Kapsch TrafficCom

Strategy 2027.

January 28, 2021.

Agenda.

1. Developing Strategy 2027.
2. Target markets.
3. Business areas.

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Developing Strategy 2027.

- *Why a new strategy?*
- *Market drivers.*
- *Industry trends.*
- *Strategic cornerstones.*
- *Strategic goals.*

Why a new strategy?

- The **increasing volume of traffic** is putting road infrastructure under ever greater pressure.
  - **New modes of transport and services** will be developed.
  - **Smart** and **connected** devices are already a reality; **autonomous vehicles** are on their way.
- In terms of technology, the shift **from hardware to software platforms** has already taken place to a large extent.
  - Increasing modularization and **software-as-a-service** models.
  - The **data era** has begun.
- **Alternative financing models** are also gaining ground in the transport sector – based on kilometers, usage or ecology, or through private public partnerships.
- The increasing awareness regarding **sustainability** also marks a turning point for initiatives and funding aimed at reducing levels of CO_2, particulate matter, noise (European Green Deal).

Strategy 2027 is an **evolution** from *Strategy 2020*.

Market drivers (1/2).

Infrastructure demand and alternate funding mechanisms	> Growing car park and traffic volumes put infrastructure under pressure. > New lanes/roads and better usage of existing infrastructure are needed to cope with the growing traffic volumes. > Higher penetration of e-vehicles leads to lower fuel tax income for public budgets. > Alternative transport funding mechanisms are required.
Connected mobility	> Adoption of smart and connected devices (including vehicles) and telematics. > Rapid evolution of network technology and autonomous vehicles and driving. > Adoption of new services and smart devices (smartphones) as access to mobility.
Data & AI	> Shared & open data, open APIs, the rise of ITS-G5 & 5G. > Emergence of vehicle data hubs. > Machine Learning and Artificial Intelligence for analytics, simulation and prediction.
New transportation modes and services	> Adoption of new and shared transportation modes (e.g., car sharing). > Electrification of public and private transportation.

Market drivers (2/2).

Ecological footprint (e.g., European Green Deal, US-President Biden's focus on climate)	> Tipping pint for carbon reduction reached. > 2025, transport-related greenhouse gas emissions will be 30% higher than in 2005. > Despite the rise of e-vehicles combustion engines will prevail for at least a decade.
Individualization	> Privacy, in particular data privacy, is becoming more important.
Shift in business	> From hardware to software platforms; embracing of modularization and X-as-a-Service. > User-centric service design; services to be integrated into platform/device of choice. > Emergence of in-vehicle payments and new payment technologies. > Smart infrastructure with reduction in cost of sensors, modules and connectivity. > New solutions can be rolled out rapidly on a global scale.
Urbanization	> 60% of population expected to live in cities in 2030 and up to 70% by 2050. > Immense investment required to cope with mobility challenge as space is limited. > Increasing need for intelligent mobility solutions.

Major long-term industry trends.

Trends

Shift **from hardware to software platforms, data and services**.

Increasing **long-term demand for toll charging and traffic management.**
Reasons: scarce public funds, tougher environmental regulations or stronger user/polluter financing principles

Differentiated, usage-based fee models call for properly coordinated **demand management**.

Growing **user orientation and convenience** will promote **free-flow tolling systems** and **end user services.**

Emerging **new technologies and converging technologies.**
(E.g., connected vehicles, integrated connected car/truck functionalities, and new payment technologies)

Long-term growth in demand for **smart traffic management.**

Strategic cornerstones.

Our identity

Who we are

Kapsch TrafficCom is a **globally renowned** provider of **end-to-end transportation solutions**.

Our mission

What we do

Creating **innovative transportation solutions** for **sustainable mobility** to enable users to arrive at their destination conveniently, on time, safely, efficiently, and with minimal environmental impact.

Our vision

What drives us

Challenging the limits of mobility for a healthy world without congestion.

