



UD TRUCKS

Future technology in Trucking

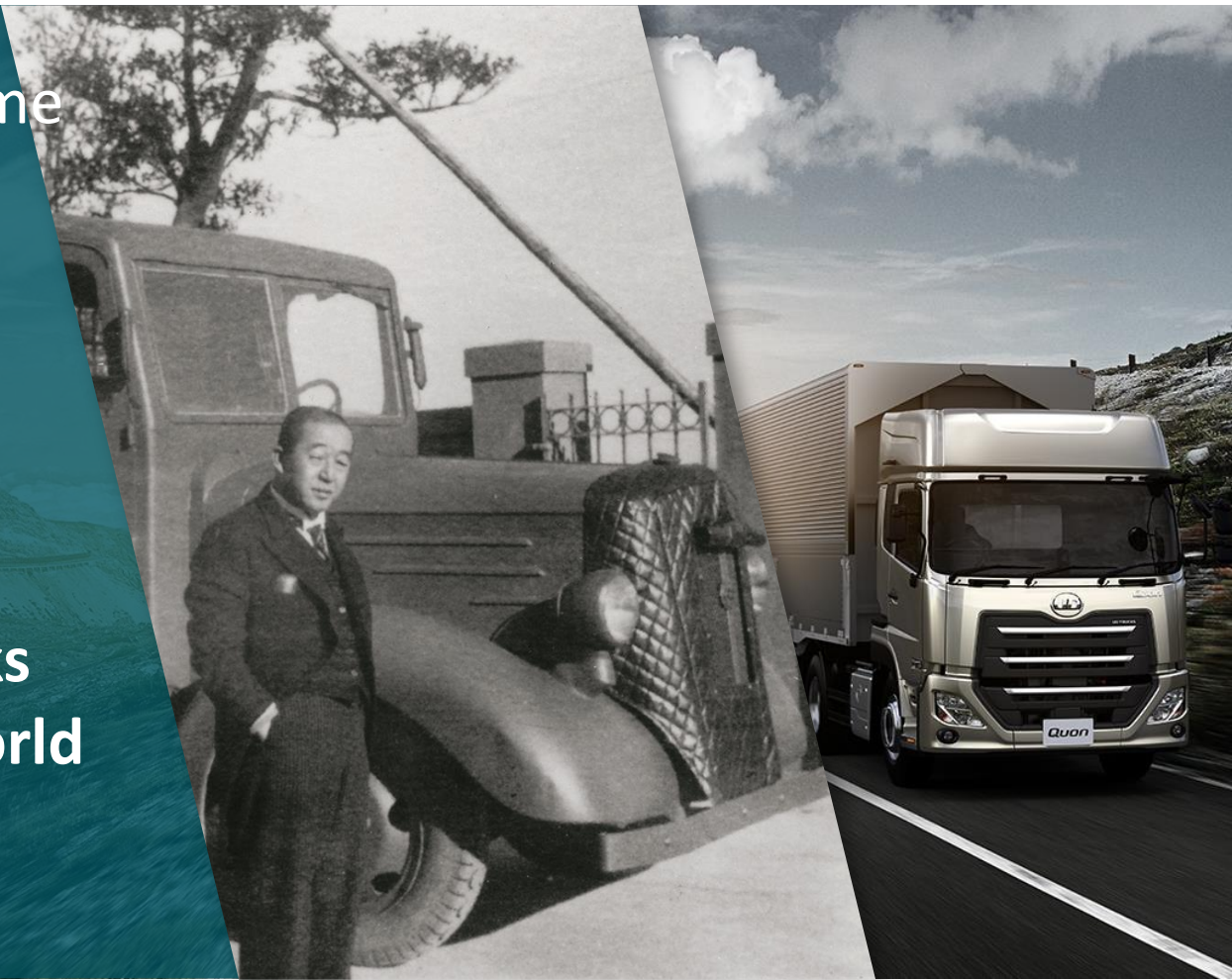
UD Trucks - Japan

July 24th 2019

Nobuhiko Kishi, Vice president, UD Trucks Technology (R&D)

Our vision is the same
today as it
was when founded
in 1935:

To provide the **trucks**
and **services** the world
needs today



Our innovation history, a reply to industry challenges

UD Engine
6TW truck



Traffic Eye ESCOT
GE Engines



Quon
SCR



Quester
Croner



New
Quon



Innovation for TODAY

Engine



ESCOT - AMT



Telematics



Mobile workshop



Innovation for FUTURE?

