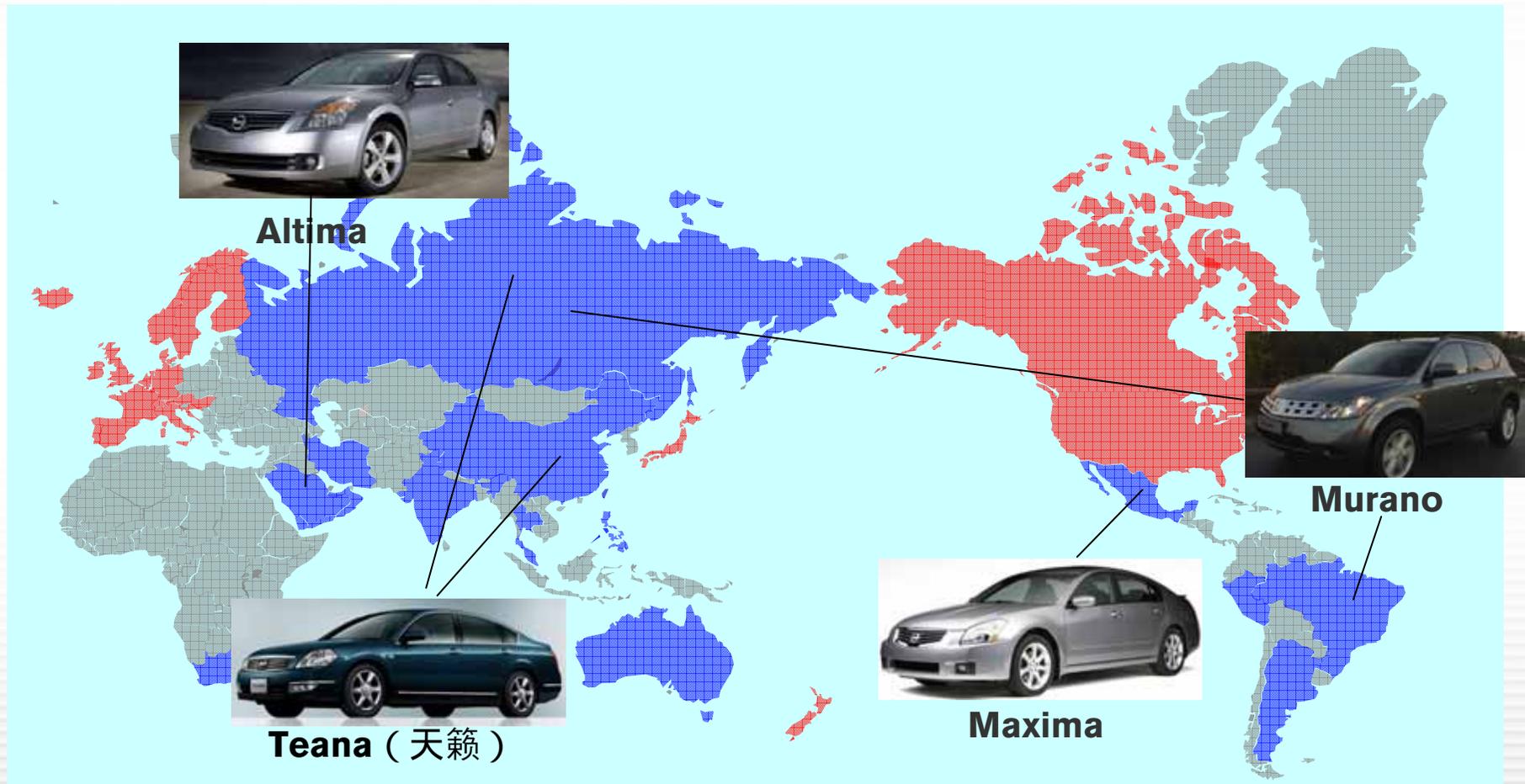
By FY07, global sales expected to have quadrupled to about 1 million units compared with FY04.



2-3. Global Expansion

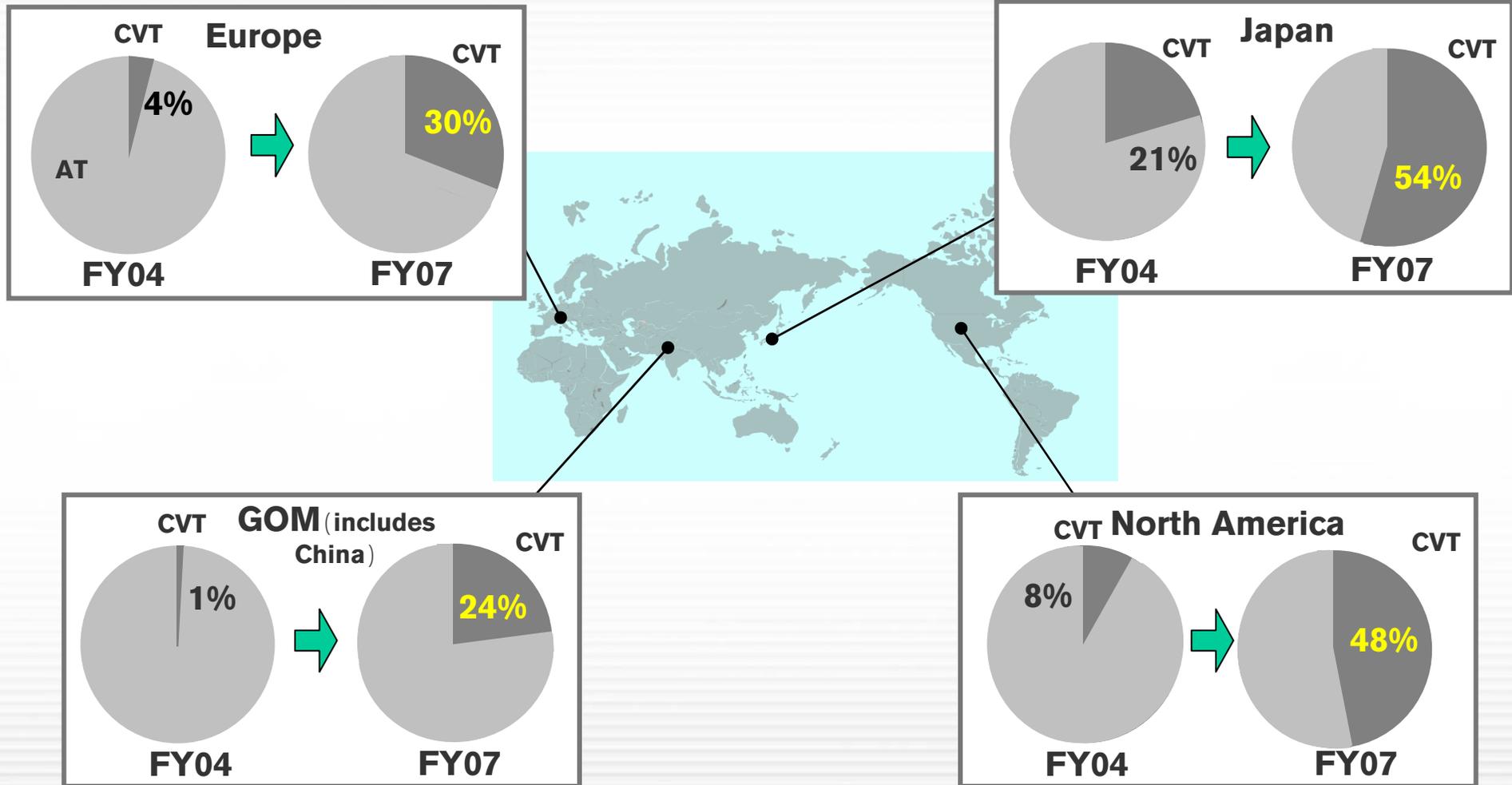
Release of cars fitted with CVT to more than 100 countries in the future

