



Aalto University
School of Electrical
Engineering

Pätkklsähk6

Case study

E7830 Value network Design for Internet

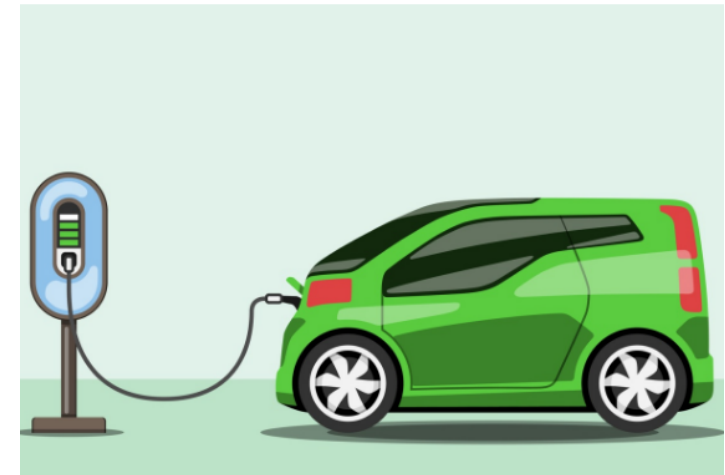
Juuso Jahnukainen
Jaiju Joseph
Matvej Yli-Olli
Joonas Akseli Linkola
Aleksi Kivini

Case description

Parkkisähkö is a Finnish company offering electric car charging services. They are in a business field that is still quite small in Finland but might face big changes in the future. These changes are heavily dependent on the uncertainties and trends to come. Research question: How to scale up the business for electric vehicle charging stations in Finland?

Scope and timeframe

- Governmental Policies and their effects
- The scope of this case study is the next 5 years.



Trends

1. Environmental: EU Climate Action

- Paris Climate Agreement implementation
- 20% of EU's budget till 2020 to be spent on climate action

2. Social: Urbanisation

- 84.5% of population already in urban areas
- Projected to increase at the rate of 0.45%
- Reduction in car ownership as people move to cities

Key market uncertainties

1. Political: Governmental Policies

- Whether the government subsidizes EVs or not.
- Whether the government builds charging infrastructure or not.
- Whether the government provides incentives (Access to bus lanes, free parking etc) or not

2. Technological: Battery/Charging Technology

- Will there be a breakthrough in battery technology?
- Will there be a breakthrough in charging technology?

3. Social: Ownership Mentality

- Will people prefer using public transport/car pooling in the future?
- Will people become more environmentally conscious?
- Will MAAS become popular?

Scenarios



Aalto University
School of Electrical
Engineering

Government driven scenario

- Subsidies for EV owners: Acquiring or charging EV
- No further subsidies for public transport fees
- No major breakthrough in battery technology or charging speed

EV Boom

- Major subsidies for EV owners
- Major breakthrough in battery technologies
- No further subsidies for public transport
- High ownership mentality in the charging system

Status quo in the battery technology

Technical breakthrough in battery technology

Service provider driven

- No major subsidies for EV owners
- No major breakthrough in battery technology or charging speed

Technology driven scenario

- Major breakthrough in battery technologies
- No major subsidies for EV owners
- Service provider has difficulties in utilising the new battery / charging technology

Subsidies in EV taxes

No subsidies in tax

Focus

Government driven scenario

- Subsidies for electric vehicles for private owners
 - Charging, taxation
 - Vehicle tax consists of a base tax and a tax on driving power.
- No further public transportation subsidies
- No major breakthroughs related to charging speed or battery capacity
 - Parkkisähkö's current strategy as "slow charging" service provider.
- EV penetration rate grows
 - Company customers focus on leasing EV vehicles.
 - Private owners get subsidies
- Best possible scenario for the company
 - Slow changes, manageable growth rate.

Service provider driven scenario

- No major subsidies for EV owners
 - Owning / driving an EV not financially supported
- No major breakthrough in battery technology or charging speed.
- -> Slow growth in the EV market
- Parkkisähkö's market situation at the moment.

Recommendations

Parkkisähkö should outsource production.

Concentration on lobbying on behalf of public charging spots, i.e, a deal between Espoo & Parkkisähkö.

Prepare for the new regulations set by Government, cities and municipalities.

Cooperation with a car manufacturer for campaigns.

Concentrate on design to improve the user experience and brand credibility.

Opinion affection on behalf of EV-culture, aiming to market the idea for individual customers.

Implication

Cheaper gadget, less assets to lose.

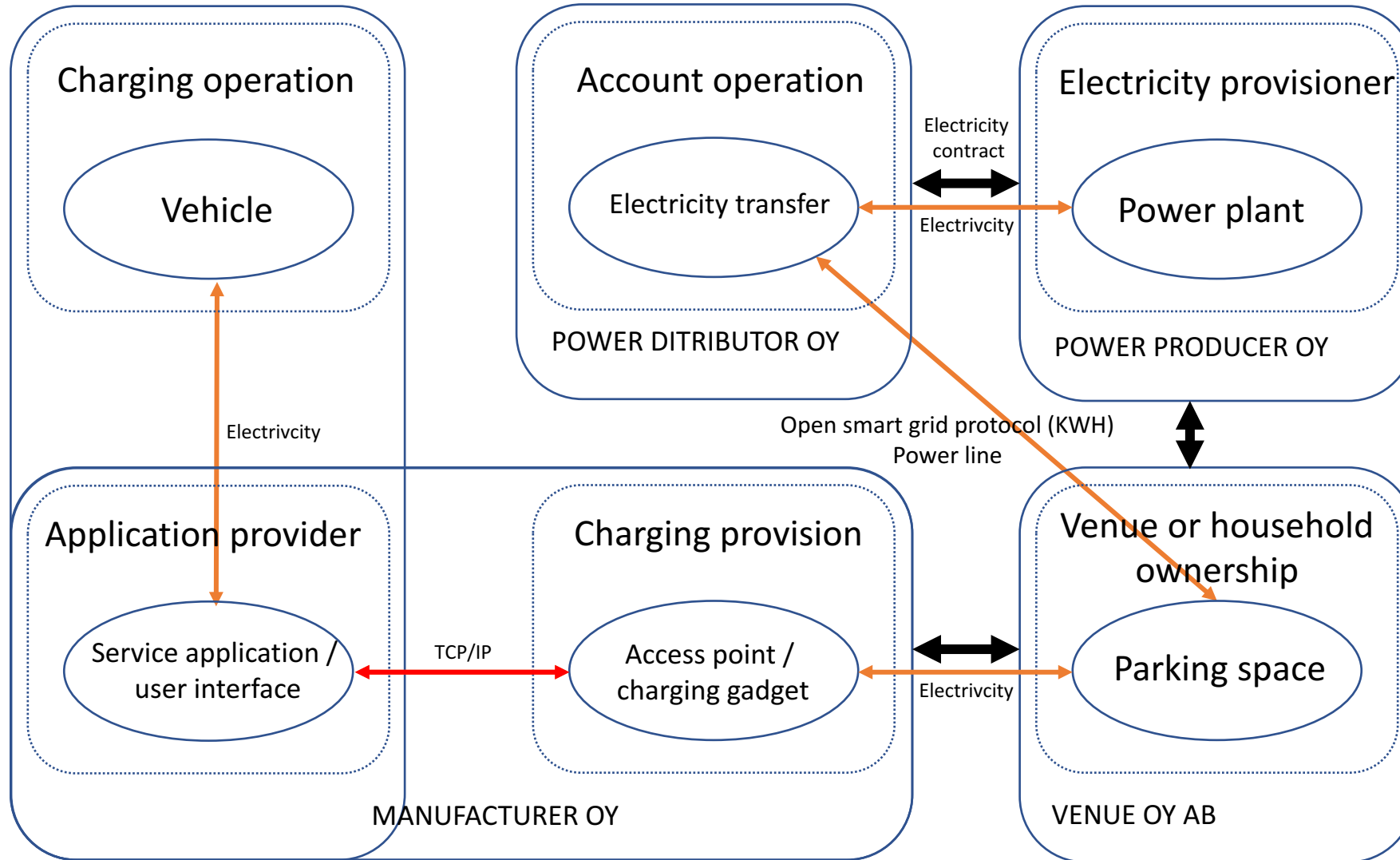
Spur the EV market & charging business.