Strategic goals.

Until year-end 2027….

- Revenues should exceed EUR 1 bn.
  - This means that Kapsch TrafficCom plans to grow stronger than the total addressable market for KTC.
  - Primarily organic growth.
  - Focused M&A to complement organic growth. Main purpose is to gain capabilities.
- EBIT margin is scheduled to improve steadily reaching a level of well above 10%. Equity ratio should be higher than 30%.
- CO_2-neutral as a company and contributing disproportionately to reduce environmental impact.
  - Already today, the company's revenues support environmental goals:
    - Distance-based tolling (user/polluter pays principle) is a widely recognized*, fair and efficient instrument to achieve a sustainable transport policy.
    - Traffic management reduces congestion and, consequently, pollution and the use of fuel.

*e.g., Directive 2011/76/EU of September 27, 2011 (Eurovignette).

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Target markets.

- Regions.
- Business areas.
- Customers.
- Market volume.

Strategic markets.

Regional markets.

Regions

- **Core regions**
  - EMENA (Europe, Middle East, North Africa)
  - North America
  - Latin America
  - Oceania (Australia and New Zealand).
- **Opportunistically**, other regions can be addressed if
  - potential to be profitable and
  - the right risk-return ratio.

- In EMENA, revenues should again exceed FY 2019/20 levels in FY 2023/24. FY 2019/20 included revenues of major projects in Czech Republic (operations) and Bulgaria (implementation) which all have ended in the meantime.
- In North America, Latin America and Oceania, revenues are expected to more than double by 2027.
- Sub-Sahara Africa will not contribute any relevant revenues in the medium-to-long term.

Strategic markets.

Business areas.

Business areas

- Tolling
- Tolling services
- Traffic management
- Demand management

- **Tolling** is projected to remain the key driver of performance.
- **Tolling services** for business partners (B2B) and – to a certain extent – end users (B2C) will gain importance.
- **Traffic management** will become more and more (smart) data driven.
- **Demand management** (includes managed lanes, congestion charging, urban access management) exists in selected markets today and is projected to get applied in more and more markets.

Strategic markets.

Customers.

Customers

- **Core customer markets** continue to be
  - governments (B2G) and
  - businesses (B2B).
- In addition, build up (in)direct access to consumers (B2C) as the business models of our current customers are going to change fundamentally in the medium-term.

- In general, the customer structure will slightly change. Predominantly B2G (governments/municipalities/public agencies) and B2B (concessionaires, fleet card companies, automotive OEMs, etc.).
- Consumer access, direct or indirect, will be built up to prepare for future market changes.

Strategic focus markets for Kapsch TrafficCom.

Overview.

Regions

- **Core regions**
  - EMENA (Europe, Middle East, North Africa)
  - North America
  - Latin America
  - Oceania (Australia and New Zealand).
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  - the right risk-return ratio.