■ Adopted in FY04 ■ Adoption planned for FY07



2-4. Adoption of Global Expansion

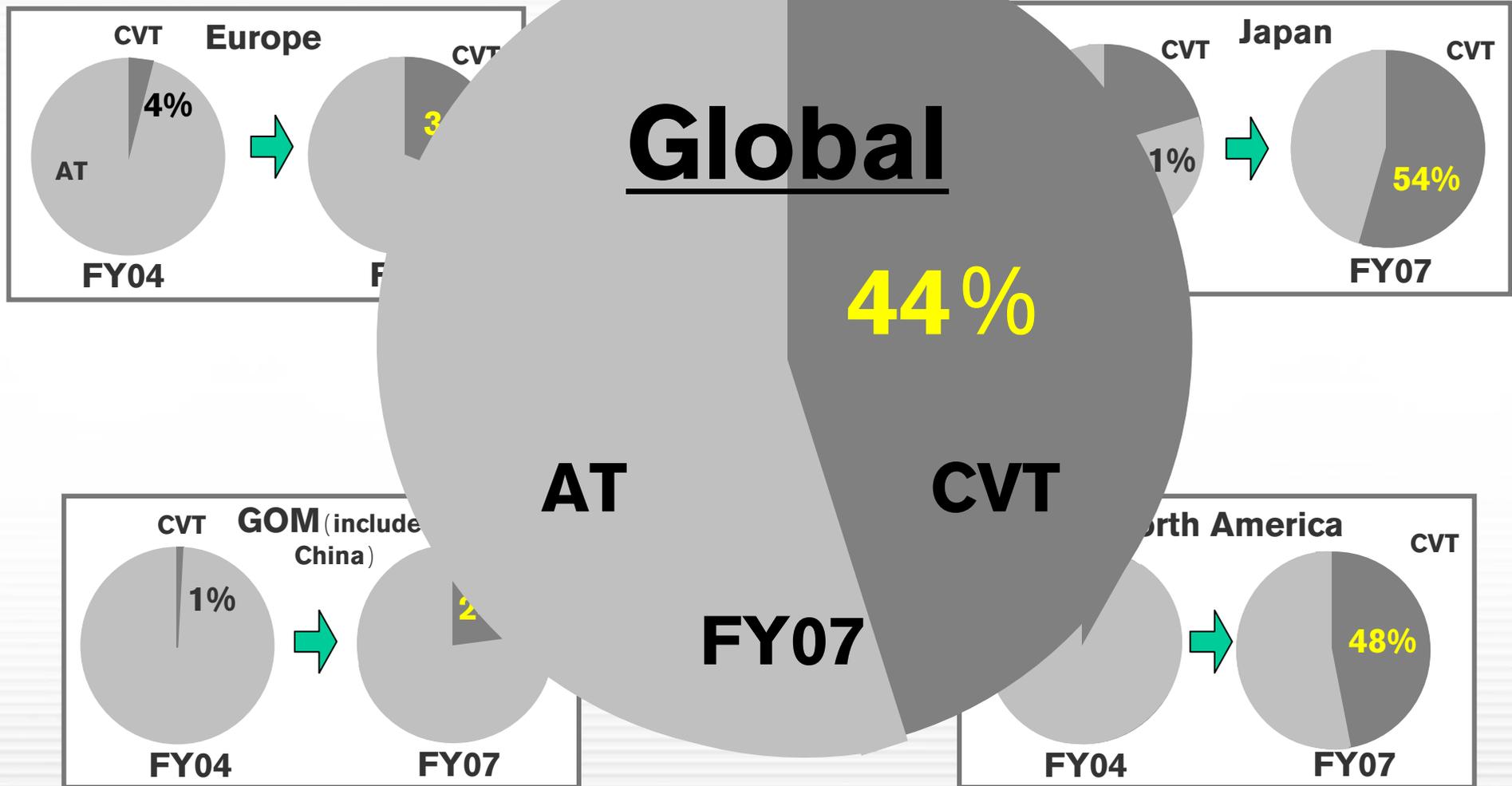
Ratio of Cars Fitted with CVT vs. AT



Denominator : AT and CVT

2-4. Adoption of Global Expansion

Ratio of Cars Fitted with CVT vs. AT



Denominator : AT and CVT

3. CVT Expansion in North America

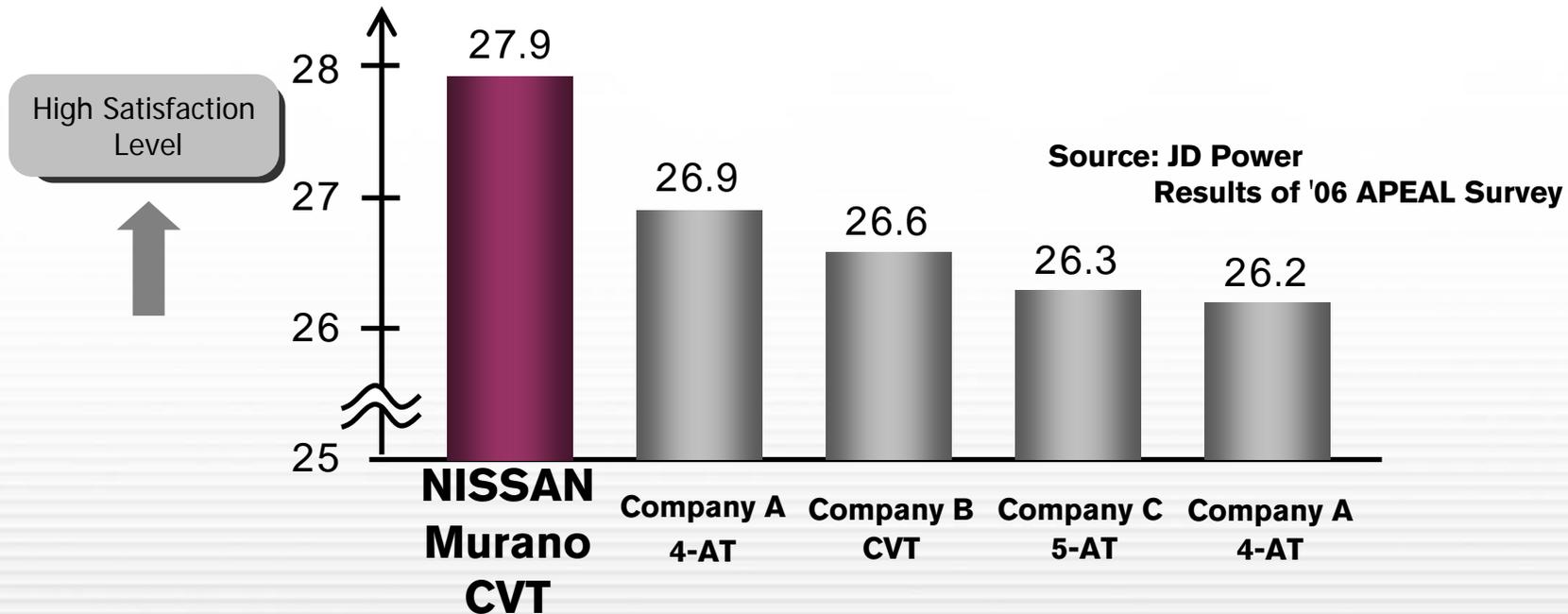
3-1. Comments from North American CVT Customers

North American customers are extremely satisfied with CVT

Typical comments :

- Very positive (good), no hesitation or downshift when going uphill
- Feels more powerful because it operates much more smoothly

▪ JD Power: Results of '06 U.S. APEAL Survey

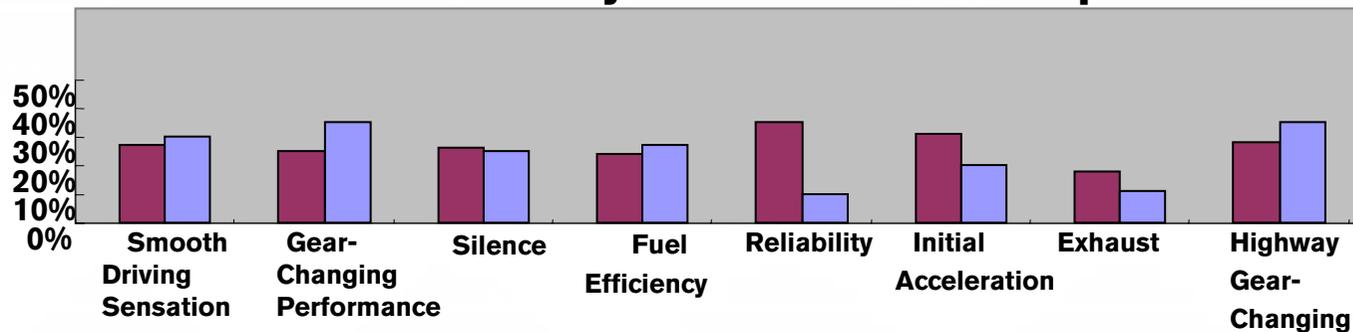


3-2. Comments from North American CVT Customers

Levels of satisfaction were extremely high among those who purchased CVT

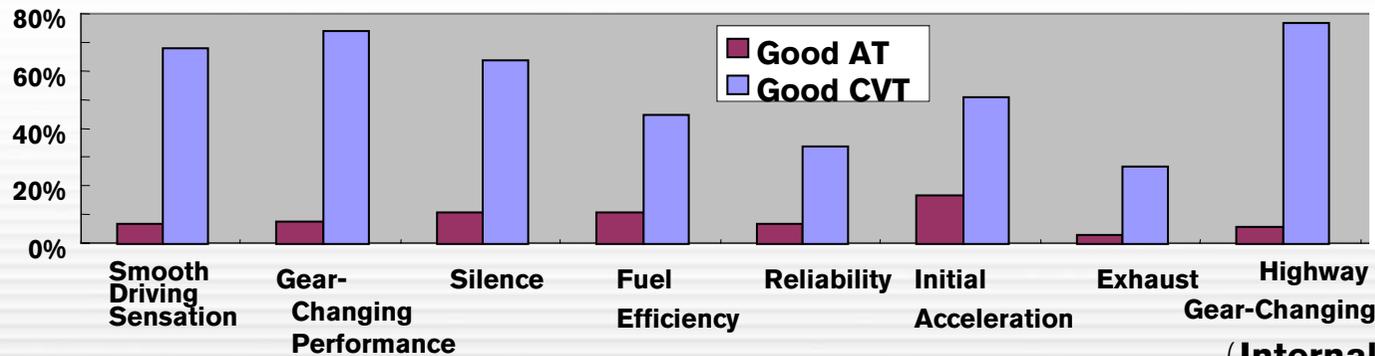
Q: Before purchasing a vehicle,

which did you think has better performance: AT or CVT?