Faster reactions for changes in the market.

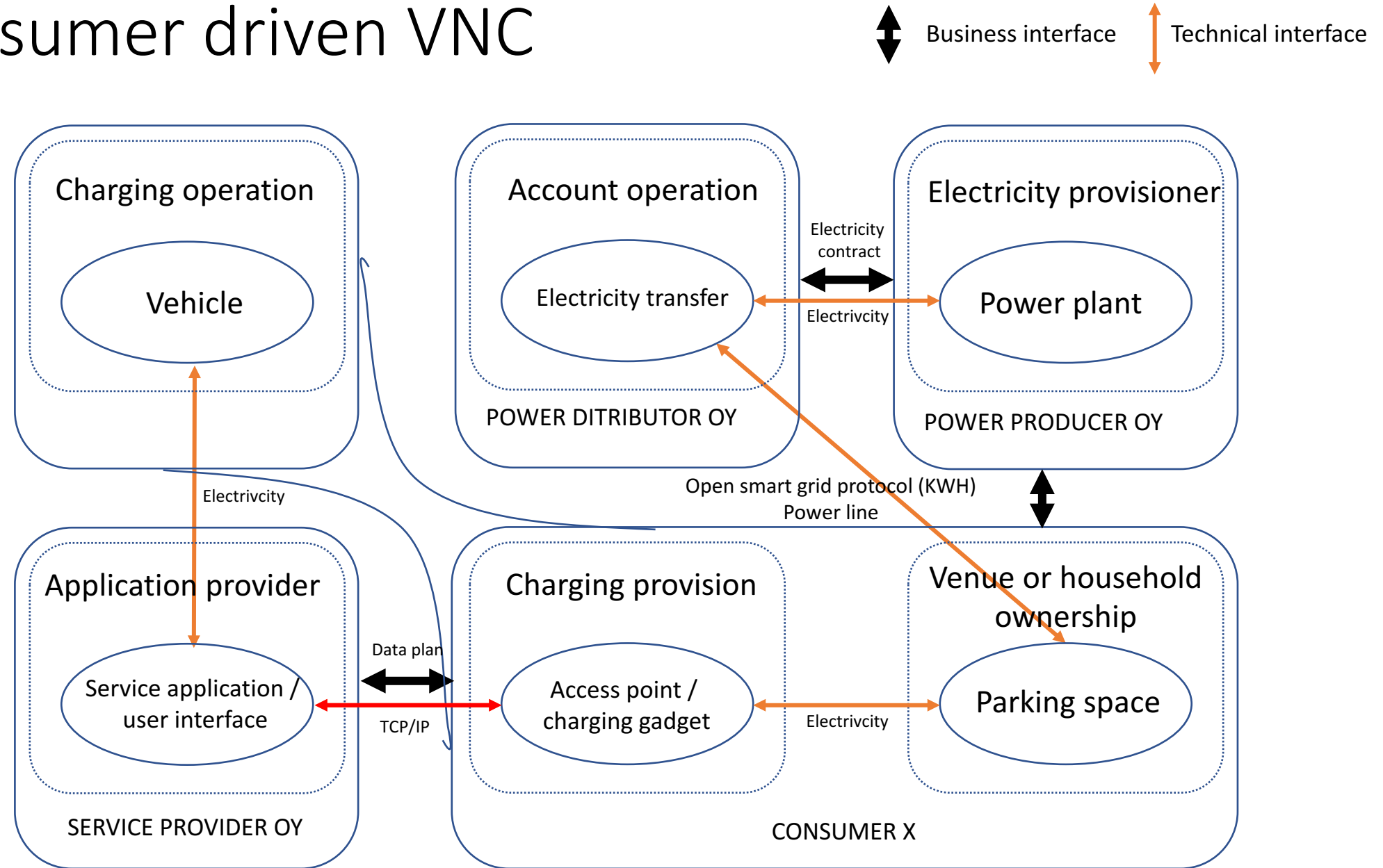
Gain influencer users to spread the positive word of mouth.

