

e-Mobility

Connecting the Automotive and Electric Energy worlds

Caio Klasing Pandolfi

Three main disruptive forces will transform how people and goods will move in the future

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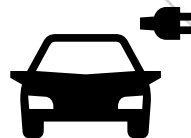
Electric Vehicles



Mobility as a Service



Autonomous Vehicles

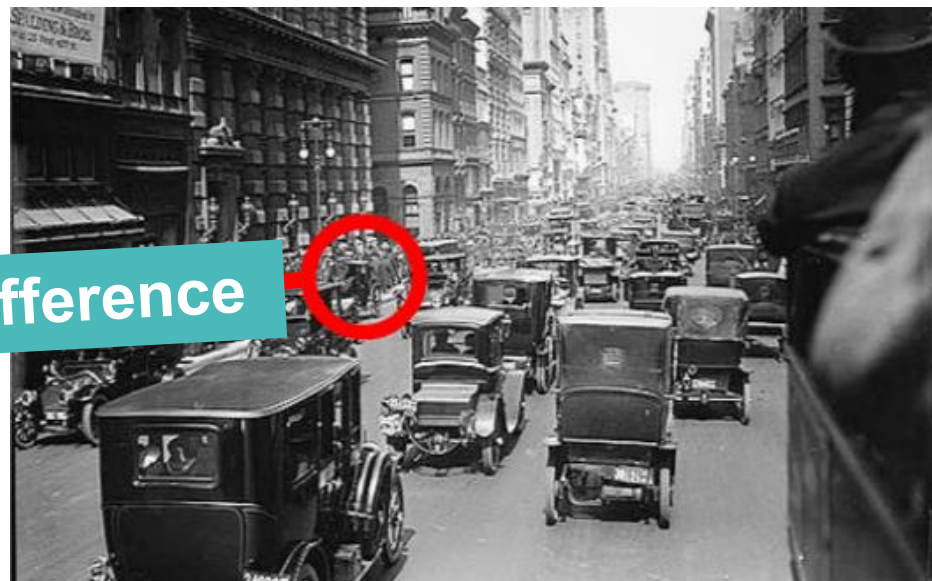


Disruptive Innovation is not new...