Q: After purchasing a CVT fitted vehicle,

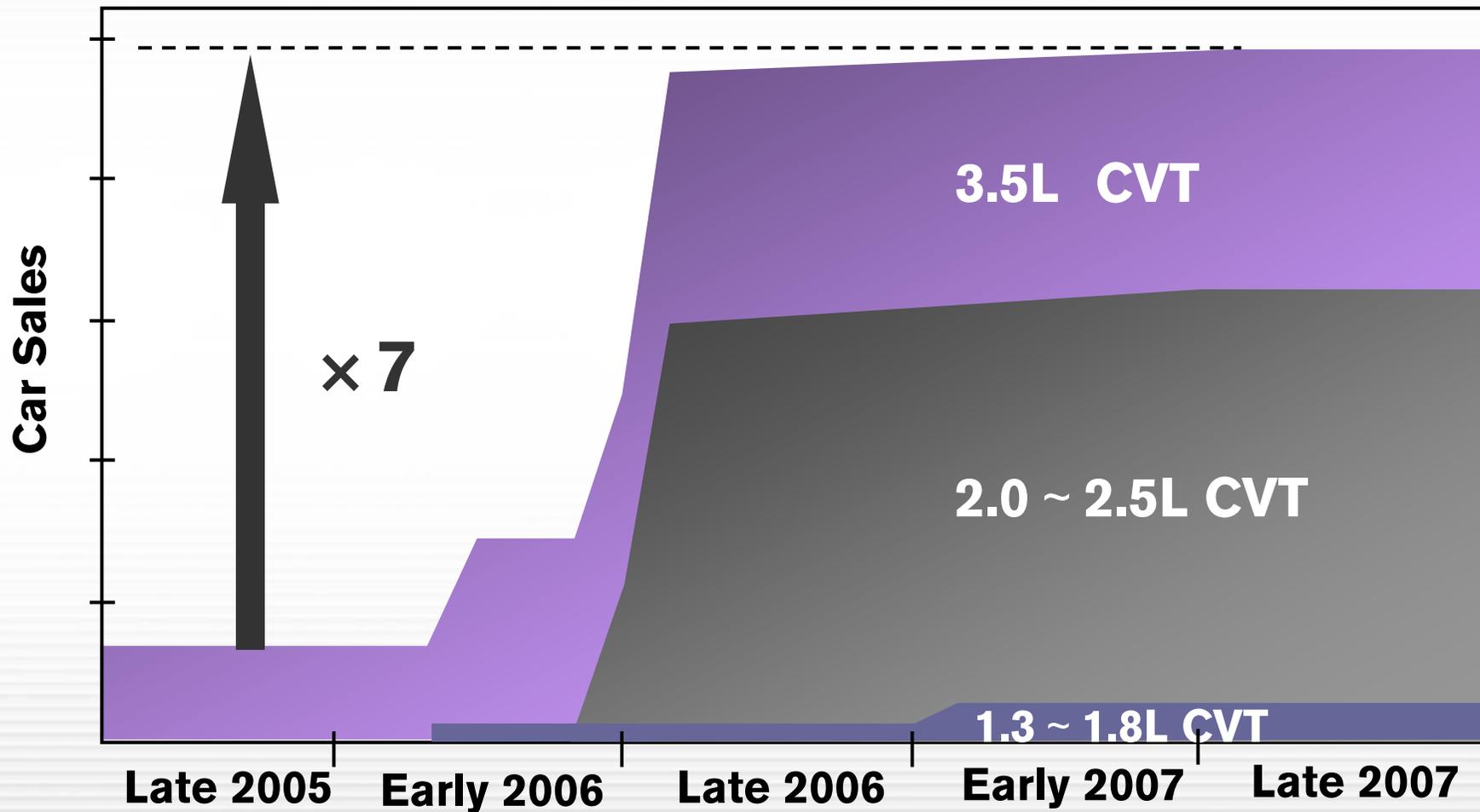
which do you think has better performance: AT or CVT?



(Internal survey result)

3-3. Plans for CVT Expansion in North America

Expand sales of CVT-fitted vehicles sevenfold
in the North American market in FY06



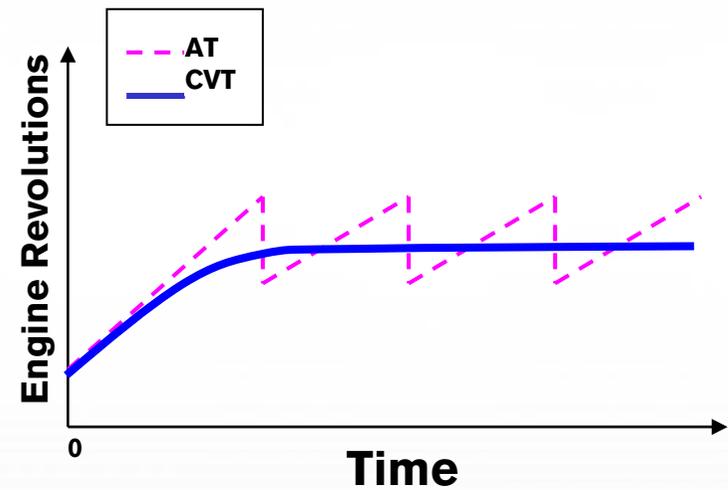
3-4. JATCO Mexico CVT Plant



4. What is CVT ?

4-1. What is CVT ?

The CVT provides smooth and stepless ratio changes.

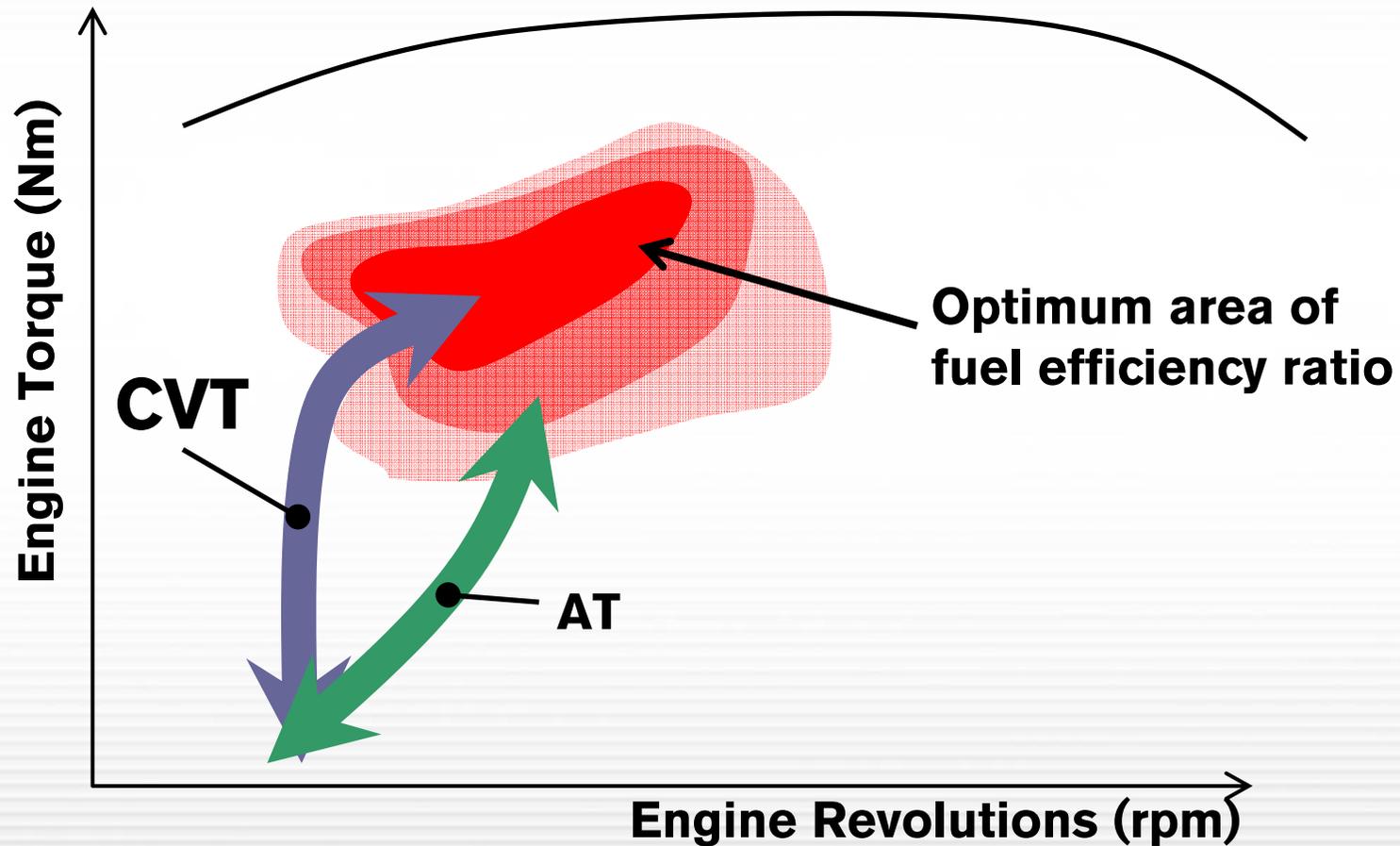


4-2. Special Features of CVT

Stepless shifting of gear ratios for enhanced driving pleasure and fuel efficiency