Business areas

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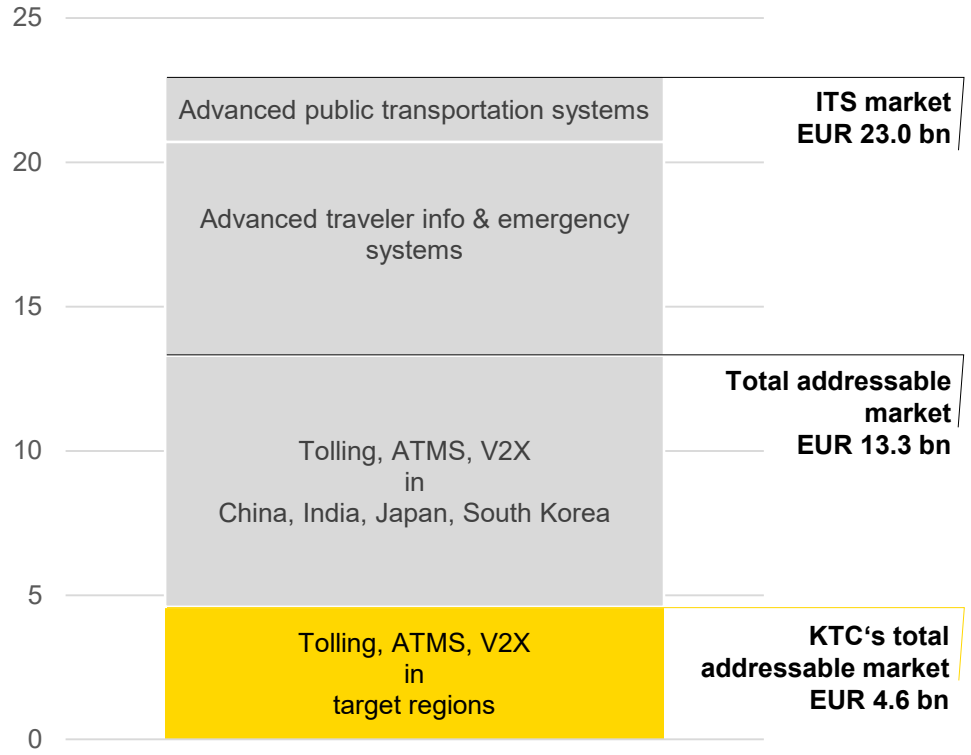
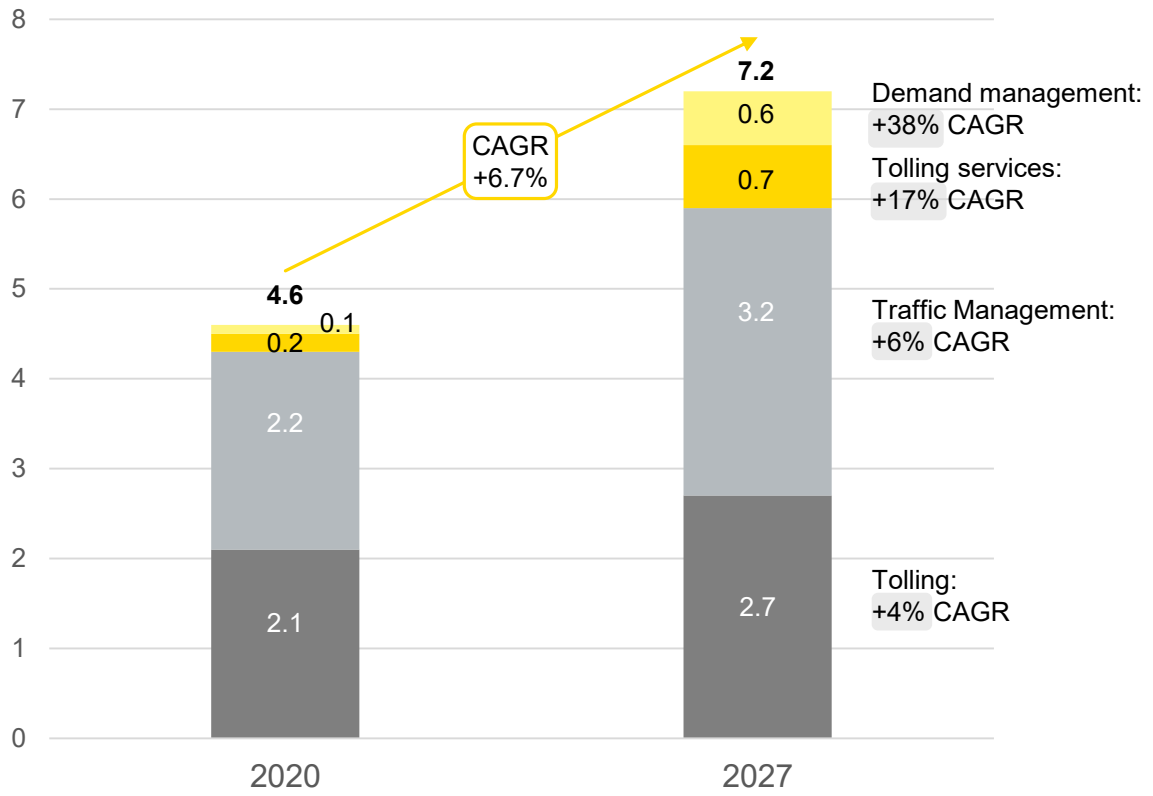
Market volume.