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13 years difference



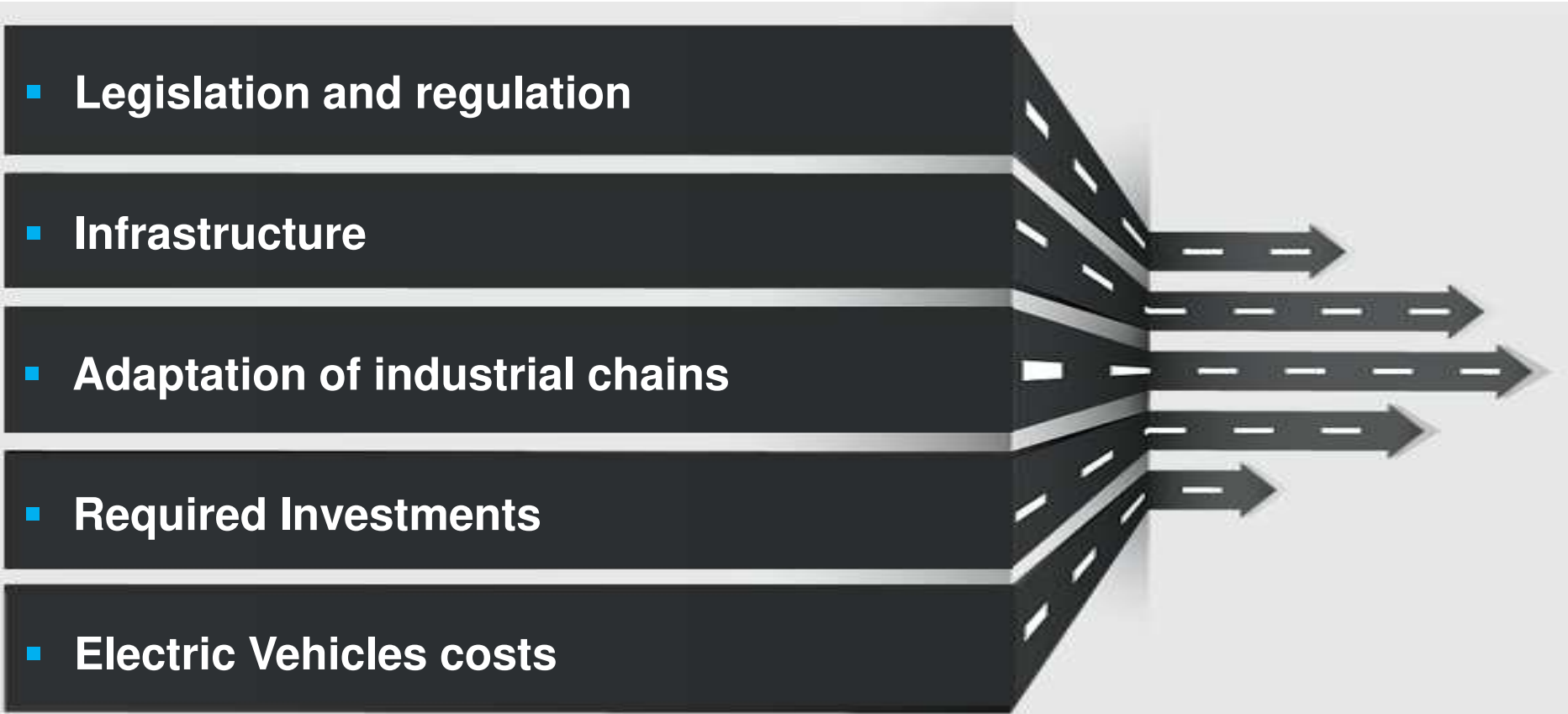
Only one car

NY City Easter Parade 1900

Only one horse

NY City Easter Parade 1913

The pace of e-Mobility adoption depend on advances in several dimensions.

- Legislation and regulation
 - Infrastructure
 - Adaptation of industrial chains
 - Required Investments
 - Electric Vehicles costs
- 

Siemens has an holistic view of e-mobility from vehicles to energy supply solutions

