2nd Institutional Investors’ Day.
September 18, 2018
Today, 55% of the world’s population lives in urban areas, a proportion that is expected to increase to 68% by 2050*. With increasing affluence, the desire for mobility and the associated demands on transportation systems also increase. Increased road traffic implies: fuel consumption, environmental impact, accidents, congestion, and investments in the maintenance and expansion of infrastructure. At the same time, public funds are limited. Challenge for the next couple of decades: Solve those problems!

Products and solutions by Kapsch TrafficCom help to deal with traffic flows more efficiently, as well as to collect charges for the use of road infrastructure and thus manage traffic.

Two major building blocks drive our product strategy:
- Enabling technology
- Managing demand

*Source: UN; World Urbanization Prospects – The 2018 Revision
Enabling Technology.

- Smart sub-systems based on deep learning.
- Connected mobility platforms will spur innovation.
- Real time traffic management based on actual traffic flow and AI.
- Supporting the traveler and the road agency with a next multi-modal back office.
## Smart sub-systems based on deep learning.

**Deep Learning Video Processor.**

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<td>Software solution applying <strong>machine learning</strong></td>
<td>Current application: <strong>Vehicle classification</strong> using custom trained classes</td>
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<td>Cost advantages are <strong>lower-tech hardware</strong> (cheaper cameras / sensors) &amp; less manual intervention</td>
<td>New video-based capabilities for Lean portable <strong>enforcement stations</strong> or <strong>traffic management</strong> (e.g. HOV lanes).</td>
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Open data approach allows maximum benefit to citizens and transportation system managers/operators.

Enables performance measures to determine if public policy goals are being met.

Provides integration to smart city platforms and Internet of Things (IoT).
Real-time traffic management.
Based on actual traffic and Artificial Intelligence.

What it is
If cars communicate to all other cars in their surrounding in real-time, the throughput would increases by 300% (MIT study).
For the time being, we’ll see a mixed mode with adverse effects.
We are an investor in TTS. The company overcomes some of the challenges caused by the mixed mode.

Benefits
Less environmental impact
Reduce emissions in the city by 5–10%.
Smother traffic
Increase inner city throughput by 6–10%.
Supporting the traveler and the road agency.
The next multi-modal back office.

Purpose-built mobility/transportation COTS platform. We have the goal to reduce the SW development effort by 50%.

End-to-end audit. Full visibility. Kapsch “You See What We See” built in.

Cutting-edge technologies and integrated best practices to improve operational efficiency.

Built for interoperability – expandable via plug-ins/extension points.

Leverage to get long-term operational contracts (e.g. Belarus, RSA, RCTC).

Multi-modal. Built for mobility services.
Managing Demand.
Managing demand will be a priority for our customers.

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Strategies.

- Manage Supply
  - Public Transport
  - Capacity Expansion

- Manage Demand
  - Urban Traffic Management
  - Parking Management
  - Incentive Schemes
    - Commercial Schemes
    - Restrictive Schemes
Real-time traffic management.
Based on actual traffic and Artificial Intelligence.

Managed lane schemes improve

- **quality of service** on congested urban roadways,
- achieving **higher traffic throughput**, 
- lower air pollution
- and improved road safety.

MLFF Electronic Toll Collection System

Advanced Traffic Management System

Managed Lanes

- HOV 2+ Free
- SOV $ Toll

Regular Lanes

- Dynamic toll price calculation
- Trip building
- Current toll price
- Real-time Traffic KPIs
- Dynamic message signs
- Roadside traffic sensors
The complete smart parking solution.

1. Detection
   Parking space occupancy is detected in real-time via sensing devices (magnetic or video).

2. Guiding
   Motorist is guided to available parking spaces via Mobile App and by dynamic message signs.

3. Parking
   Motorist parks the vehicle.

4. Payment
   Automated reminder to pay at meter.

5. Guiding
   Motorist is guided to available parking spaces via Mobile App and by dynamic message signs.

6. Parking analytics platform
   Consultants receive analytics for policy recommendations and continuous client engagement.

Directed enforcement
   Enforcement is guided to violations in real time.

Payment
   Automated reminder to pay at meter.

Detection
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Matching demand with supply.

Smart Cities & Regions
Initiate and orchestrate Mobility-as-a-Service ecosystems and regulate marketplaces.

Transport Service Providers
Provide optimized, connected and shared transportation offerings.

Mobility Service Providers
Offer intermodal mobility services and combined mobility packages to customers.

Mobility Service Consumers
Demand and pay for a seamless travel experience.

B2B Mobility Hub
Enable the setup and operation of collaborative MaaS platforms by linking traveler demand to transportation supply.
Perspective on managing demand.
Urban congestion & pollution management.
Change of mobility behavior.

Demographic, social developments drive the market.

Society vs. individual

Mobility decision has an immediate impact on the individual but also on the environment

Change of society framework

Incentives for:

- Driving outside of rush hours
- Companies establishing appropriate business models & work hours schemes, home office
- Consumers to use mobility services instead to buy a vehicle
- Housing developers offer to the residents mobility packages instead to invest in parking spaces
- Special mobility offers for older people or people with disabilities, especially in rural areas
Thank you for your attention.

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