Target market and expected market development.

KTC‘s total addressable market in 2020
(in EUR bn)



KTC‘s total addressable market 2020-2027
(in EUR bn)



Source: Kapsch TrafficCom, Grand View Research, ABI Research

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Business areas.

- Reporting segments.
- Tolling.
- Tolling services.
- Traffic management.
- Demand management.

Reporting segments.

So far…

ELECTRONIC TOLL COLLECTION (ETC)

- Pioneer and technology leader in electronic toll collection.
- Unique experience in nation-wide tolling systems.

Electronic toll collection.

Technology:

- Microwave (DSRC)
- Satellite (GNSS)
- Video
- Mobile tolling
- eVignette

Applications:

- Multi-lane free-flow (MLFF)
- City tolling
- Managed lanes (tolled)

Standards:

- CEN
- WAVE

Plaza tolling.

Tolling services.

INTELLIGENT MOBILITY SOLUTIONS (IMS)

- Broad set of solutions and services addressing different aspects of traffic and mobility.
- Established solutions and investments in future growth.

Traffic management.

- Urban
- Highway
- Tunnels/bridges
- Managed lanes
- Reversible roadways
- Traffic law enforcement

Connected mobility.

- V2X communication technology
- Connected mobility platform

Reporting segments.

Picture according to Strategy 2027.

TOLLING

- Pioneer and technology leader in electronic toll collection.
- Unique experience in nation-wide tolling systems.

Electronic toll collection.

Technology:
- Microwave (DSRC)
- Satellite (GNSS)
- Video
- Mobile tolling
- eVignette

Applications:
- Multi-lane free-flow (MLFF)
- City tolling
- Demand management
  - Managed lanes (tolled)
  - Congestion charging

Standards: CEN and WAVE

Plaza tolling.

Tolling services.

TRAFFIC MANAGEMENT

- Combines conventional traffic management with smart traffic solutions, demand management and data services.

Traffic management.

- Highway
- Tunnels/bridges
- Urban
- Corridors
- C-ITS / connected mobility

Demand management.

- Urban access management (non-charging)
- Managed lanes (non-charging)
- Cross-domain policy setter (CDPS) – new, to be developed

Tolling

Market trends and impact for Kapsch TrafficCom.

The tolling market is changing fundamentally.

User interfaces.

Today: Special devices such as **on-board units**

Future: **Tolling apps** integrated into smartphones or vehicles

Exchange of information between vehicle & tolling system.

Today: Roadside infrastructure using **DSRC***

Future: Smartphones & connected vehicles based on **GNSS****

* Dedicated Short-Range Communication; **Global Navigation Satellite Systems

Consequences.

- Commercial operations will partly evolve into a service provider business → growing importance of tolling services.
- Connected vehicles one of the core drivers and transformers.

Impact for Kapsch TrafficCom.

- Continued sale of **products**. However, such revenues are expected to decline worldwide.
- Continued design and implementation of **projects**.
- Multi-year contracts for technical/commercial **operations**.
- Large-scale end-to-end (**E2E) projects** evolve into smaller and medium-size projects.
- **Tolling services,** CSC operations and software-as-a-service (SaaS) will account for an increasing proportion of the overall tolling business.

Tolling services.

Market trends and impact for Kapsch TrafficCom.