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Product



Productive process

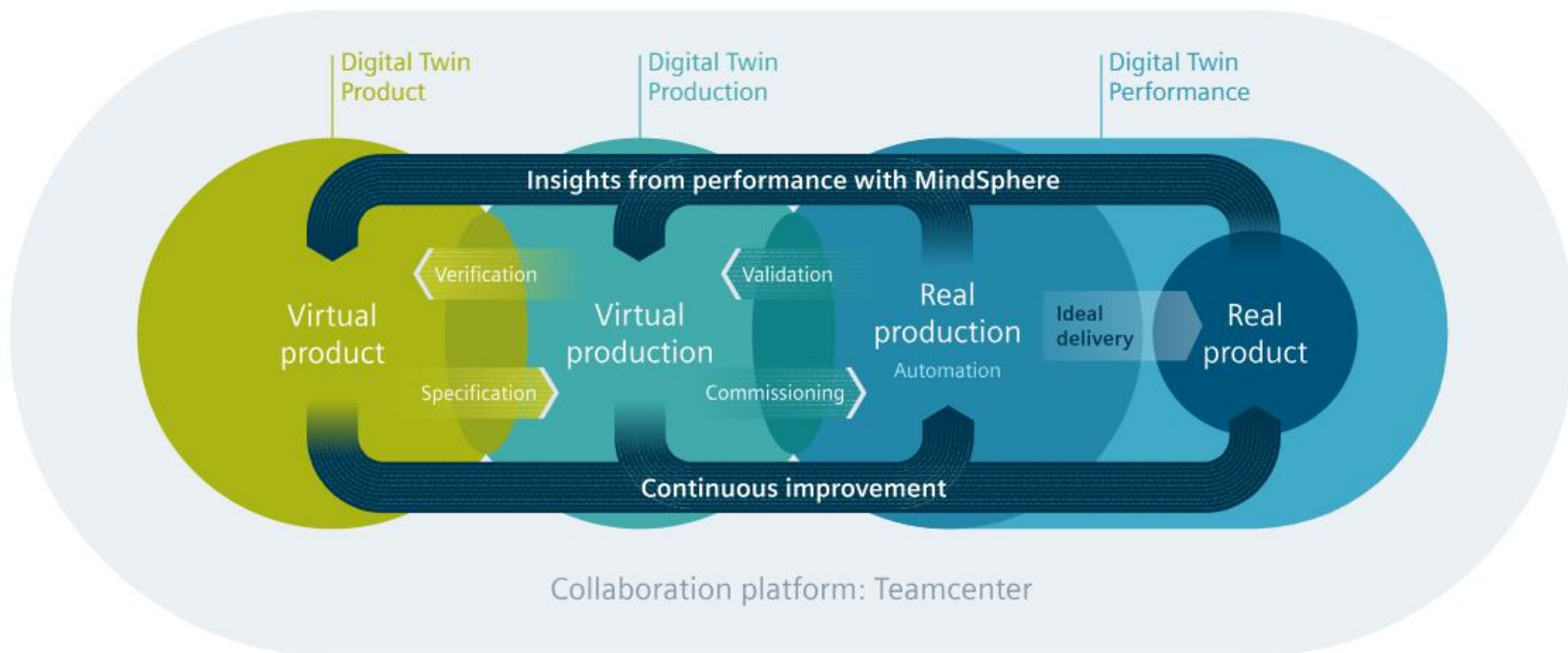


E-mobility infrastructure



Energy generation and distribution

Digital Twins make e-car production more efficient



The all digital electric city car

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UNITI – SWEDEN

- Optimized development of the new car thanks to its digital twin
- Simulation and optimization of design and physical behavior in a complete virtual environment
- Production planning with Simcenter and Tecnomatix platforms

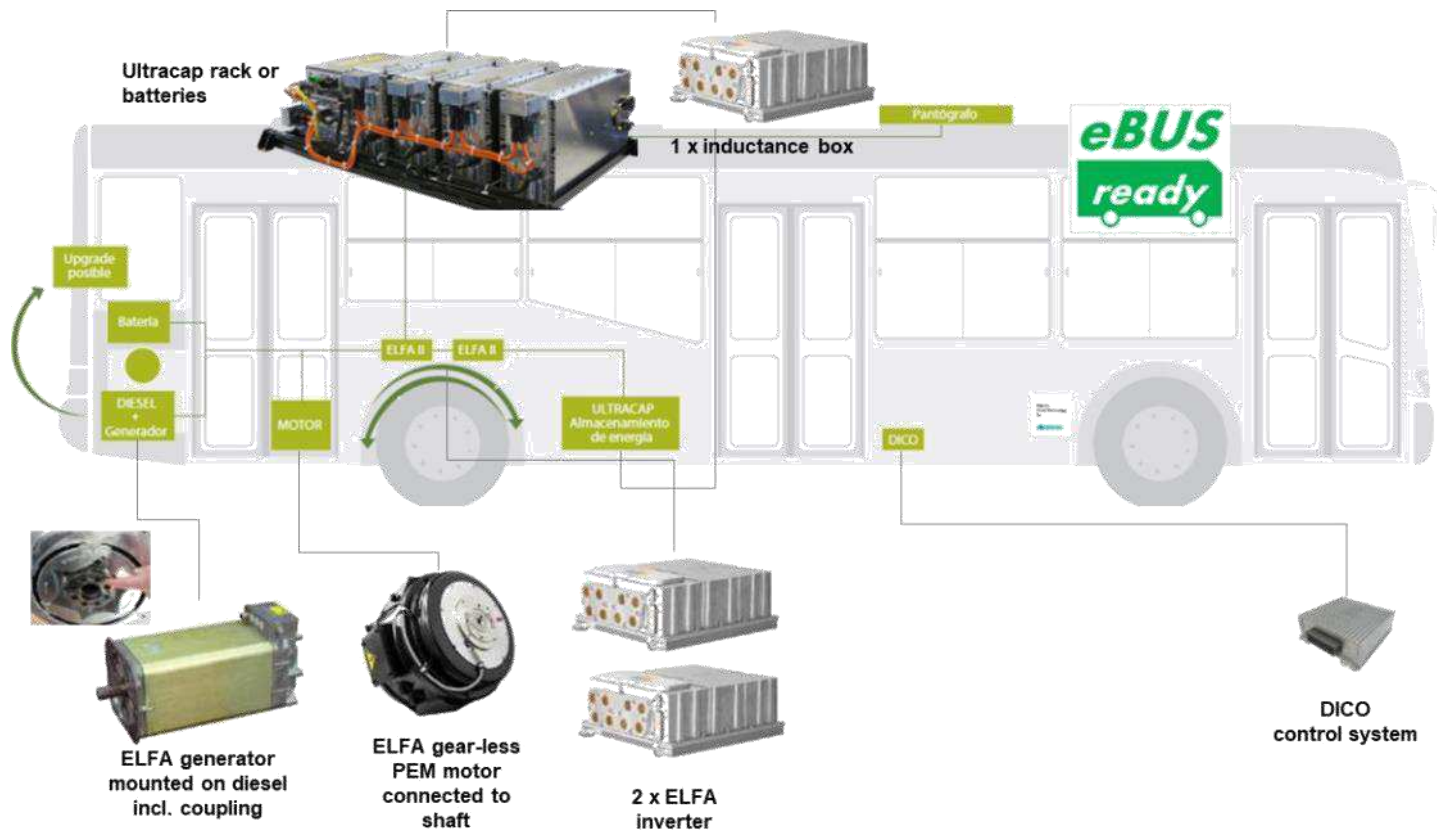
“THE REASON WE WANTED TO GO WITH SIEMENS ... IS THAT WHOLE DIGITAL BACK END [DIGITAL TWIN, PRODUCTION TWIN] THAT SIEMENS HAS IS ALSO CONNECTED TO THE ENERGY GRID GLOBALLY, AND ROADS AND CITIES GLOBALLY. IT’S NOT JUST THE DATA WE CREATE, IT’S THE NET DATA CREATED BY HUMANS THAT WE GET TO BE A PART OF.”