Value network configuration

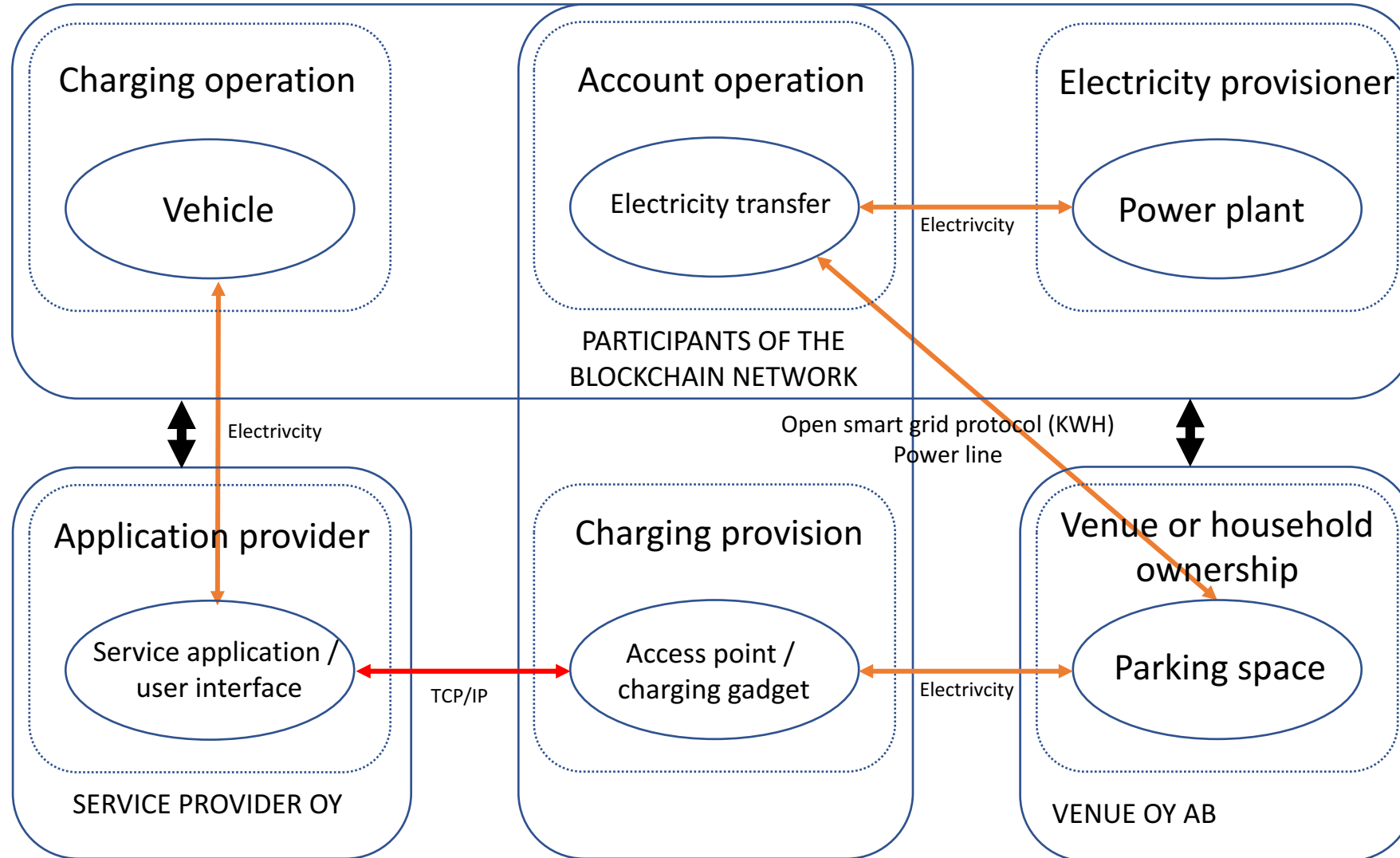
Manufacturer driven VNC



Consumer driven VNC



Consumer driven VNC Blockchain variation



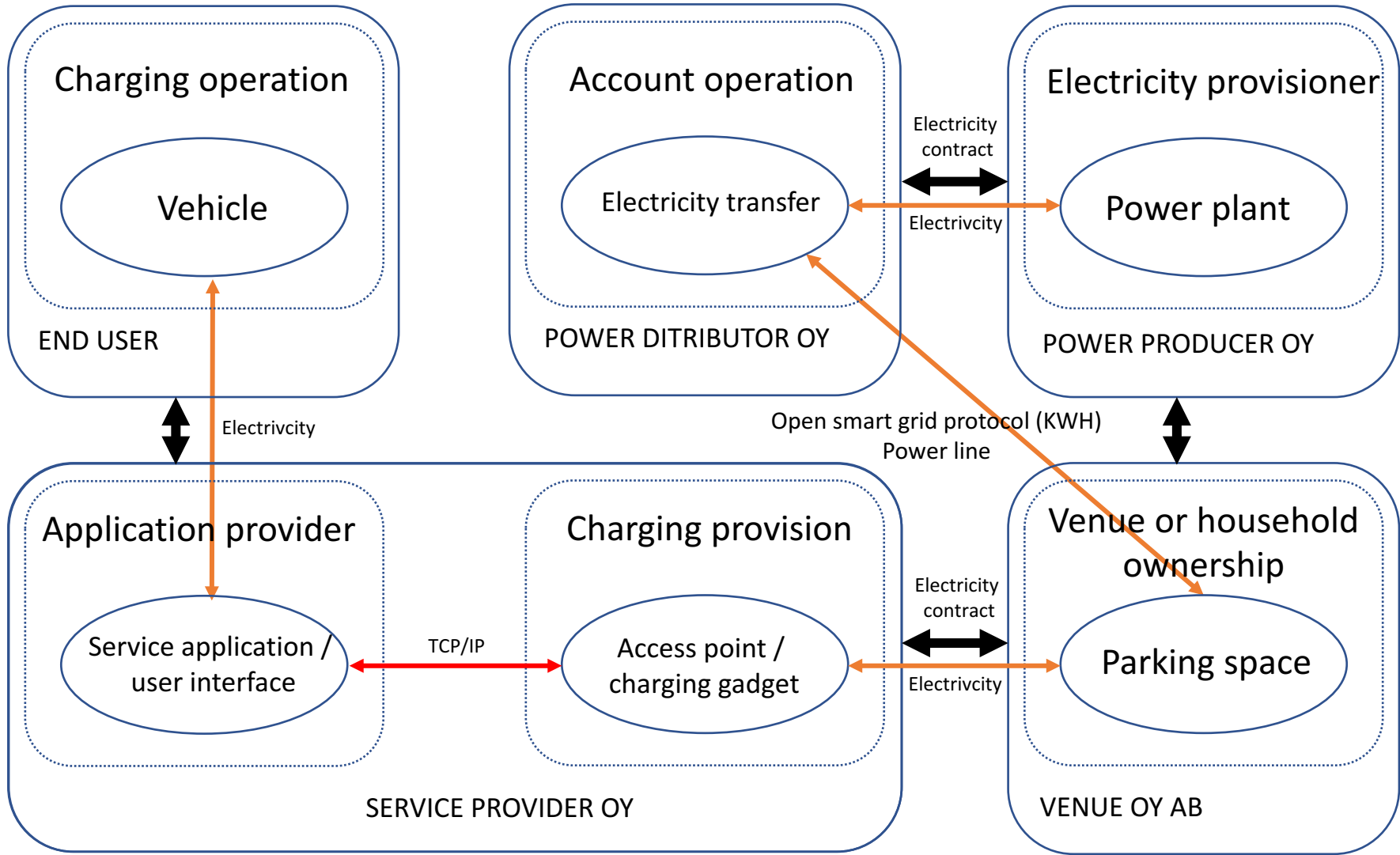
Proposed VNC: Service Provider / Government driven VNC