The tolling market is changing fundamentally.

Transition to app solutions.

Consequences.

- Instead of the current end-to-end model → **separation** between toll chargers and toll services providers as well as integrated mobility payment solutions.
- **Mobility super-apps** will be able to access a full range of mobility services and payments within a single app.
- In **connected vehicles**, the digital integrated user experience will become a key distinguishing feature. Consequently, app providers and car manufacturers (OEMs) will focus on end-to-end mobility and route planning services for end customers

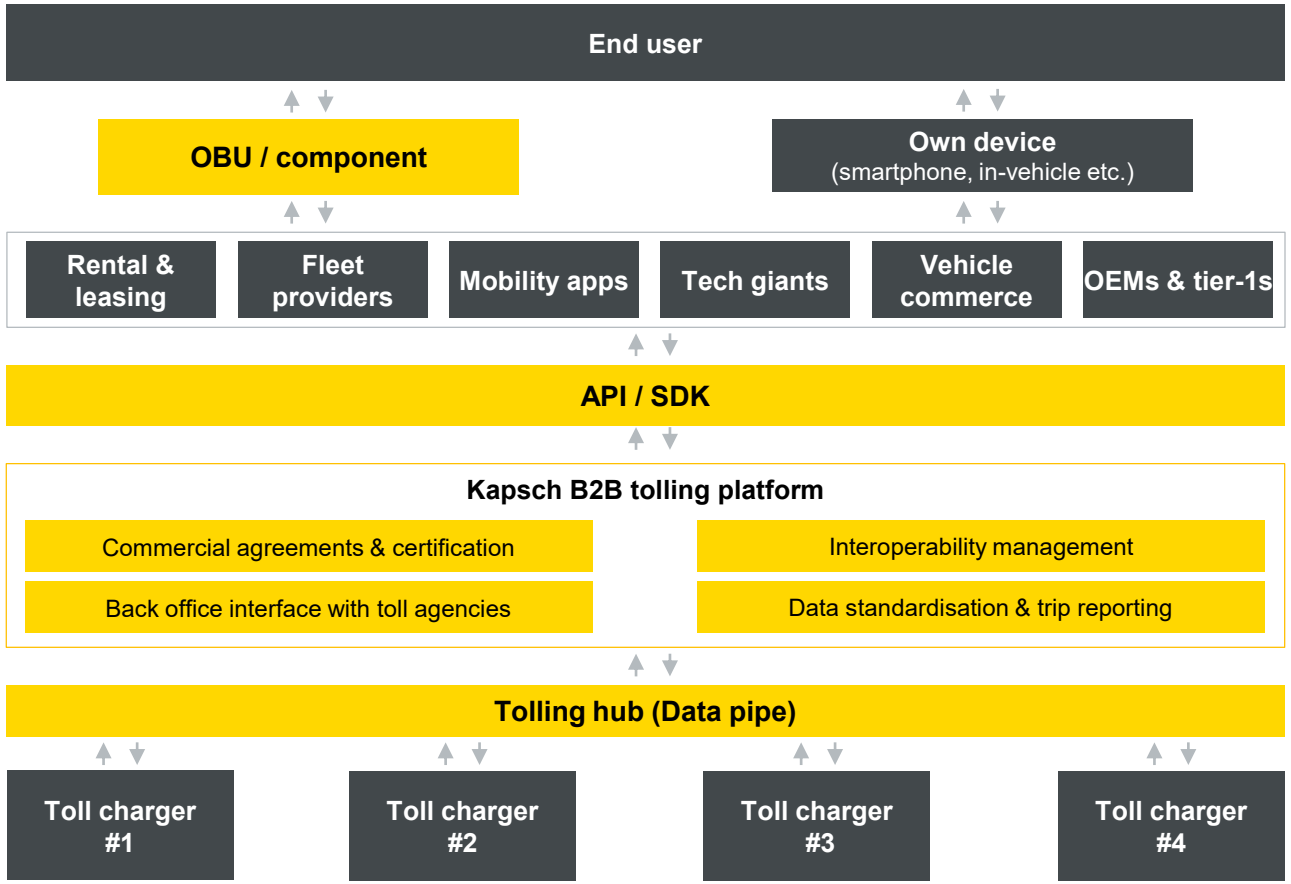
Impact for Kapsch TrafficCom.