Engine



ESCOT - AMT



Telematics



Mobile workshop



IMAGINE JAPAN AROUND 2030





ONE IN FOUR

PERSONS IN TOKYO
WILL BE 65+ (2025)

Indonesia 6% in 2025



ONE IN THREE

HOUSES WILL BE
VACANT (2033)



¥5.5 TRILLION

NEEDED TO MAINTAIN PUBLIC
INFRASTRUCTURE (2033)

Traffic congestion costs 100 trillion IDR
in Indonesia economy

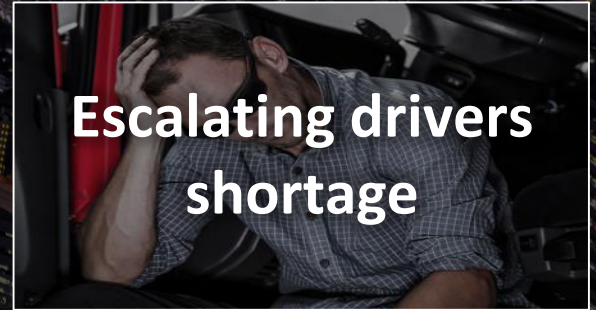


-26%

CO2 NEEDED TO BE
REDUCED IN JAPAN
VS 2013 (2030)

Indonesia
Traffic congestions
Natural resource

GLOBAL CHALLENGES



UD Innovation Roadmap



LOGISTICS

BIG DATA



AI



AUTOMATION



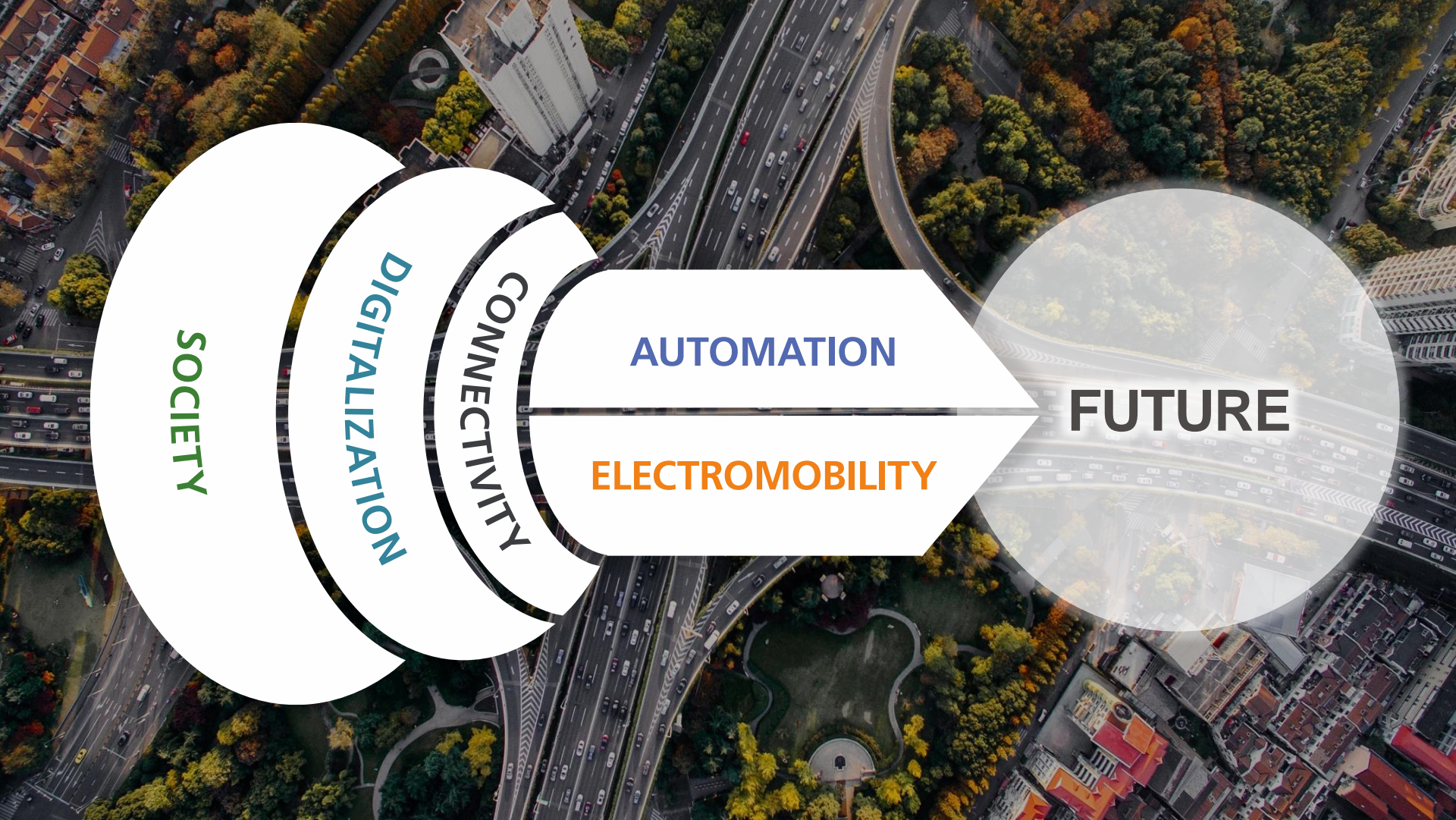
ROBOTS