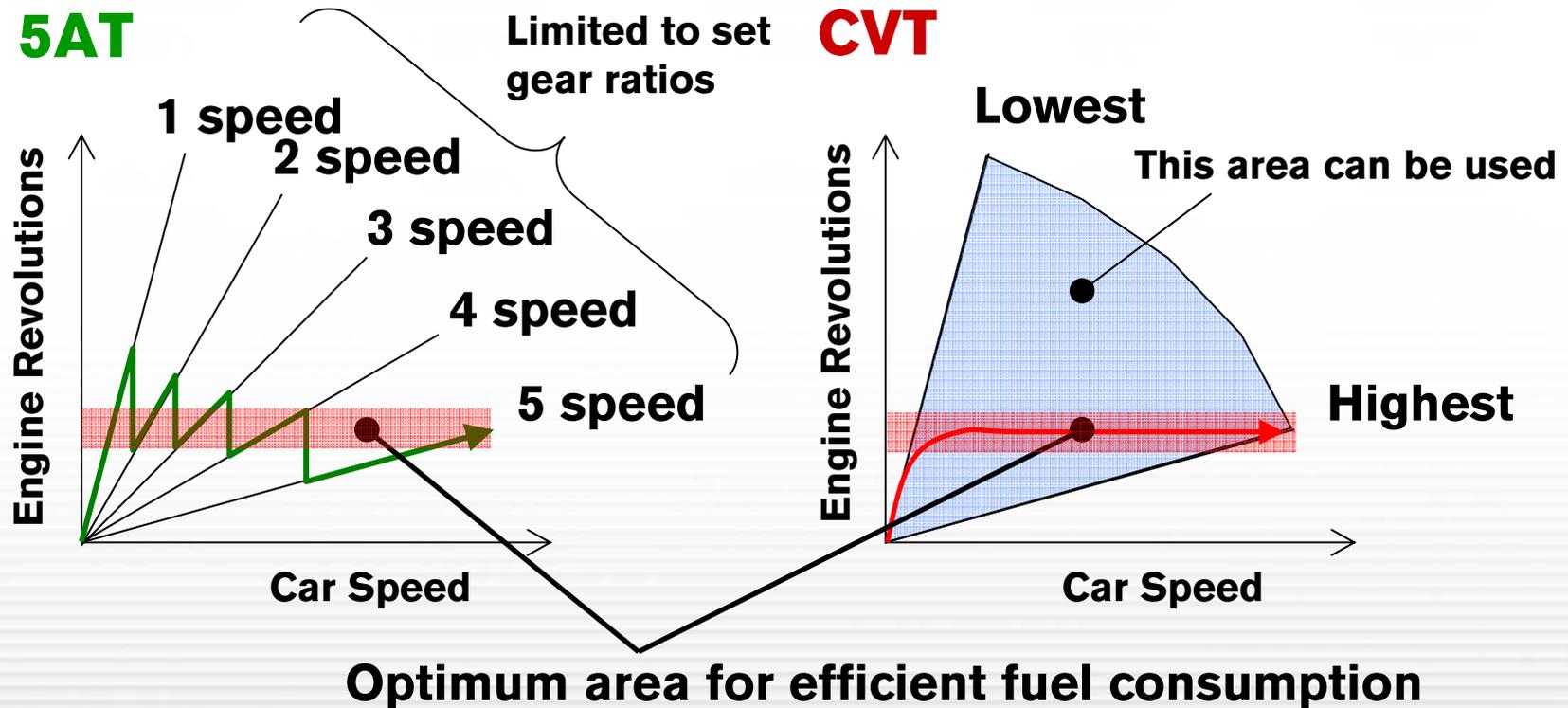
4-3. CVT Efficiency (Fuel) (1)

CVT changes gears smoothly so cars consume fuel efficiently.



4-3. CVT Efficiency (Fuel) (2)

AT can only use set gear ratios so large changes in engine revolutions means it is difficult to use fuel efficiently while driving.

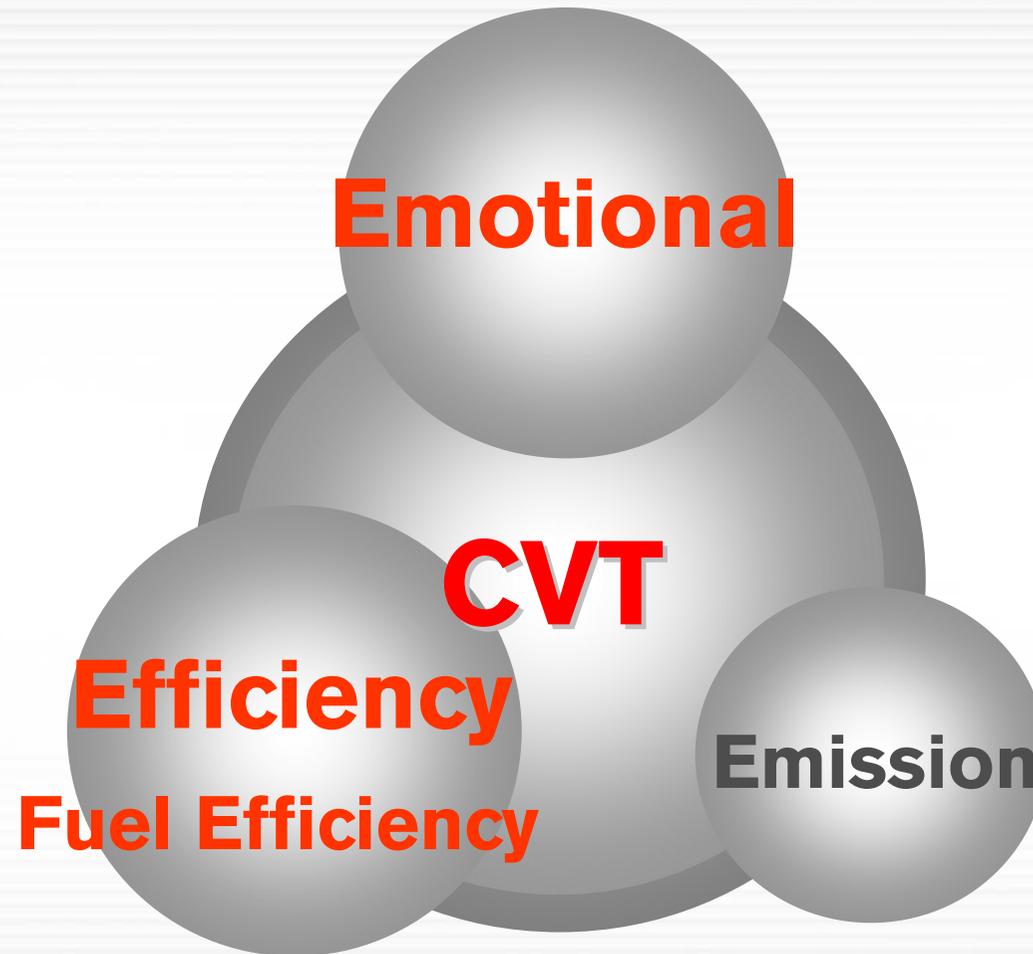


5. XTRONIC CVT

XTRONIC CVT

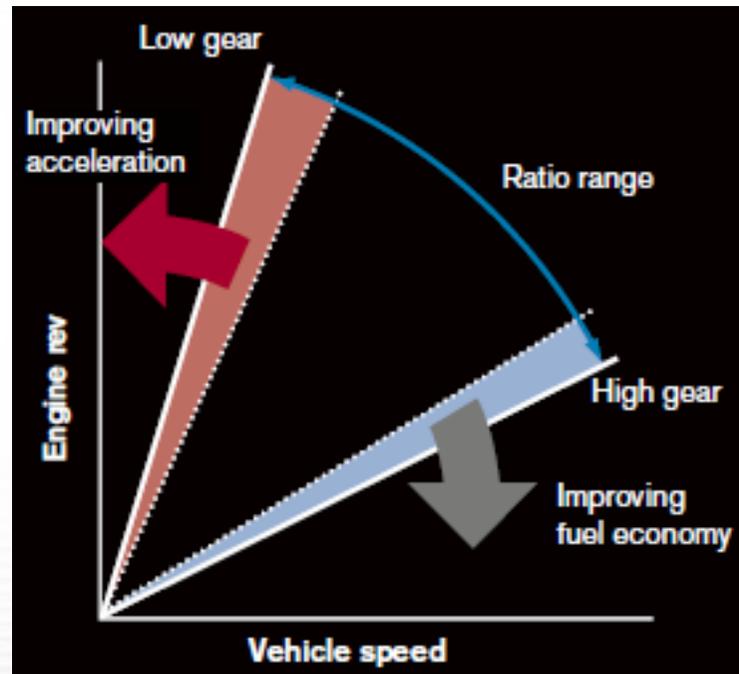


5-1. Improved Fuel Efficiency (1)



