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Group Sheet

Part 1: Introductions

Please introduce yourself and describe your role in your organization.

Part 2: Discussion

Let the Better Place team (or individual) do their pitch and place their requests. Afterwards, negotiate and reach an agreement.

Part 3: Decision Time and After Class

Once you think you have reached your decision, write and submit your strategy/decision together with your group number. What were the main issues and conflicts? (Less than 250 words) **DO NOT SHARE YOUR DECISION WITH OTHERS.**

Part 4: Next Class

We will debrief and announce winners.

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Mr. (Mrs.) Marcos (Sarah) Santos - Better Place VP of Operations

Preliminary Instructions:

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Details of your role (share this with Taylor Smart):

You are **Mr. (Mrs.) Marcos (Sarah) Santos,** a recent INSEAD graduate (MBA '06D) hired to be part of the team responsible for coordinating the expansion of Better Place into new markets. More specifically, you are responsible for designing, analyzing, and developing operations strategies for potential new markets.

Currently, you are considering entering Carpania, one of the richest countries in the world. The Carpanians love their vehicles and the majority of Carpanians own cars and use them in their daily commute. In addition, Carpania has a large auto-industry and cars correspond to almost 15% of the country's exports.

Although Taylor Smart, your colleague, thinks that Carpania is the ideal new market for Better Place, you have a few concerns. Namely,

- Range anxiety: Carpanians love driving their cars and use them in their daily commute. The average Carpanian drives 60km/day, and 80% of Carpanians drive between 40km/day and 120km/day. You are afraid that electric cars will not be adopted since batteries have a small range (current range is about 150km max).

- Initial target market segment: although Better Place has focused on personally owned vehicles, another potential market are fleet vehicles (taxis, delivery vans, company vehicles, etc.). Although the B2B sales cycle is challenging, focusing on fleet vehicles could potentially allow Better Place to enter the Carpanian market in a calculated and controlled way, without needing partners other than Renault. The drawback is that you would not obtain the "exponential growth" expected by your investors. This could be a good alternative to establish a foot in the market, in case the other players are not swaying your way.

- More attractive markets: you have recently met with public officials in California, England, and Canada. All these markets seem amenable to the Better Place business proposition. In fact, the Californian government has promised substantial tax breaks for Better Place and you are in advanced talks with GM. Unless you are able to cut a deal with Carpanian public officials, automakers, and investors, the Carpanian market will be considerably unattractive.

Decision

Should you enter the Carpanian market? What will be your target market segment?

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Mrs. (Mr.) Taylor Smart - Better Place Business Developer

Preliminary Instructions:

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Details of your role (share this with Marcos (Sarah) Santos):

You are **Mrs. (Mr.) Taylor Smart,** a recent INSEAD graduate (MBA '08J) hired to be part of the team responsible for coordinating the expansion of Better Place into new markets.

More specifically, you are responsible for developing Better Place in Carpania, one of the richest countries in the world. The Carpanians love their vehicles and the majority of Carpanians own cars and use them in their daily commute. In addition, Carpania has a large auto-industry and cars correspond to almost 15% of the country's exports.

You need strategic partners and investors to join Better Place in Carpania. You also want to convince the government to provide tax incentives for re-charging and battery swapping stations. Currently, the cost of the Renault electric car Better Place uses is $17,000 (not including the battery) and the cost of the battery is about $10,000. Ideally, you would like **all of the following four outcomes**:

1. The government provides tax incentives for battery swap stations. The current cost of building a swap station and maintaining it for five years is $2 million, and you are requesting a $500,000 tax incentive from the government. This would effectively reduce the cost of setting-up a switching station to $1.5 million.

2. The government provides tax breaks for electric vehicles: this is critical for increasing adoption. With tax incentives, the consumer price of your current electric vehicle (only the car, since the battery is included in the subscription), manufactured by Renault, would go from $17,000 to $12,000. The average price of a new gas fueled car in the category targeted by Better Place is $15,000. A hybrid costs on average $20,000.

3. You receive investment from the Clean World Fund, allowing Better Place to install extra stations in Mulin, the largest city of Carpania. You already have 6 planed stations, and you estimate that 15 stations would be the tipping point to eliminate potential customer "range anxiety" in the greater Mulin area. In return for the investment, the Clean World Fund would receive equity in the Better Place operations in Carpania.