**SHARING
ECONOMY**

IoT





SOCIETY

DIGITALIZATION

CONNECTIVITY

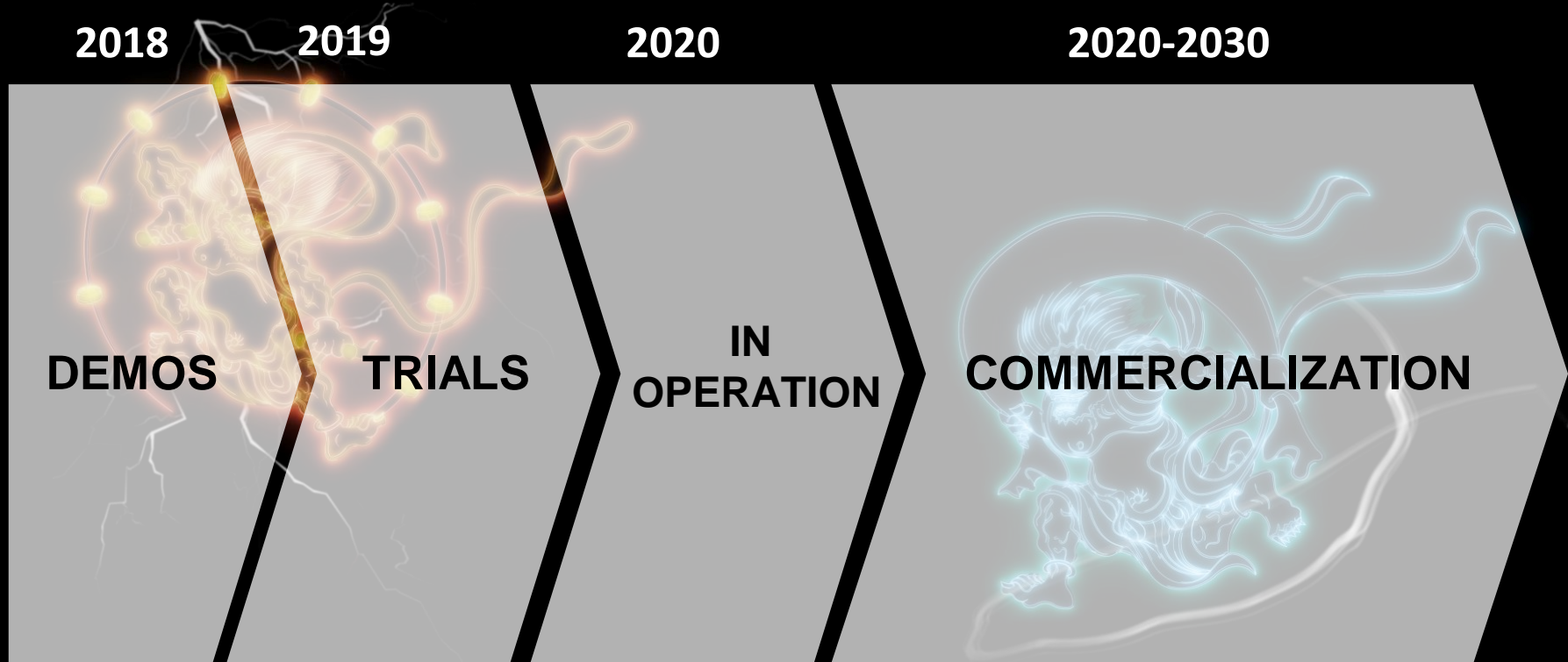
AUTOMATION

ELECTROMOBILITY

FUTURE

UD TRUCKS FUJIN & RAIJIN. VISION 2030

ROADMAP



AUTOMATION FOR SOCIAL CHALLENGES



Safety



Productivity



Efficiency

AUTOMATION KEY TECHNOLOGIES

OPERATION

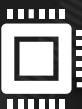


Steering
System

Brake



Propulsion



Software

Camera



V2X
Communication

Radar/Lidar



PERCEPTION

DECISION

RESPONSIBILITY SHIFTS TOWARD VEHICLES

Human

Vehicle



L1

No feet

AEBS, ACC, LKW

L2

No hands

+CACC+LKA
+Auto following

L3

No eyes