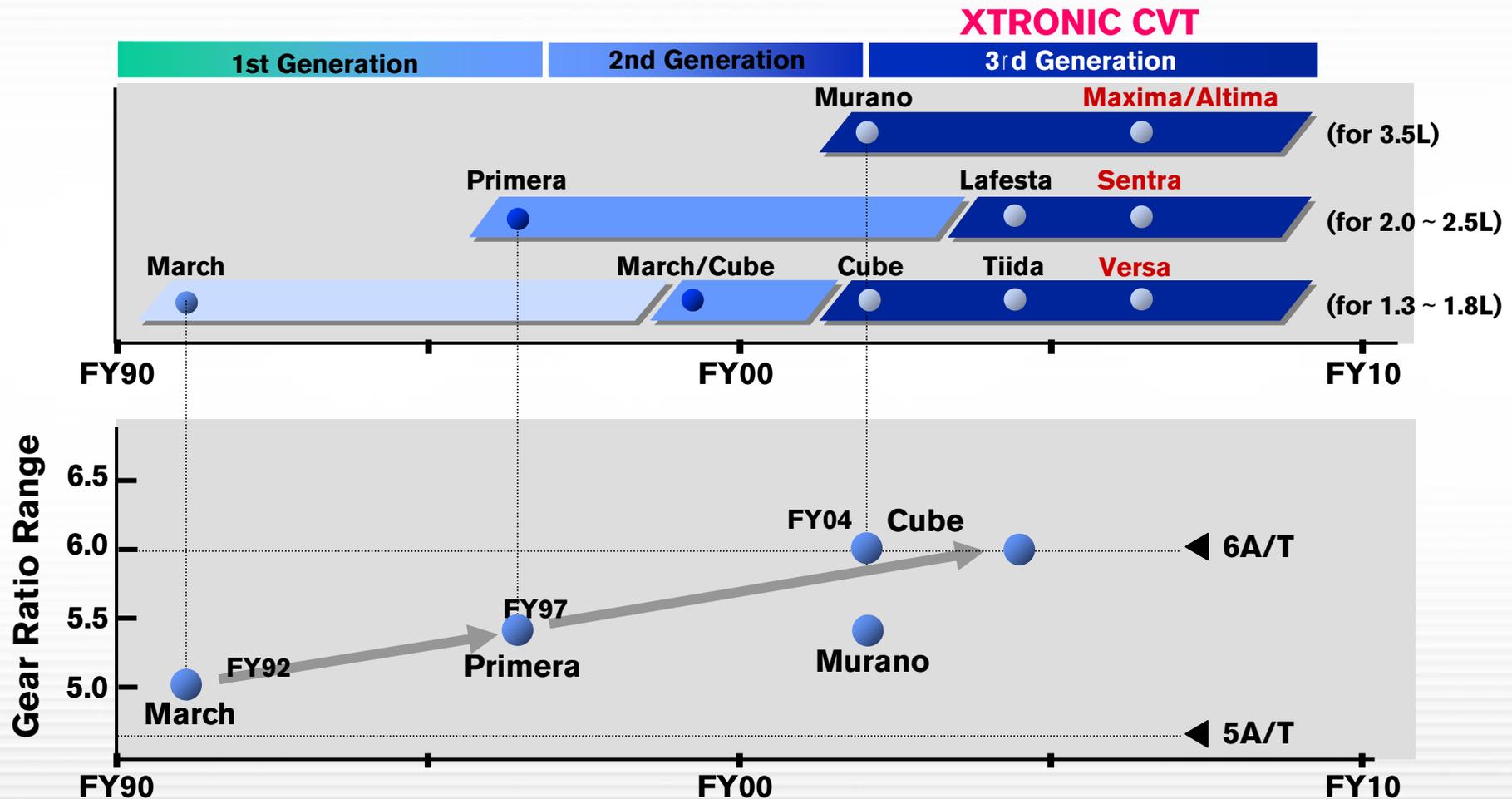
5-1. Improved Fuel Efficiency (2)

Further increasing the range of gear ratios for the XTRONIC CVT has created superb acceleration and increased fuel efficiency.



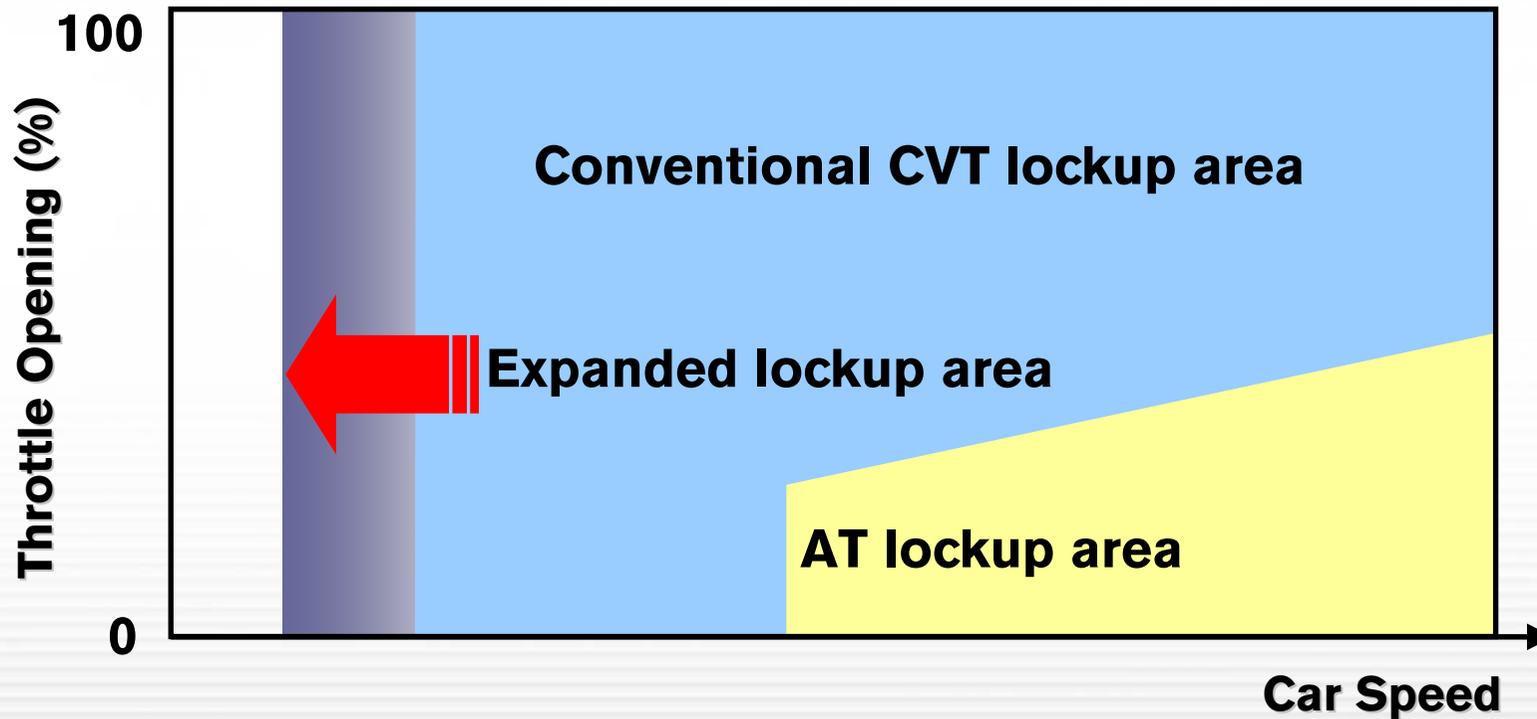
5-1. Improved Fuel Efficiency (3)

