The EV Charging Company

Liikenteen kasvuohjelma
LVM 28.9.2017

Elias Pöyry, CBO
Agenda

I. Introduction to Virta

II. Industry overview

III. Virta’s solution to market needs
Our story

We empower our customers to support electric vehicles and renewable energy.

We believe in an open world where anyone can contribute.

As the innovation leader we push the industry forward.

Established

2013

Offices

Helsinki
Berlin
Stockholm
Key figures

1 300 Charging points connected to Virta platforms

53 000 Charging points connected through roaming

48 B2B customers

18 Energy companies as owners
We are a top European player

Our services are being used in 9 countries and 70 cities around Europe.

We are the market leader in Switzerland, Finland and Iceland.

- [ ] Virta services in use
- [ ] Connections through roaming
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EV’s will take over the market

To support the growth we need charging infra.

Source: IEA Global EV Outlook 2017
Demand for charging grows on par with EV’s

All EV’s require public and private charging.

Source: IEA Global EV Outlook 2017
EV’s are big batteries on wheels

The vast majority of future energy storage capacity will have four wheels.

Source: IEA Electricity well below 2 degrees: from challenges to opportunities 2017
The automotive industry is in turmoil

The split between OPEX and CAPEX of a vehicle will change drastically.

<table>
<thead>
<tr>
<th></th>
<th>Traditional vehicle</th>
<th>Electric vehicle</th>
<th>“Vehicles”</th>
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<tbody>
<tr>
<td>VEHICLE</td>
<td>20%</td>
<td>80%</td>
<td>50%</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>80%</td>
<td></td>
<td>50% DIGITAL SERVICES (INCL ENERGY)</td>
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<td>ENERGY</td>
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"Vehicles" indicates a shift from 80% VEHICLE to 50% VEHICLE, reflecting the transition from traditional vehicles to electric vehicles.
Automotive and power industries will converge

Automotive Industry
Transition to Automation, Servitization, Electrification

Power Industry
Transition to Distributed, Integrated, Renewable

Future sustainable transport
Mobility and energy as an embedded ecosystem

Two disrupting industries reinforcing each other
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Virta EV charging platform

Our services work separately or seamlessly together to support different business models.
Virta Home

→ The most advanced home charging service

→ Optimizes charging based on electricity prices

→ Enables charging point sharing and automatic reporting
Virta Bundle

→ Smart charging devices with a management system

→ Access management and automatic billing

→ Dynamic load management to protect electricity grids
Virta Mobility

- Frontend to help EV drivers find charging stations and charge
- White-label solutions customized to local needs
- CRM to manage customer accounts
Virta Operator

→ Backend to connect and manage charging infra

→ Compatible with a large number of charging device manufacturers

→ Adapts to a variety of business models
→ Demand response for EV’s with various signals, eg. grid frequency or electricity market price

→ Energy storage by aggregating EV’s with V2G bidirectional charging and industrial scale energy storages
Case Bus Charging

→ Helsinki City Transport and Turku Energia have used Virta Operator to manage and control electric bus charging since 2017

→ The service is crucial in maintaining reliability of the bus routes as it brings visibility to performance and potential problems

→ In addition Turku Energia uses the same system to operate an EV charging network
We charge.

Elias Pöyry
CBO
elias.poyry@virta.global
www.virta.global