

Lyreco

OFFICE & WORK SOLUTIONS

4
FOUR
SUSTAINABLE LOGISTICS

Electrification of urban logistics

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Zero Emission 100% Electric

Niinivirta Transport S.p.A

- The company was founded in Milan in 1986 as a subsidiary of Swedish TransFargo to operate in transport business in the Mediterranean area.
- In 2000 the name was changed to Niinivirta Transport SpA
- A Finnish subsidiary Niinivirta European Cargo Oy was founded in 2010
- Specialized in transports between Italy and Scandinavian countries
- Niinivirta has been a brave pioneer in the field of emission reduction for a long time

Niinivirta and EVE fleet

- Niinivirta Transport has the very first electrical delivery trucks in Italy and Finland – no emissions, no noise –
- 8 electric trucks in Italy, two in Finland - more to come
- Transporting fashion clothing every day in Italy and Finland
- Smith Newton
 - Range 180 km
 - Charge time 8 hours
 - Top speed 80 km/h
 - 120 kW motor
 - Lithium-ion sealed battery pack
 - Gross weight 10000 kg



Niinivirta and EVE fleet

- **6 Emoss** electric trucks
- Made in Holland
- Gross weight 14t-18t, loading capacity ca. 9t
- Max power 150-235 kW
- Max torque 3400 Nm (max 30 sec), continuous max torque 1600 Nm
- Engine currency 600V
- Battery capacity 140-200 kWh (LFP)
- Charging power 44 kW
- Charging time 4 h with AC400V/63A
- Max range 250 km



Experiences in Europe

- The first electric truck started in 2013 in Italy and 2015 in Finland
 - Average yearly kilometers:
 - Italy 25000 km/truck
 - Finland 40000 km/truck
- Electric trucks are equipped with IoT devices and connected to a server for data acquisition
 - Enables exact energy and route calculations

Positive

- Energy efficiency:
 - Average energy consumption ca. 0,75 kW/km (one third of the consumption of a similar diesel truck)

- No emissions:

Diesel emissions saved in September compared to EUR5*		Monthly kg	Yearly kg
<small>* comparison to a EUR5 15t diesel truck with 50% load. Source: VTT /Lipasto</small>	g/km		
Carbon dioxide CO2	545	1 760,50	21126,03
Nitrogen oxides Nox	1,9	6,14	73,65
Particulate Matter PM	0,033	0,11	1,28

- *Niinivirta electric fleet saves over **150 tons of CO²**, **550 kg of Nox** and **8 kgs of PMs** per year*

Positive

- *No noise, positive image*
- *Range is sufficient for every day use*
- *Electric powertrain works well in both hot and cold environment*
 - *In Finland the trucks run well in -20 C*
 - *The accessories and wires may need some extra attention*
- ***Niinivirta is ready and experienced to give electric solutions to urban logistic problems in whole Europe***