The gear ratio range for the third generation XTRONIC CVT expanded to 6.0

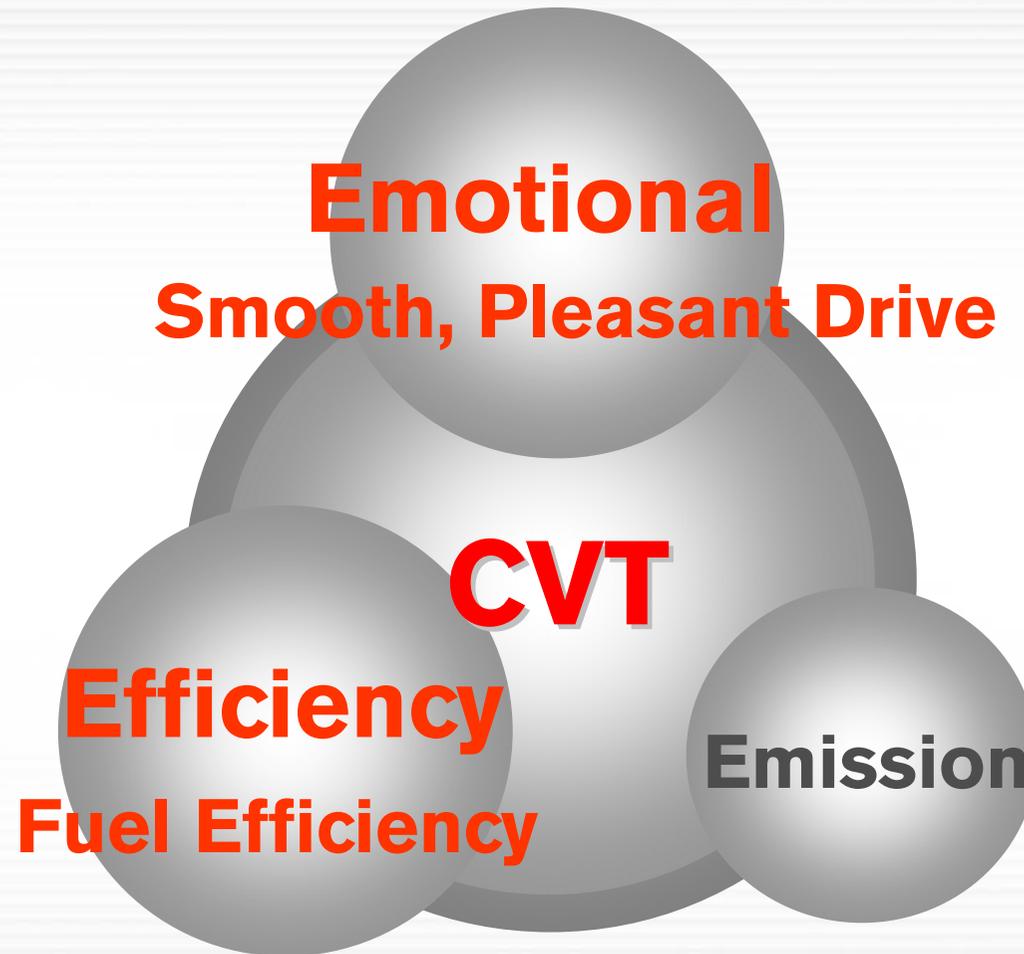


5-1. Improved Fuel Efficiency (4)

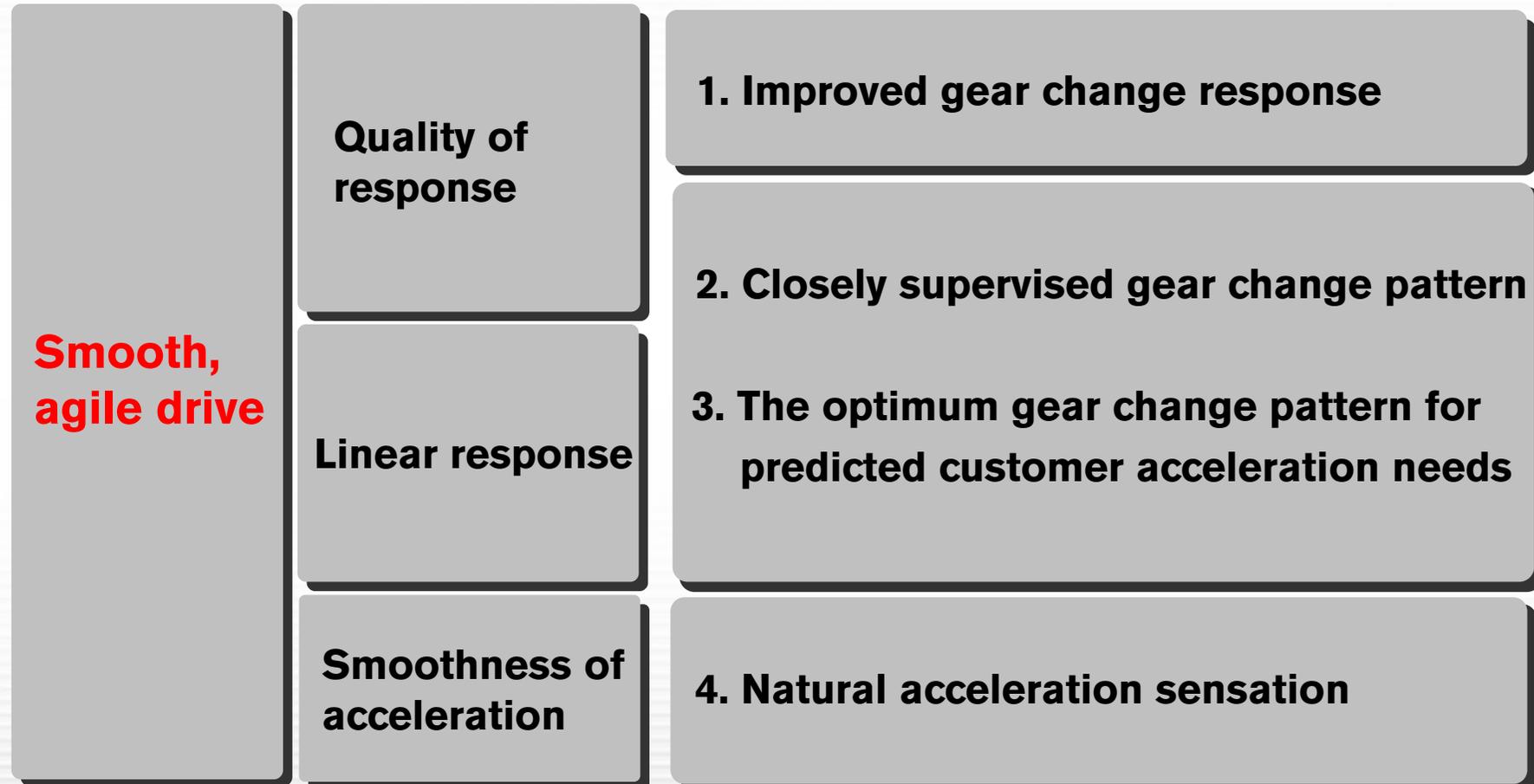
Expanding the lockup area from conventional CVT models further improves fuel efficiency



5-2. Improved Performance (1)



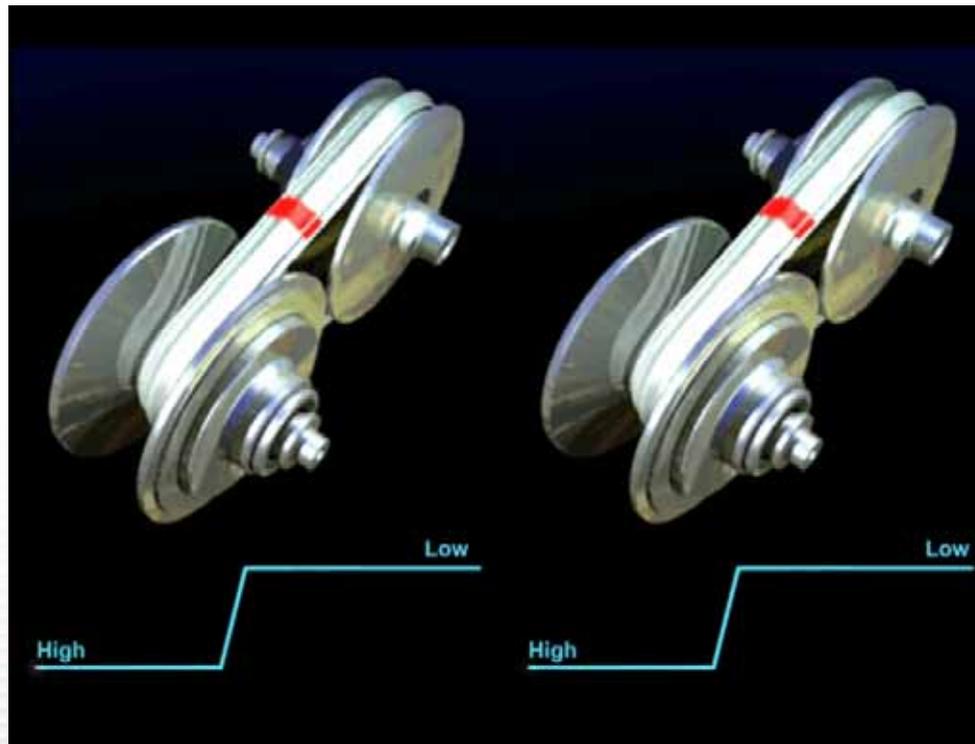
5-2. Improved Performance (2)



5-2. Improved Performance (3)

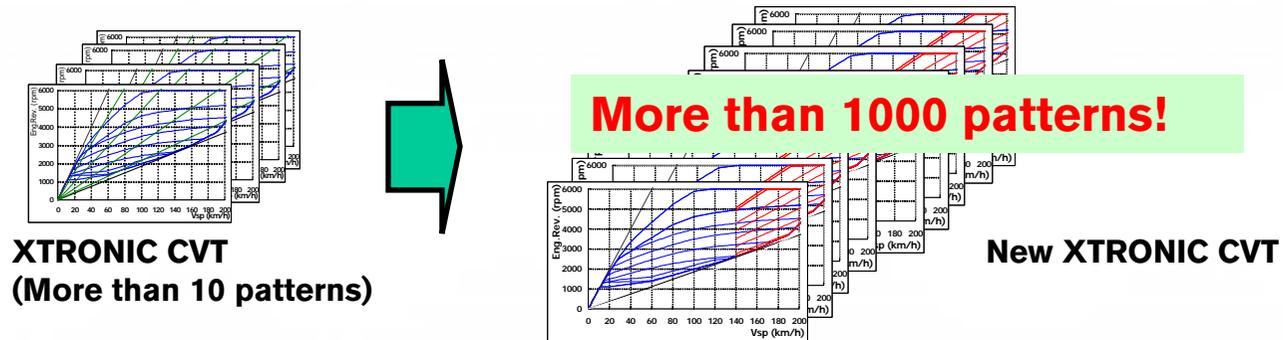
1 . Improved gear change response

With an improved gear change control system, the time used to shift gears is greatly reduced.