- Offering as as toll service provider will gain importance.
- Well positioned as a B2B provider
  - Tolling domain know-how
  - Established contacts to relevant tolling stakeholders
- B2B partnership approach
- B2C offering in selected markets
  - Profitable business case
  - Insight for the B2B business
- Increasing part of revenues dependent on traffic volumes.

Tolling services.

Kapsch TrafficCom's B2B approach will deliver interoperable and device agnostic tolling services.

High-level schematic of B2B solution



Description

- Allows for the managed separation of toll user from toll charger via a trusted and certified middle layer: the **Kapsch B2B tolling engine.**
- The tolling engine is a device agnostic and **interoperable commercial management layer** sitting between toll chargers and service providers.
- The tolling engine is responsible for all **commercial agreements** and **certifications** with the respective toll chargers.

USPs

- Single provider delivering **interoperability** across multiple domains.
- Enables use of **own device** (smartphone, in-vehicle, etc.).
- Delivers required certifications and **commercial agreements** to service providers without the necessity of any prior knowledge of tolling.

Traffic management.

Market trends and impact for Kapsch TrafficCom.

The age of data has significantly transformed the market.

Traffic management is getting smart, data is the key.

Previously: Plans developed and implemented for the control of physical traffic signals.

Today: Immense volumes of data from countless devices and sensors are collected, managed, and analyzed to identify recommended measures.

Services of third-party B2C providers are increasingly influencing road user behavior, independently of traffic authorities' efforts.

Three areas of value creation.