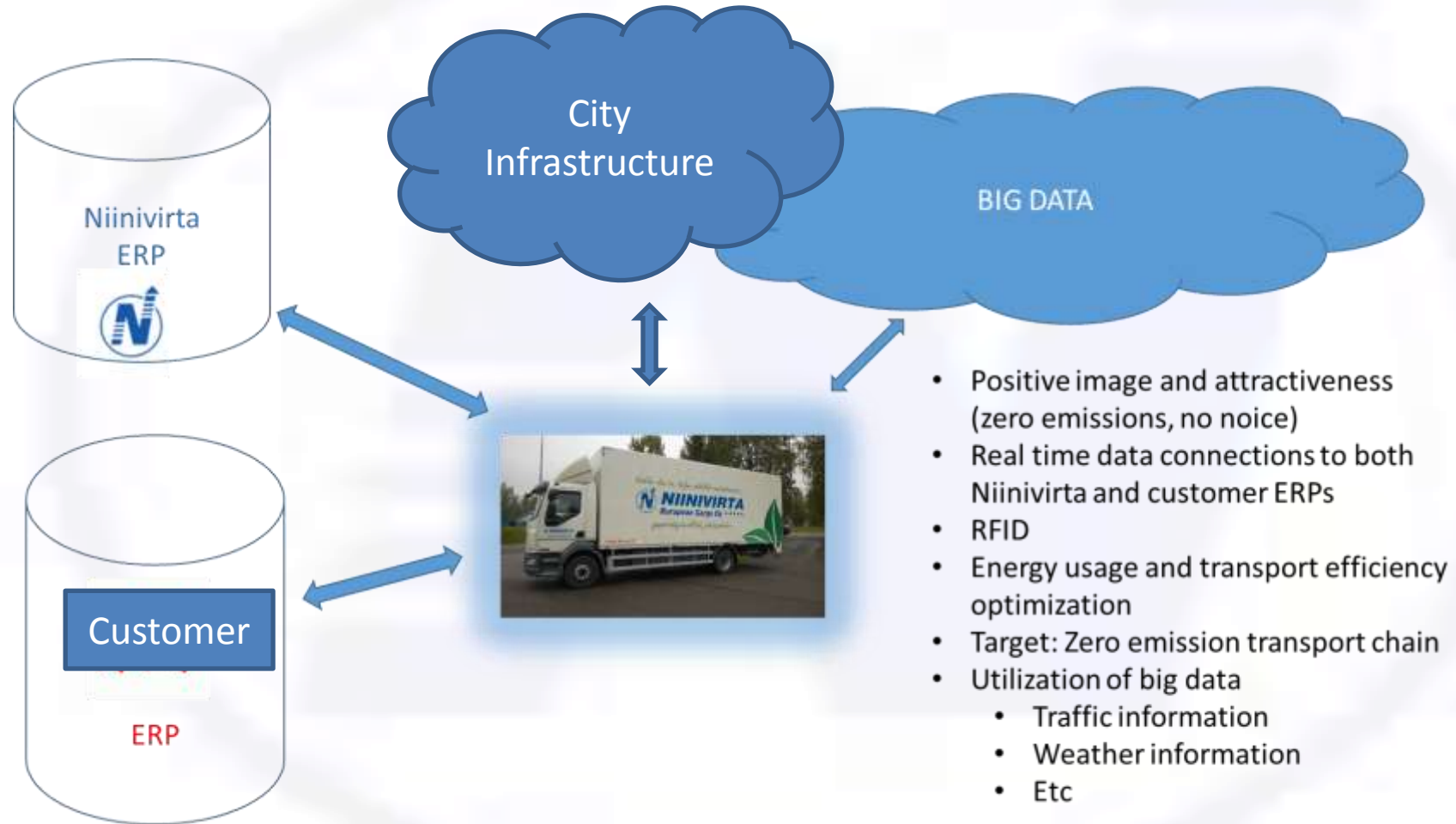
Obstacles

- *Charging infrastructure in cities in a very unmature state*
 - *No fast charging, no DC charging possible*
- *Electric trucks are not massproduced yet*
 - *High price*
 - *Some quality issues*
 - *Each individual truck seems to be slightly different*
- *Local service points do not exist*
 - *Even small faults cause stops and waiting*

To be developed...

- Common European legislation for electric vehicles needed
 - Registration of an electric truck takes 3 hours in Finland – 4 months in Italy!
 - Common incentives in Europe should be developed
- Public sector should lead the way to develop clean urban logistics
 - Public sector should consider electric vehicles when opening tenders for urban logistics

Niinivirta Smart Transport Concept



What Niinivirta Smart Transport concept can offer?

- Emission free deliveries – positive image
- Improved energy efficiency
- Intelligent logistics – improved efficiency
 - Route optimization
 - No unnecessary loadings/unloadings
- Better information sharing – transparent and real time information about delivery times
- Just-In-Time deliveries
- Less errors and mistakes
- Possibility to use mobile RFID together with IoT



THANK YOU!
GRAZIE!