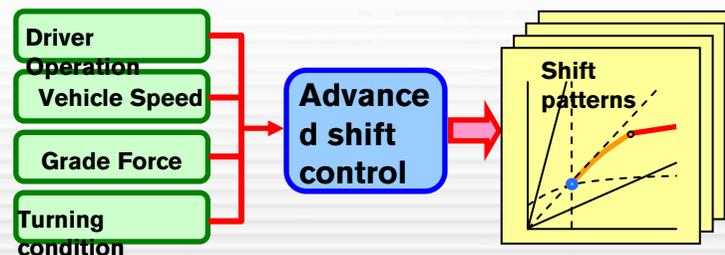


5-2. Improved Performance (4)

2. In all driving conditions, CVT provides a smooth gear change to suit customers' need for a more natural, powerful sensation of acceleration.



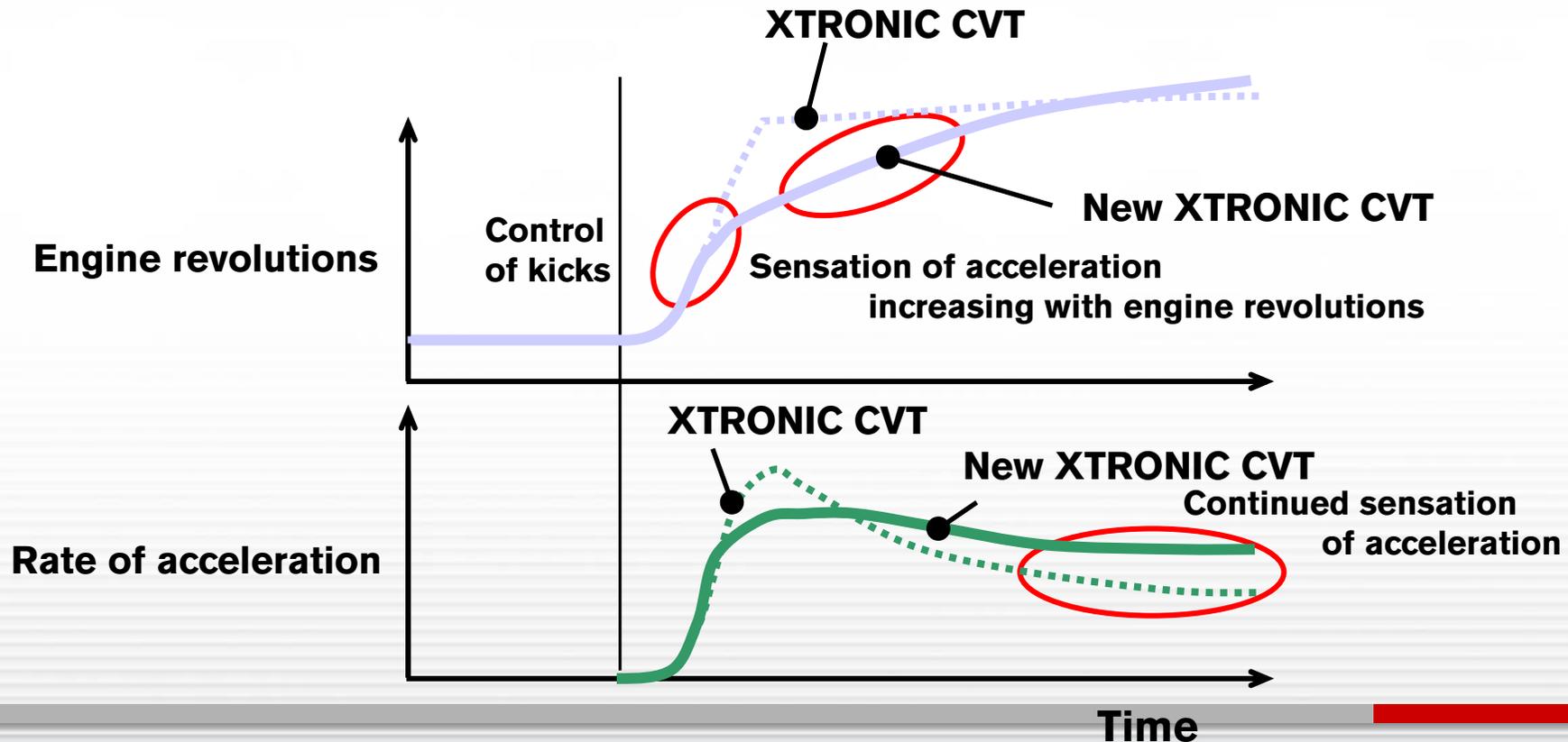
3. CVT offers the optimum gear change pattern which predicts customers' need for acceleration on roads and driving conditions which are constantly changing.



5-2. Improved Performance (5)

4. Creating a natural sensation of acceleration

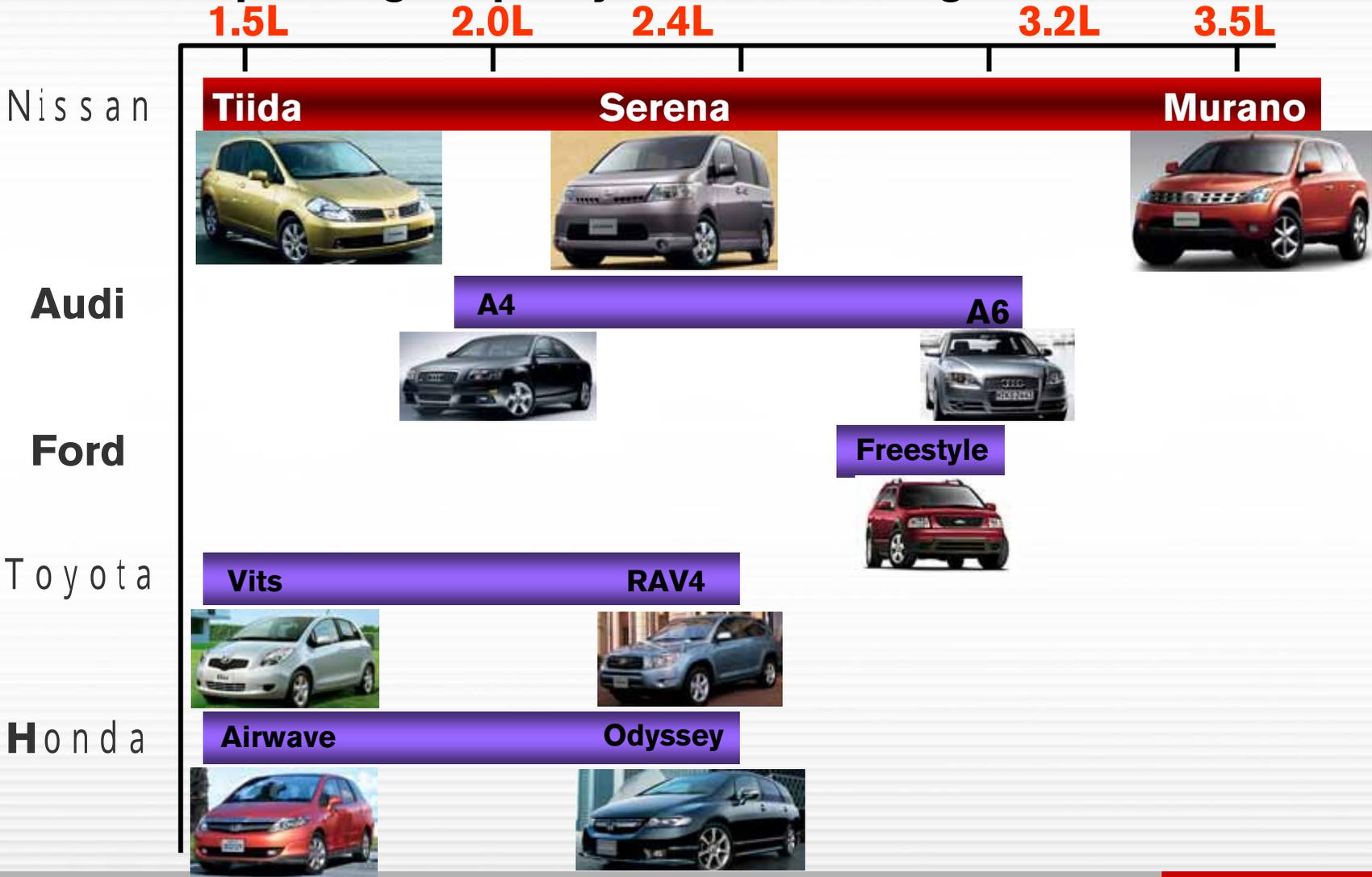
Natural acceleration geared to increasing engine revolutions was realized through the addition of a linear mode control system.