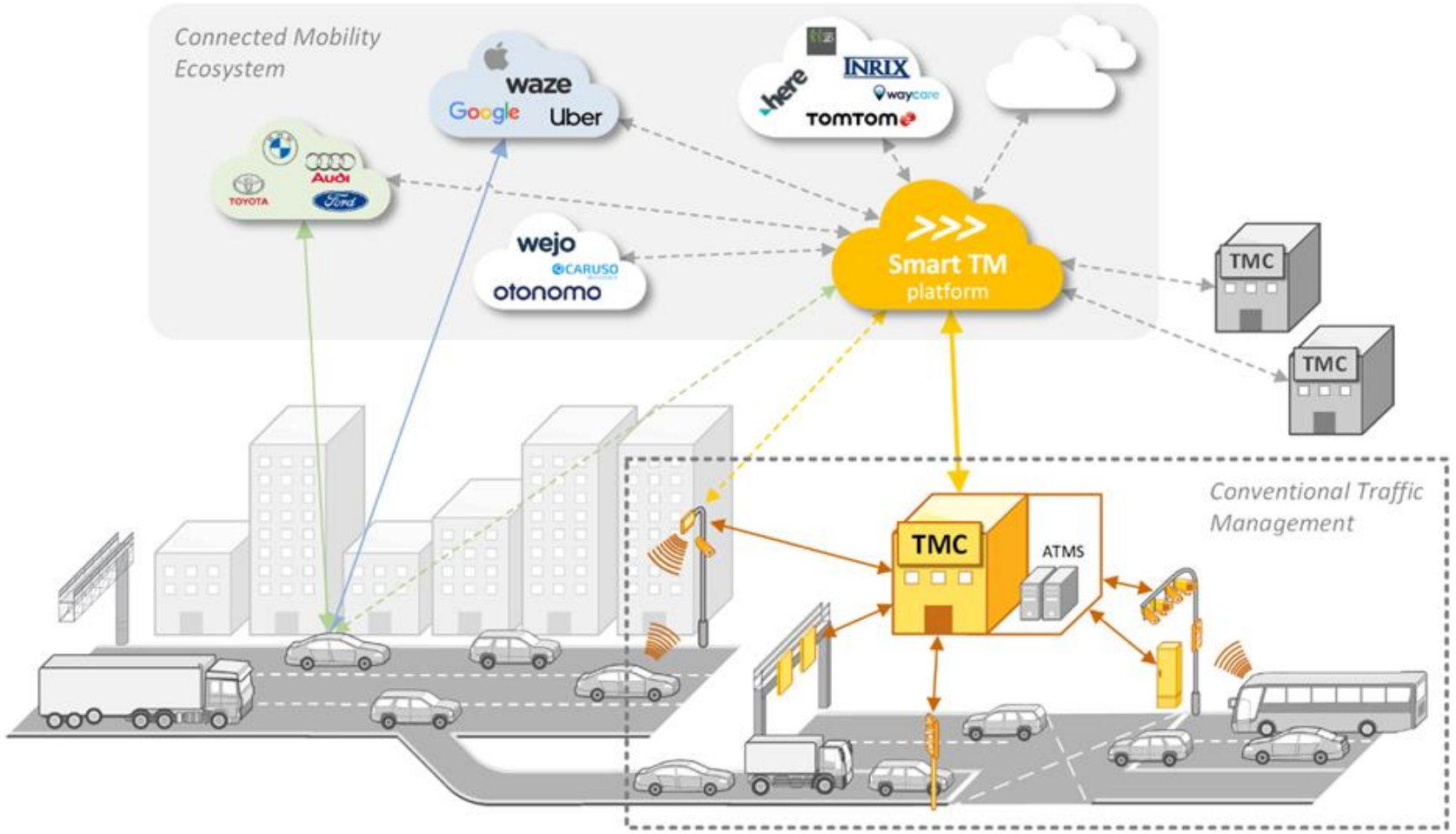
- Conventional traffic management systems.
- Smart traffic management systems
- Data services.

Impact for Kapsch TrafficCom.

- **Conventional traffic management** continues to play an important role.
- **C-ITS/connected mobility** is one of the core drivers and transformers of the business. Data, which can fuel the growth of a data-based business model, has a strategic value.
- Based on the existing business, a **smart traffic management** solution portfolio is developed. The applications are centered around three areas:
  - Traffic optimization: Timing plans analysis and optimization based on data analytics.
  - Decision intelligence: Traffic analytics, decision support through traffic simulation, and prediction.
  - Mobility operation: Open data hub, multi-agency incidents management, and traffic management system as-a-service.
- By 2027, the traffic management business is expected to transform to a predominantly **service provider business.**

Traffic management.

Smart traffic management.



Demand management.

Market trends and impact for Kapsch TrafficCom.

Demand management will fundamentally change the way cities and agencies deal with mobility and congestion.

From managing vehicles to shaping mobility holistically.

Cities need to be considered livable, ensure smooth mobility, and have mobility support environmental goals.

Therefore, cities strive to steer mobility patterns and implement sustainable transport solutions.

Conventional ITS cannot achieve these requirements.

Demand management

- Controls flow of people across all transport modes.
- Influences user behavior with policies (e.g., recommendations, rules, incentives, dynamic toll rates, dynamic traffic lights).
- Is city/metropolitan-specific.

Impact for Kapsch TrafficCom.

- Primary focus on:
  - Development of a cross-domain policy setter (CDPS), the central software platform that generates and disseminates policies.
  - Urban access management and congestion charging.
  - Managed lanes.
- The CDPS includes the most common applications for transportation authorities and can be flexibly adapted. The system enables rules, recommendations and incentives to be set across all transportation areas.
- When tolling becomes established in a city → dynamic pricing.

Thank you for your attention.

Kapsch TrafficCom

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