Business interface

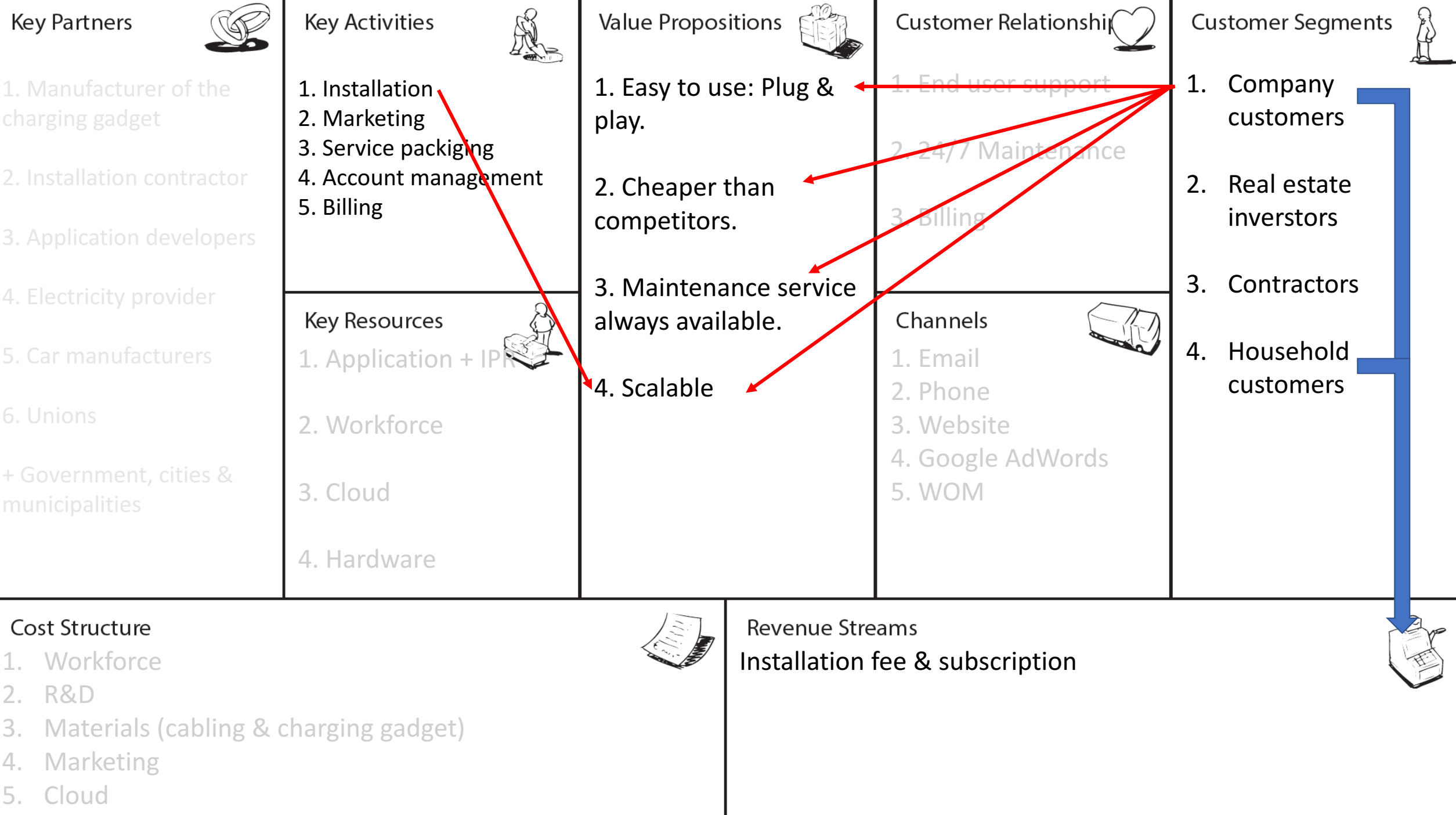


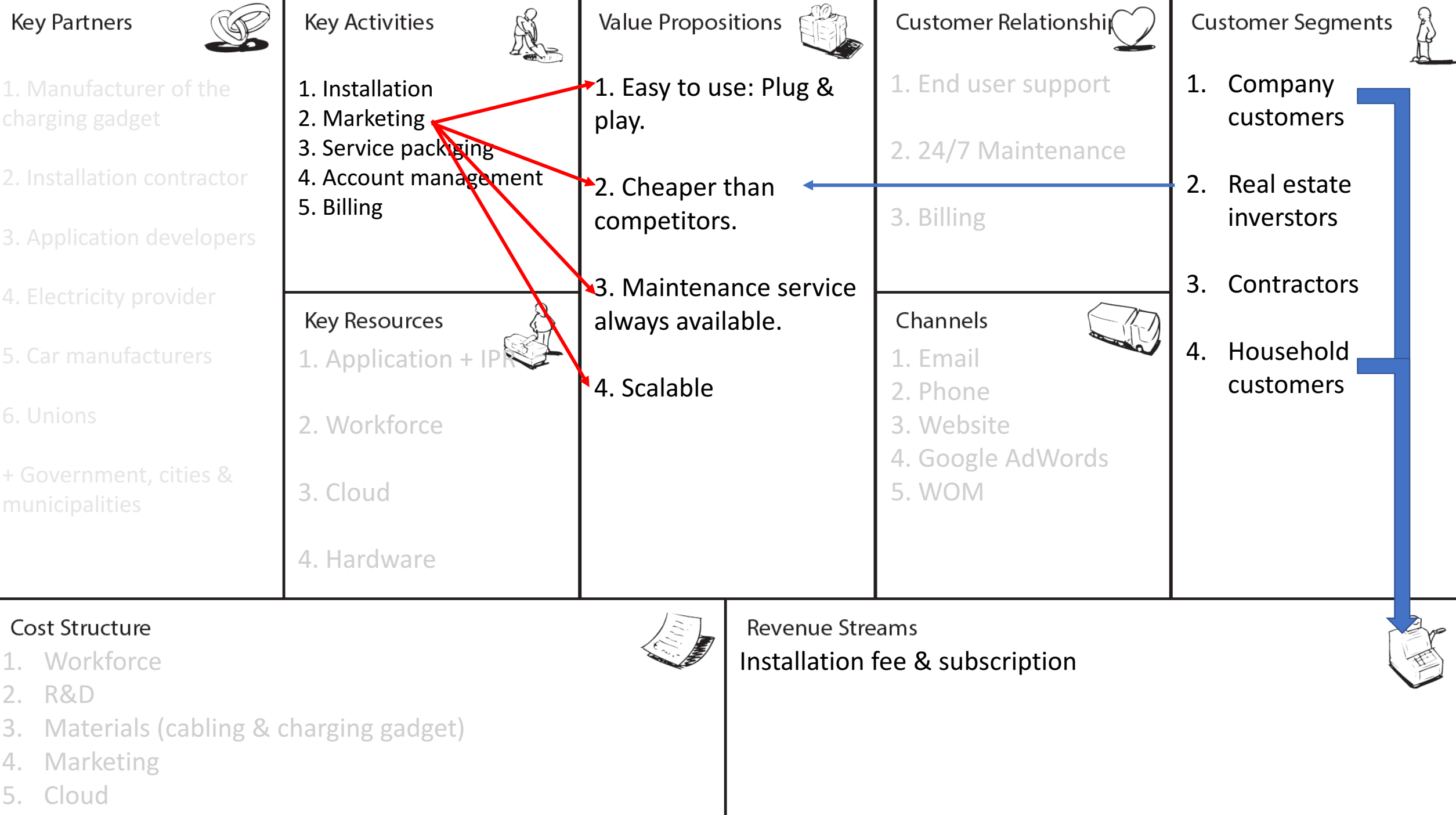
Technical interface

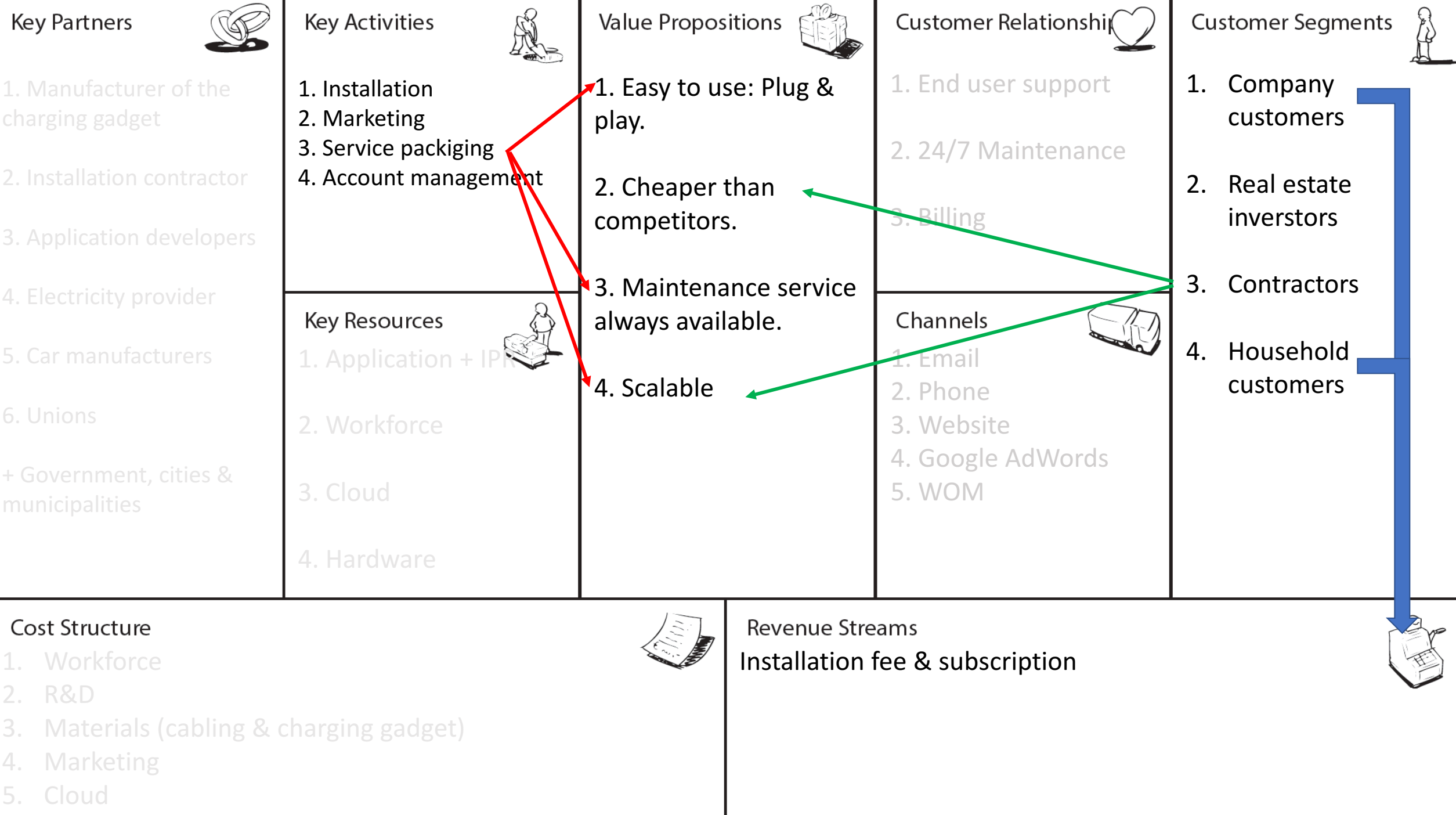


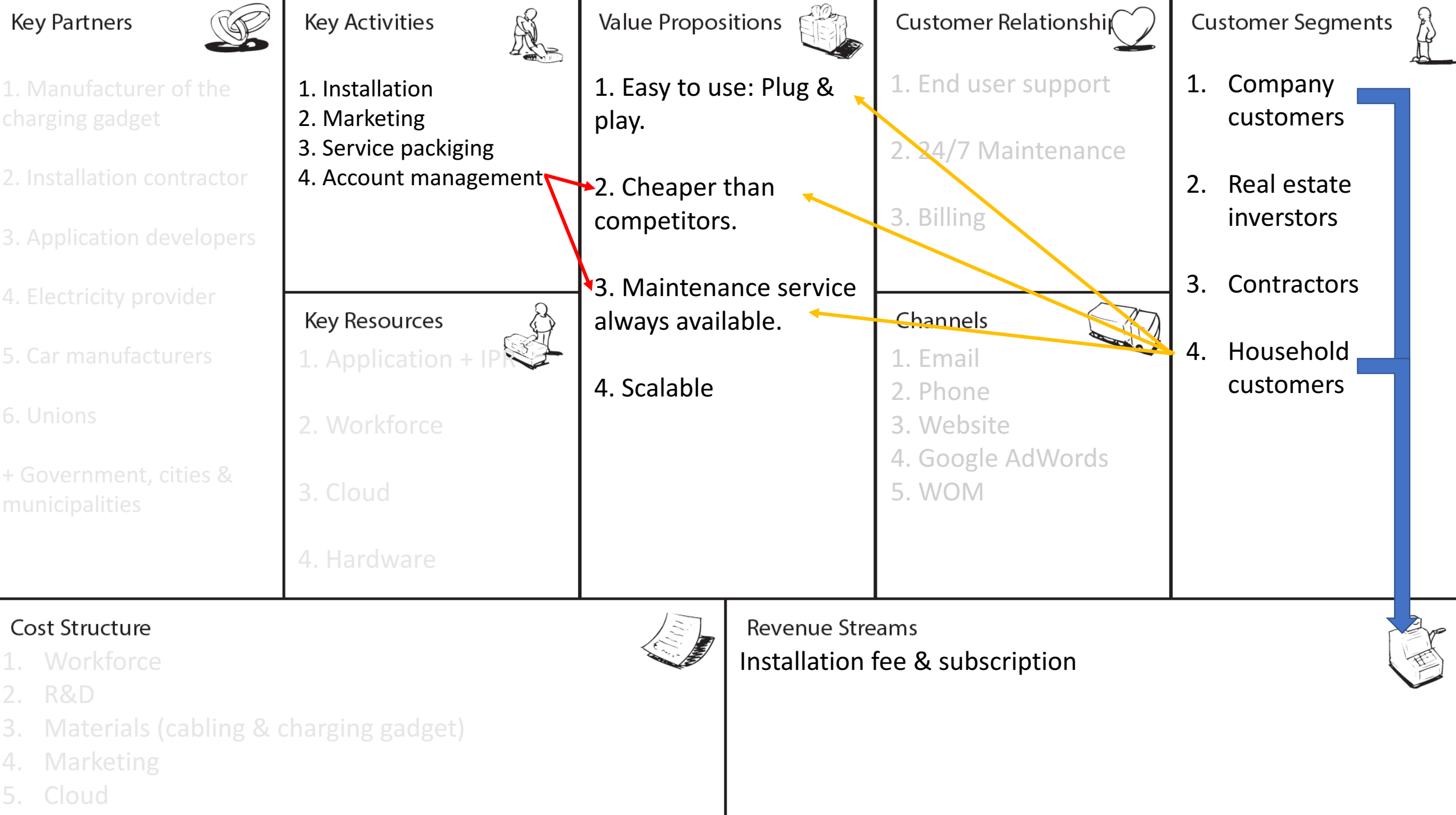
Business model canvas










<div>Key Partners</div> <div>1. Manufacturer of the charging gadget</div> <div>2. Installation contractor</div> <div>3. Application developers</div> <div>4. Electricity provider</div> <div>5. Car manufacturers</div> <div>6. Unions</div> <div>+ Government, cities & municipalities</div>	<div>Key Activities</div> <div>1. Installation</div> <div>2. Marketing</div> <div>3. Service packaging</div> <div>4. Account management</div> <div>5. Billing</div> <div>Key Resources</div> <div>1. Application + IPR</div> <div>2. Workforce</div> <div>3. Cloud</div> <div>4. Hardware</div>	<div>Value Propositions</div> <div>1. Easy to use: Plug & play.</div> <div>2. Cheaper than competitors.</div> <div>3. Maintenance service always available.</div> <div>4. Scalable</div>	<div>Customer Relationship</div> <div>1. End user support</div> <div>2. 24/7 Maintenance</div> <div>3. Billing</div> <div>Channels</div> <div>1. Email</div> <div>2. Phone</div> <div>3. Website</div> <div>4. Google AdWords</div> <div>5. WOM</div>	<div>Customer Segments</div> <div>1. Company customers</div> <div>2. Real estate inverstors</div> <div>3. Contractors</div> <div>4. Household customers</div>
<div>Cost Structure</div> <div>1. Workforce</div> <div>2. R&D</div> <div>3. Materials (cabling & charging gadget)</div> <div>4. Marketing</div> <div>5. Cloud</div>			<div>Revenue Streams</div> <div>Installation fee & subscription</div>	