6. CVT for 3.5 L Engines

6-1. Nissan CVT Line-up

The line-up of large capacity CVT for 3.5L engines



6-2. The Technology which made CVT Possible **for 3.5 L Engines (1)**

Optimum hydraulic control technology

**Offers a large power capacity for optimum clamping power
(to clamp the belt) according to conditions**



6-2. The Technology which made CVT Possible **for 3.5 L Engines (2)**

Use of new oil

Use of special CVT oil enables CVT belt to operate smoothly without slipping



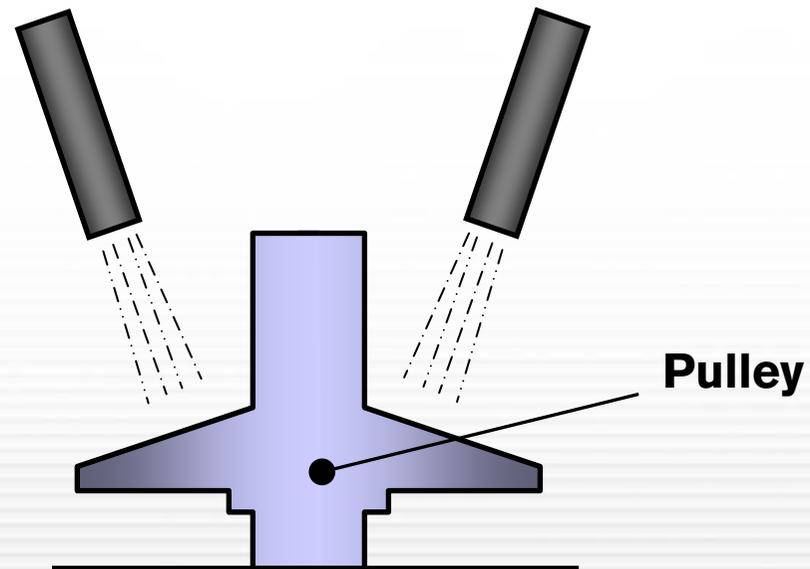
6-2. The Technology which made CVT Possible for 3.5 L Engines (3)

Use of a special surface treatment (shot peening) for pulleys

When the surface hardens, it can withstand intense power

Shot peening method

Shot peening is the process of cold forming the surface of a part by means of a propelled stream of round hardened steel shot.



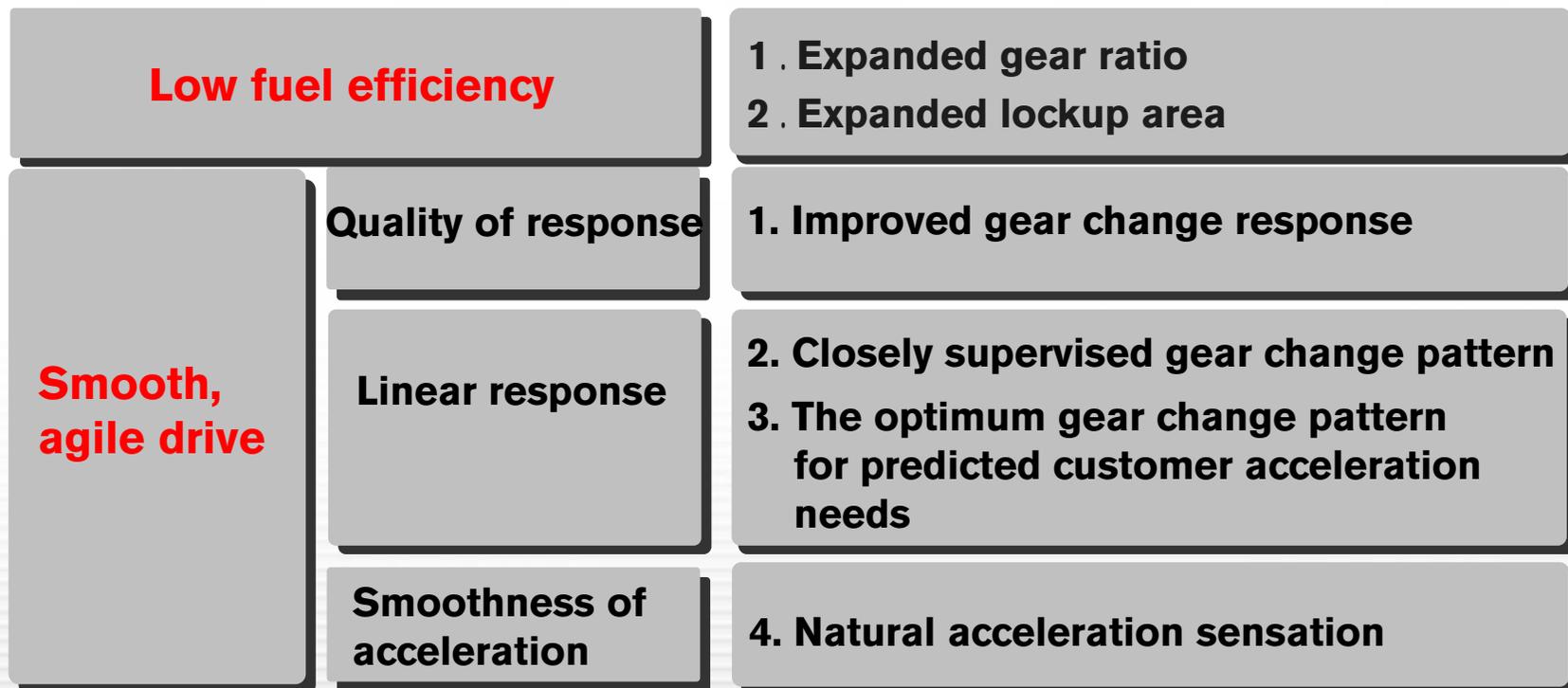
7. Summary

7-1. XTONIC CVT (1)

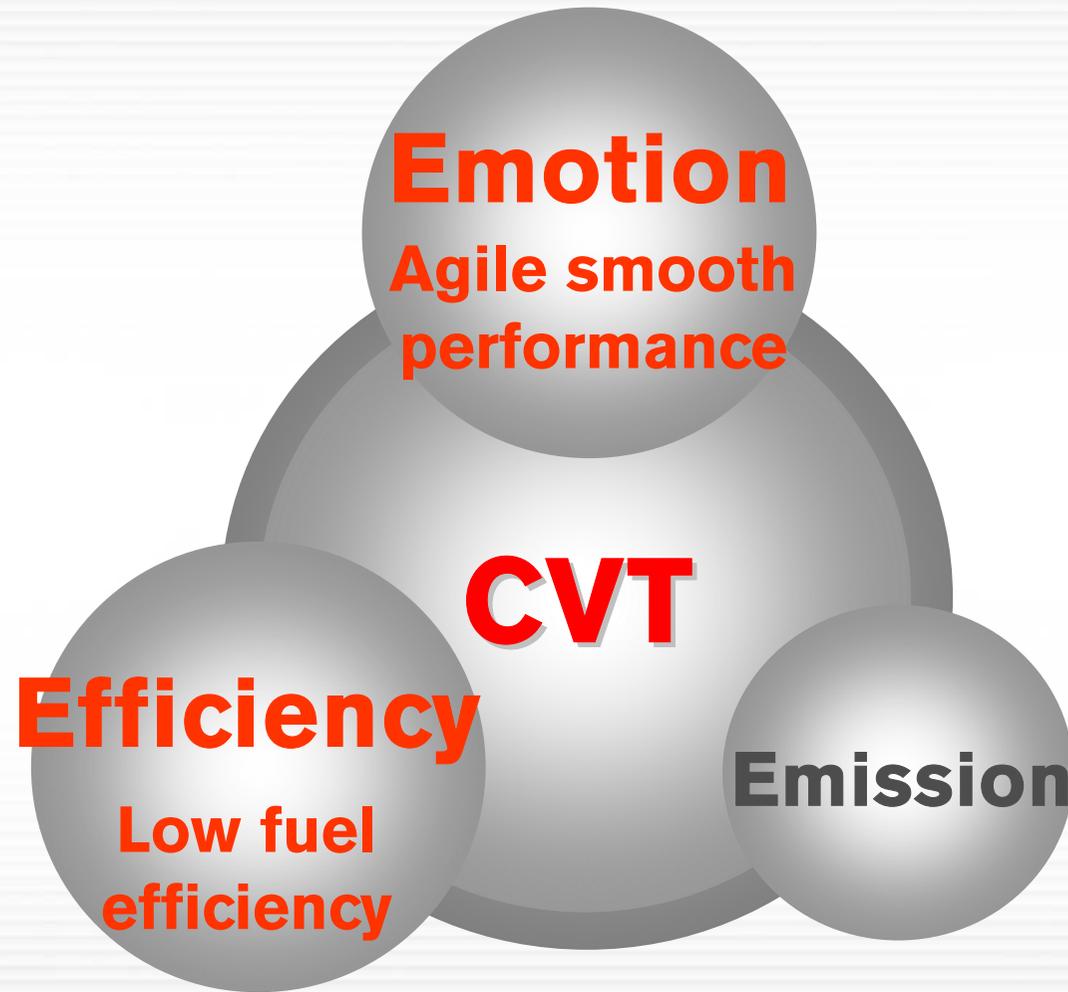
Plans for future CVT

- 1 . Global expansion. “By FY07” 1 million in sales.
- 2 . North America expansion. Sevenfold in North American market in FY06

Benefits of CVT



7-2. XTONIC CVT (2)



Thank you for your kind attention.