4. You establish a partnership with a large Carpanian auto-maker. This is a key part of the plan. If an automaker decides to produce a car that is compatible with Better Place batteries, and is willing to sell cars together with a Better Place battery subscription (as done with Renault in other markets), this would be a decisive argument to convince government officials to provide subsidies for switching stations. If this deal falls through, you could enter the Carpanian market with Renault vehicles, which might not be attractive to Carpanian consumers.

The partnership with a Carpanian automaker would be similar to the one that exists with Renault, and similar to the contracts that Wireless Service Providers have with mobile phone manufacturers. In order to encourage adoption of Better Place's electric vehicles, the initial cost of the car would be subsidized to match the cost of a typical internal combustion engine vehicle (or even potentially be cheaper), and customers would pay a subscription that defines a certain price per km. Thus, if the electric vehicle made by the automaker costs the consumer $17,000 (without the battery), then the

consumer would buy the vehicle from the automaker and lease the battery, paying a subscription per km driven (that also covers the costs of electricity use). The current cost for Better Place for sourcing and installing a battery is about $10,000, but this price is expected to go down over time.

Although the partnership with the Carpanian automaker is not crucial, you expect that it would lead to a 6% market share of the Carpanian car market in 4 years, instead of 2% without the partnership (given that the other outcomes occur).

In Carpania, the electricity cost of an electric vehicle is about $0.04/km. If the average cost for the consumer for an internal combustion vehicle is $0.10/km, Better Place would charge the consumer $0.09/km, making a gross profit of $0.05/km. If a consumer drives on average 60km/day for 330 days each year, that would correspond to about $1000/year/customer in gross profit. This value can increase as battery prices go down and renewable energy is used in the recharging stations.

Your Objective:

Your objective as a Business Developer is to maximize the number of partnerships, investment, and tax breaks for Better Place.

Evaluation

For you and Marcos (Sarah) Santos, at least 3 out of the 4 outcomes have to happen in order for the market entry to be considered successful. A secondary evaluation criterion is the number of battery swapping stations you are able to build.

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Mrs. (Mr.) Aditi (Arjun) Gupta - COO, Major Engines

Preliminary Instructions:

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Details of your role:

You are **Mrs. (Mr.) Aditi (Arjun) Gupta,** an INSEAD graduate (GEMBA '04) and the COO of Major Engines, the second largest auto-manufacturer in Carpania, one of the richest countries in the world. The Carpanians love their vehicles and the majority of Carpanians own cars and use them in their daily commute. In addition, Carpania has a large auto-industry and cars correspond to almost 15% of the country's exports. As a COO, you don't usually meet with small start-ups. However, you decided to make an exception since Taylor Smart (the Better Place business developer) is also an INSEAD alumnus. You think the partnership could be interesting, but might conflict with your current plans.

Major Engines has been a player in the hybrid vehicle market for the last 10 years, and has the best selling mid-size hybrid vehicle in Carpania. The average cost per kilometer for the owners of this car is $0.07/km and the vehicle is sold for $20,000.

You also have been coordinating a **secret project called the Project Omega**[1]: the first all-electric vehicle (EV) of Carpania. There are two challenges for this project that have been on your mind:

- Range Anxiety: Carpanians love driving their cars and use them in their daily commute. The average Carpanian drives 60km/day, and 80% of Carpanians drive between 40km/day and 120km/day. You are afraid that electric cars will not be adopted since batteries have a small range (current range is 150km max). In fact, Major Engines is considering marketing the Omega car as an extra car a household could own for intra-city daily commute. Thus, consumers might buy one car for their daily commute, and use a vehicle with a gas engine for longer trips. Completely recharging a battery takes several hours.

- Car and Battery costs: batteries are expensive and the one used in Project Omega would cost the consumer about $11,000. This puts the price of the Project Omega car at an estimated $27,000 (just the vehicle's price is $16,000 without the battery). However, for customers, the cost per kilometer for electric vehicles charged at home is estimated at $0.04/km.