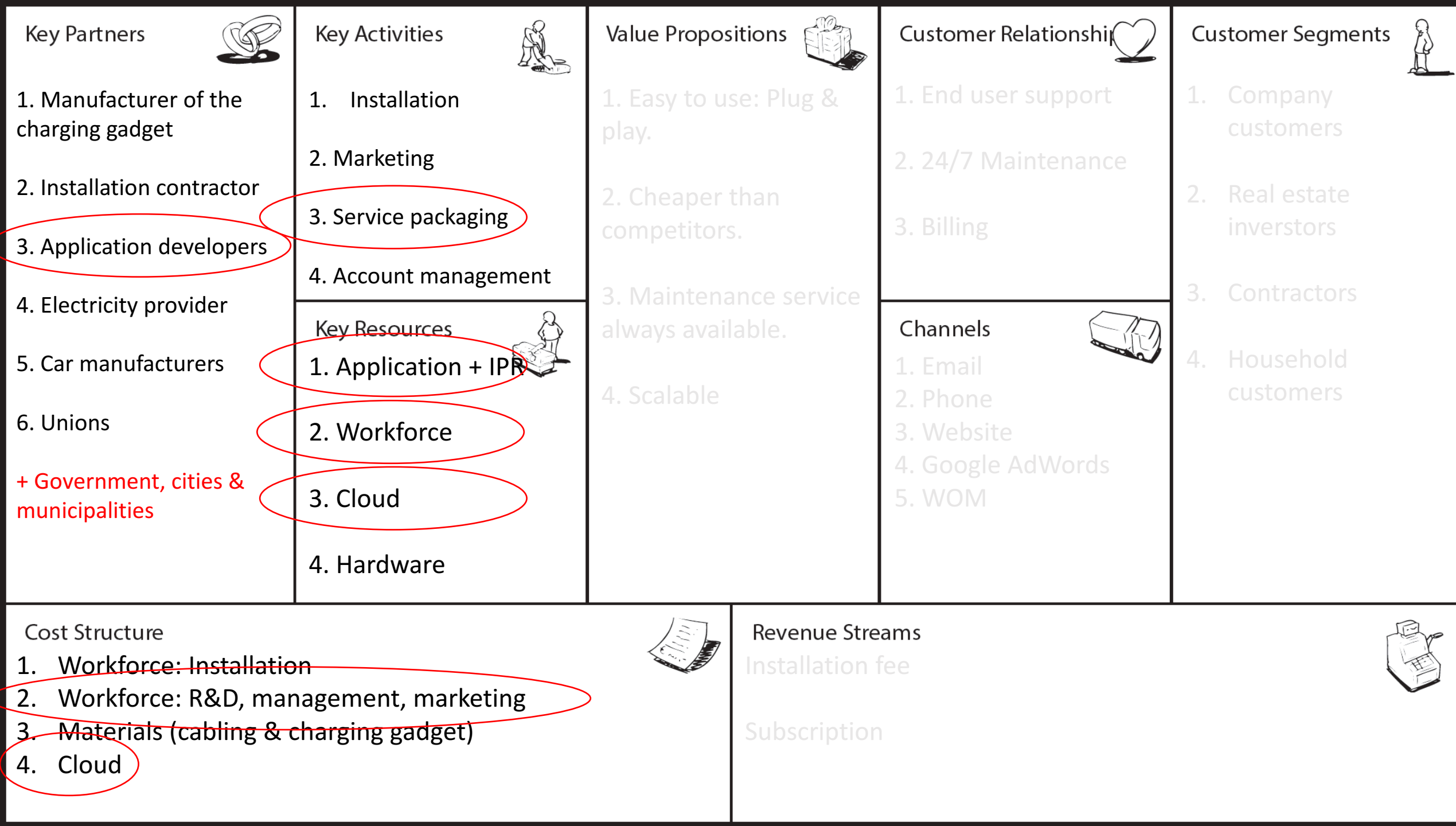


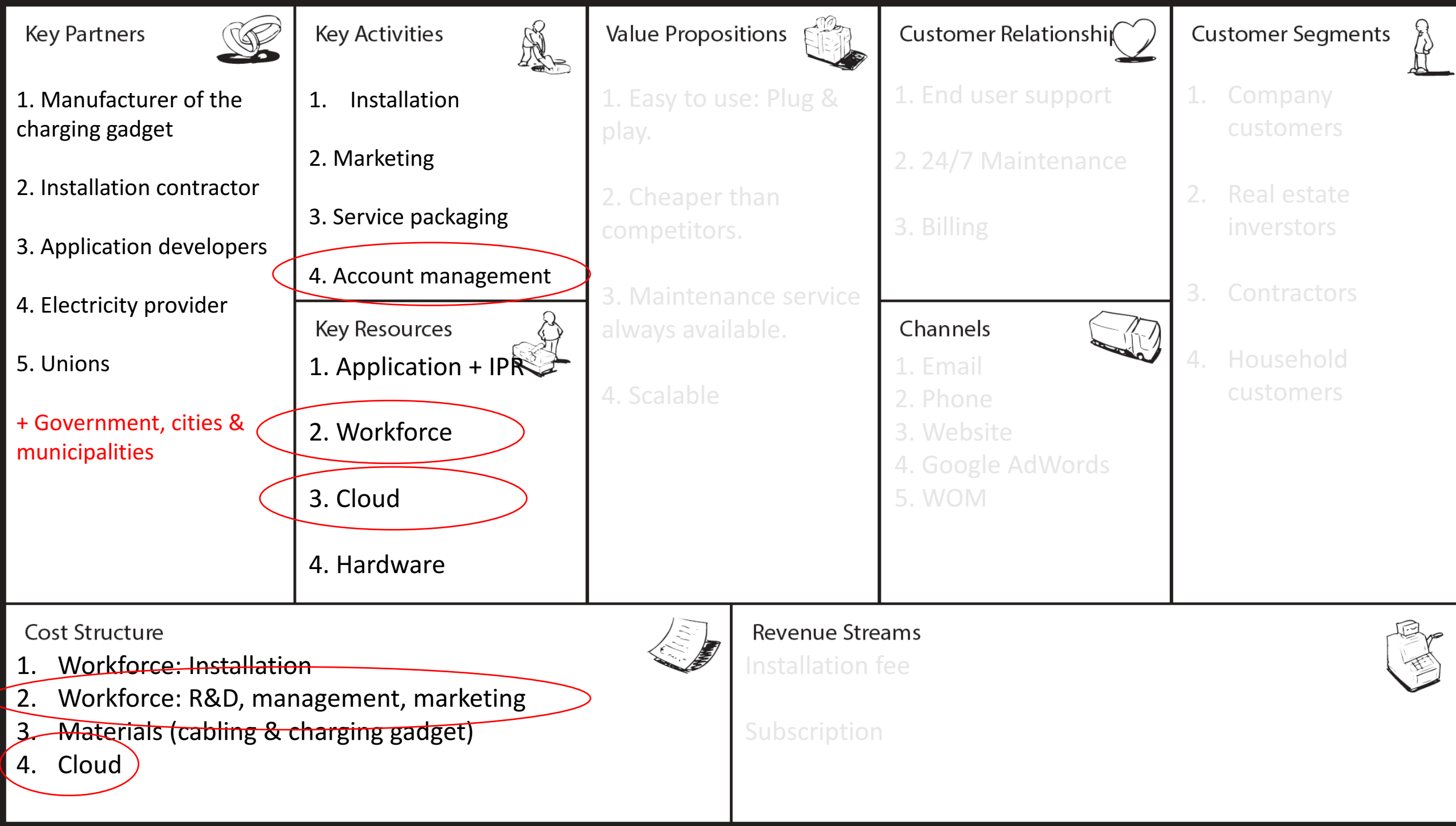













<p>Key Partners </p> <p>1. Manufacturer of the charging gadget</p> <p>2. Installation contractor</p> <p>3. Application developers</p> <p>4. Electricity provider</p> <p>5. Car manufacturers</p> <p>6. Unions</p> <p>+ Government, cities & municipalities</p>	<p>Key Activities </p> <p>1. Installation</p> <p>2. Marketing</p> <p>3. Service packaging</p> <p>4. Account management</p> <p>Key Resources </p> <p>1. Application + IPR</p> <p>2. Workforce</p> <p>3. Cloud</p> <p>4. Hardware</p>	<p>Value Propositions </p> <p>1. Easy to use: Plug & play.</p> <p>2. Cheaper than competitors.</p> <p>3. Maintenance service always available.</p> <p>4. Scalable</p>	<p>Customer Relationship </p> <p>1. End user support</p> <p>2. 24/7 Maintenance</p> <p>3. Billing</p> <p>Channels </p> <p>1. Email</p> <p>2. Phone</p> <p>3. Website</p> <p>4. Google AdWords</p> <p>5. WOM</p>	<p>Customer Segments </p> <p>1. Company customers</p> <p>2. Real estate investors</p> <p>3. Contractors</p> <p>4. Household customers</p>
<p>Cost Structure </p> <p>1. Workforce: Installation</p> <p>2. Workforce: R&D, management, marketing</p> <p>3. Materials (cabling & charging gadget)</p> <p>4. Cloud</p>		<p>Revenue Streams </p> <p>Installation fee</p> <p>Subscription</p>		

<div>Key Partners</div> <div>1. Manufacturer of the charging gadget</div> <div>2. Installation contractor</div> <div>3. Application developers</div> <div>4. Electricity provider</div> <div>5. Car manufacturers</div> <div>6. Unions</div> <div>+ Government, cities & municipalities</div>	<div>Key Activities</div> <div>1. Installation</div> <div>2. Marketing</div> <div>3. Service packaging</div> <div>4. Account management</div> <div>Key Resources</div> <div>1. Application + IPR</div> <div>2. Workforce</div> <div>3. Cloud</div> <div>4. Hardware</div>	<div>Value Propositions</div> <div>1. Easy to use: Plug & play.</div> <div>2. Cheaper than competitors.</div> <div>3. Maintenance service always available.</div> <div>4. Scalable</div>	<div>Customer Relationship</div> <div>1. End user support</div> <div>2. 24/7 Maintenance</div> <div>3. Billing</div> <div>Channels</div> <div>1. Email</div> <div>2. Phone</div> <div>3. Website</div> <div>4. Google AdWords</div> <div>5. WOM</div>	<div>Customer Segments</div> <div>1. Company customers</div> <div>2. Real estate inverstors</div> <div>3. Contractors</div> <div>4. Household customers</div>
<div>Cost Structure</div> <div>1. Workforce: Installation</div> <div>2. Workforce: R&D, management, marketing</div> <div>3. Materials (cabling & charging gadget)</div> <div>4. Cloud</div>		<div>Revenue Streams</div> <div>Installation fee</div> <div>Subscription</div>		