+Traffic condition
monitoring
+Positioning
+Obstacle avoidance
+Path planning
+Routing

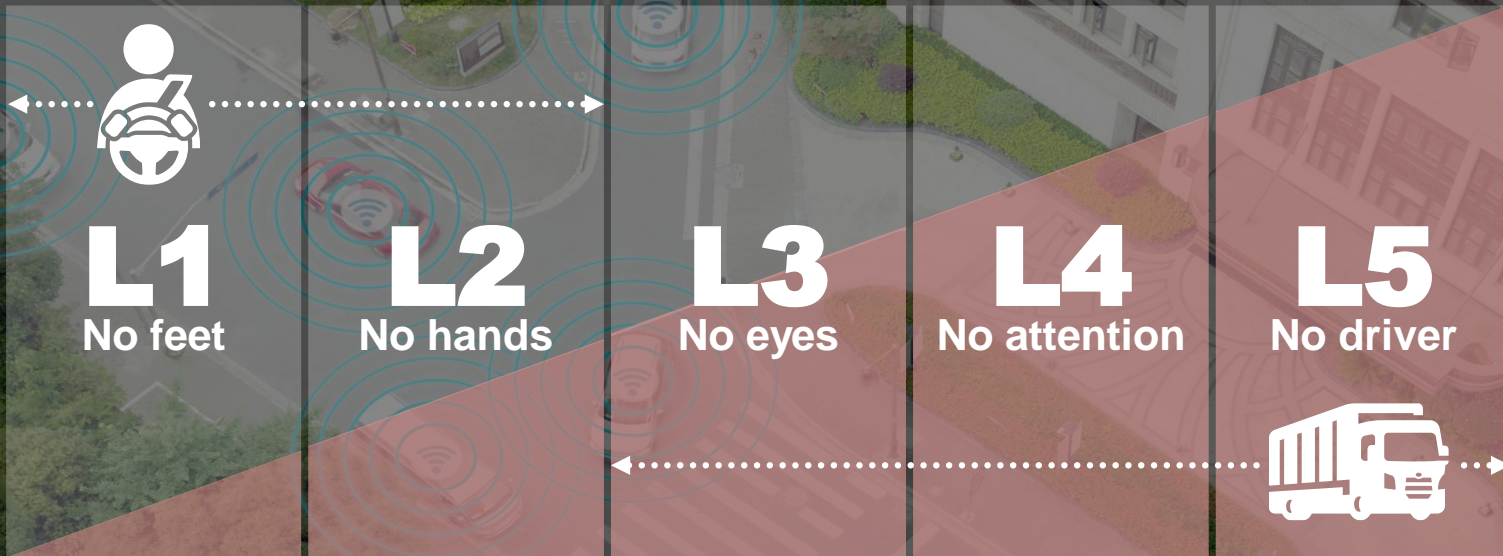
L4

No attention

+Redundancy

L5

No driver



OUR FOCUS

CONFINED AREA AUTOMATION



ON-ROAD AUTOMATION



ON-ROAD
AUTOMATION



DRIVER SHORTAGE
SAFETY & PRODUCTIVITY
NATIONAL PROJECT



ON-ROAD
AUTOMATION



DRIVER SHORTAGE
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UD TRUCKS PRESENTS

Fujin Automated Truck 1st Demonstration





CONFINED AREA AUTOMATION



AUTOMATION TECHNOLOGY



AUTOMATION TECHNOLOGY



AUTOMATION TECHNOLOGY





UD TRUCKS

UD TRUCKS INNOVATION FOR SMART LOGISTICS