- Consumer tax breaks for EVs: You have been lobbying for tax breaks for electric vehicles. You estimate that a $5000 tax subsidy will be decisive for a successful launch of the Project Omega car, since it will reduce the price of the vehicle to $22,000 – only 10% more expensive than the current hybrid vehicles in the market.

The project is already quite advanced (it could be introduced into the market in 2 years) and the costs necessary to launch this vehicle have already been budgeted. However, you might consider postponing the launch of Project Omega depending on oil prices and tech for combustion engines.

1 It's up to you to share some of this info or not.

More specifically, you have been chatting with **EcoInject**[2] (based in Mulin, Carpania) - a startup that has developed a new fuel injector technology that makes both regular and hybrid engines at least 20% more fuel efficient. They estimate that, for mid-size non-hybrid sedans, they can reduce the average cost per kilometer by 25%, from $0.10/km to $0.075/km. The new fuel-injector would not incur a significant cost increase in current car prices. For the hybrid car that Major Engines produces, this would represent a cost reduction for the consumer, and the cost per km would decrease from $0.07/km to $0.056/km. However, any type of carbon tax could increase this cost per kilometer. Given that the value customers place on fuel economy of operating a vehicle is increasing in the cost/km, market studies indicate that, if a carbon tax happens, partnering with EcoInject would increase you market share by 3% (an additional $120 million in revenue/year). If there are no carbon taxes in place, the market share increase would be about 1%.

You understand the value of being a first mover in a market, and Better Place's technology seems potentially disruptive. In preparation for your meeting, you had your engineers analyze how much it would cost to redesign Project Omega and its production line to be compatible with the Better Place batteries and the initial estimate was $50 million.

If a partnership with Better Place were to happen, and if the entry of Better Place into the market is successful, this new vehicle will likely be a huge success, and you estimate you would obtain an additional 6% market share in 4 or 5 years (about $240 million in revenue per year). However, if you partner with Better Place and things don't work out for them, this will be an embarrassing failure for Major Engines, hurting your prospect of becoming CEO. You estimate that, without this partnership, Better Place will be able to obtain at most 2% of market share in the next five years (you would lose about 1% of market share in this case).

If you choose not to partner with Better Place, your analysists envision two possible outcomes for Project Omega. If no consumer tax breaks are put in place, they estimate that Major Engines' market share increase from the Project Omega car will be less than 1% (the vehicle will be a niche product) and the project will largely be considered a failure. If tax incentives do occur, the market share increase will be about 4% (about $160 million in additional revenue per year).

Finally, if you partner with EcoInject and no carbon taxes are in place, leading to hybrid and internal combustion vehicles with a very low cost per km, this might make the economics of the Better Place business model infeasible in the short run. You are also concerned that Better Place might not be able to secure the investment necessary to build battery swapping stations.

Decision:

Will you make the Project Omega car compatible with Better Place? Will you ditch electric vehicles all together and stick to hybrid cars? Will you partner with EcoInject?

Evaluation

You will be evaluated on your increase in market share and/or losses.

[2] This startup is in stealth mode and you should not discuss it. The only other player that is aware of them is the Clean World Fund (feel free to discuss EcoInject with them in private). Don't comment about this company with others.

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Mrs. (Mr.) Olivia (Oliver) Green, Partner, Clean World Fund

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Details of your role:

You are **Mrs. (Mr.) Olivia (Oliver) Green,** an INSEAD graduate (MBA '02D) and a successful entrepreneur. After two successful start-up exits (one for a company that produced organic-cotton underwear and the second for an on-line liquor store) you raised money and created the Clean World Fund, a social impact fund focused on investing in companies that would help reduce carbon emissions and speed-up the transition to a clean energy world. You are based in Mulin, the largest city in Carpania, one of the richest countries in the world.

The Carpanians love their vehicles and the majority of Carpanians own cars and use them in their daily commute. Carpania also has a very active start-up scene, and there are many companies in the green-tech sector. Although Carpania is an advanced economy, it has a very pollutant energy base. Less than 10% of the energy in Carpania is generated from renewable sources and there are many coal power plants throughout the country. This is a source of concern for the government, and policymakers are trying to find the best way to help Carpania transition to a greener economy.