<p>Key Partners </p> <ol style="list-style-type: none"> 1. Manufacturer of the charging gadget 2. Installation contractor 3. Application developers 4. Electricity provider 5. Car manufacturers 6. Unions <p>+ Government, cities & municipalities</p>	<p>Key Activities </p> <ol style="list-style-type: none"> 1. Installation 2. Marketing 3. Service packaging 4. Account management <p>Key Resources </p> <ol style="list-style-type: none"> 1. Application + IPR 2. Workforce 3. Cloud 4. Hardware 	<p>Value Propositions </p> <ol style="list-style-type: none"> 1. Easy to use: Plug & play. 2. Cheaper than competitors. 3. Maintenance service always available. 4. Scalable 	<p>Customer Relationship </p> <ol style="list-style-type: none"> 1. End user support 2. 24/7 Maintenance 3. Billing <p>Channels </p> <ol style="list-style-type: none"> 1. Email 2. Phone 3. Website 4. Google AdWords 5. WOM 	<p>Customer Segments </p> <ol style="list-style-type: none"> 1. Company customers 2. Real estate inverstors 3. Contractors 4. Household customers
<p>Cost Structure </p> <ol style="list-style-type: none"> 1. Workforce: Installation 2. Workforce: R&D, management, marketing 3. Materials (cabling & charging gadget) 4. Cloud 		<p>Revenue Streams </p> <p>Installation fee</p> <p>Subscription</p>		

Porter's five forces

Competitive Rivalry: Number and strength of your competitors.

- Parkkisähkö has a few competitors, but currently there are no industry-winning competitor. However, this can change due to a technical breakthrough. Also, the market is such that customer relationships are long and the level of commitment high. Most of Parkkisähkö's competitors are already outside Finland, which indicates a bigger market potential.

Supplier Power: How easy it is for your suppliers to increase their prices?

- Currently Parkkisähkö is doing a lot of its business in-house. Hence there are a good selection of companies, which could, for example, produce the charger gadget or software. However, as Parkkisähkö is acting in a small market, the quantities are effectively small and results in higher price per unit.

Buyer Power: How easy it is for buyers to drive your prices down?

- As the value proposition indicates, Parkkisähkö has a competitive advantage in price. The amount of potential customers is limited accordingly to the amount of EV owners, and the potential customers are well aware of the selection in the market. However, customers value the competitive pricing of Parkkisähkö.

Threat of Substitution: Likelihood of the customers finding an other option?

- If there was a technological breakthrough in the charging technology, the customers might find a cheaper solution. For example, liquid battery fuel exchange.

Threat of New Entry: How easy is it to get a foothold in your industry or market?

- It is difficult to enter the market, except if the company has a clear technological competitive advantage.

Recommendations

Parkkisähkö should outsource production.

Concentration on lobbying on behalf of public charging spots, i.e, a deal between Espoo & Parkkisähkö.

Prepare for the new regulations set by Government, cities and municipalities.

Cooperation with a car manufacturer for campaigns.

Concentrate on design to improve the user experience and brand credibility.

Opinion affection on behalf of EV-culture, aiming to market the idea for individual customers.

Implication

Cheaper gadget, less assets to lose.

Spur the EV market & charging business.

Faster reactions for changes in the market.

Gain influencer users to spread the positive word of mouth.