LEWIS HORNE
UNITI CEO

Core elements for electric vehicles such as batteries and motors supplied by technology companies

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Engenhosidade para a vida





E-Bus depot
incl. opportunity
charging



Gas stations &
truck stops



Enterprises
& retailers



Operating center



Highway transit
charging



City & town
street parking



Logistics depot
charging



Parking garage
& commercial real estate

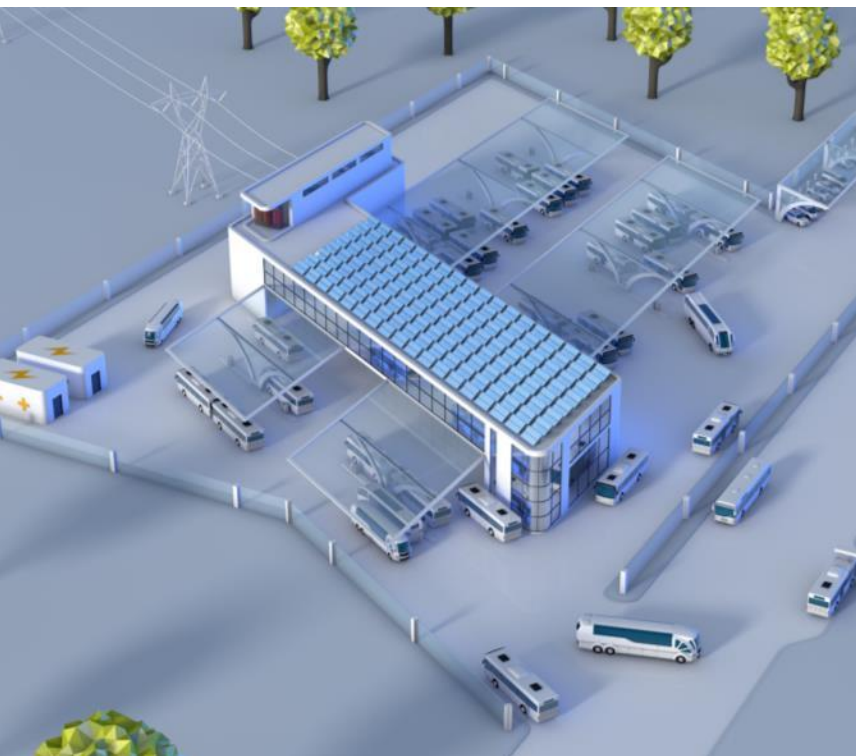


Residential home
& multi-home



An entire infrastructure to provide affordable, green and reliable energy will be necessary

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Power distribution



Flexible and modular grid access



Space optimized roof top or underground installed



MV & LV distribution on site "clean-air"



Busbar trunking system

Charging infrastructure



Charging poles – Plug-in or roof-mounted



Indoor pantograph



Fast charging stations outside

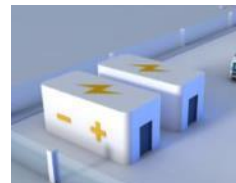


Integration of e-cars service fleet

Distributed Energy Systems and services



Renewable integration & micro-grid



Modular storage & second life



Monitoring & control SW



Consulting, operations & managed services



**Siemens helps combining the
Automotive and Electric
Energy worlds to innovate in e-
Mobility**

e-Mobility

Connecting the Automotive and Electric Energy worlds

Caio Klasing Pandolfi