You need to decide if you will invest or not in Better Place. Your investment will likely be used to build battery swapping stations. You estimate that at least 15 stations are needed in the greater Mulin area in order to eliminate "range anxiety" and to obtain a critical mass of customers. Given the equity that you will receive in exchange for your investment, you estimate that the ROI for Better Place will be 600% in the long run if they are able to successfully enter the market. However, this depends on Better Place being able to build enough switching stations, on a large Carpanian car company partnering with them, and some tax incentives from the government.

Besides Better Place, you are looking at two other potential investments (these companies are in "stealth-mode", so **you should not share this info with Better Place. You can share the existence of these companies with the other players, but don't share any numbers**):

- **SunnyTech** (based in Mulin, Carpania): a solar energy tech company that produces nanocrystal solar cells. These solar cells Could potentially be 20%-30% more efficient that traditional solar panels with only a 15% increase in price. This price increase would not significantly reduce the average payback time of installing solar panels for most consumers. Thus, if there are no other incentives for price reduction (such as tax breaks) the expected ROI for investing in this company is about 30%. If there are tax incentives for solar energy (which would reduce the cost of adopting solar panels by 20%), the market for green tech would increase significantly, and the expected ROI would be around 350%.

- **EcoInject** (based in Mulin, Carpania): a startup that developed a new fuel injector technology that makes both regular and hybrid engines at least 20% more fuel efficient. They estimate that, for mid-size non-hybrid sedans, they can reduce the average cost per

kilometer by 20%, from $0.10/km to $0.075/km. The new fuel-injector would not represent a significant cost increase in current car prices. This company was founded by a senior engineer from Major Engines, Carpania's largest car company, and you are aware that they might partner with (and maybe later on acquire) this company. Also, in the long run, some sort of carbon tax seems inevitable, creating more demand for this new technology. If the process of a carbon tax is accelerated and happens in the near future (i.e., if this is part of the policymaker's decision), and if Major Engines partners with EcoInject, you expect a ROI of 500%. However, if Major Engines partners with EcoInject but no carbon tax happens, the ROI is expected to be about 100%. In case there is no partnership, the ROI is -100%, i.e., your investment is lost.

If Major Engines partners with EcoInject, leading to hybrid and internal combustion vehicles with a very low cost per km, it could potentially make the economics of the Better Place business model infeasible

Due to the number of investments the fund already has, you are willing to invest **at most $20 million between two of the tree startups**. Your main concern regarding Better Place is that, unless they obtain a partnership with a local automaker, it will be difficult to enter the Carpanian market (**Carpanian's are very nationalistic and prefer local car brands**).

Decisions:

In which two of the three companies will you invest? How much?

Evaluation

You will be evaluated on the ROI of your investments.

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Mr. (Mrs.) Lucas (Lara) Weber, Environment Minister of Carpania

Preliminary Instructions:

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Details of your role:

You are **Mr. (Mrs.) Lucas (Lara) Weber,** the Environment Minister of Carpania, one of the richest countries in the world. The Carpanians love their vehicles and the majority of Carpanians own cars and use them in their daily commute. Carpania also has a very active start-up scene, and there are many companies in the green-tech sector. Although Carpania is an advanced economy, **it has a very pollutant energy base**. Less than 10% of the energy in Carpania is generated from renewable sources and there are many coal power plants throughout the country.

Despite your young age, you are already one of the stars of the Carpanian political scene, and you are on the fast-track for a potential future presidential candidacy. You have the ear of the president, and you are helping shape the future of Carpanian environmental policy. Better Place seems like a very exciting company, and you have already visited their HQ in Israel.

Currently, you are evaluating potential tax breaks and/or incentives for the green industry. In the long run, you hope that this will help Carpania transition to a "clean" economy. Also, due to the huge political expense of approving one of these incentives, you need to focus your efforts. More specifically, you are considering four options **and will choose two of them**:

1. **Tax breaks for the expansion of battery switching stations:** this is a tax incentive tailored for Better Place with the goal of increasing adoption of electric vehicles by effectively reducing the price of implementing a battery switching station by $500,000. However, there is a drawback: if Carpanian drivers do not change their driving habits, overall carbon emissions might not decrease since the majority of energy generated in Carpania is from pollutant sources and switching stations would further incentivize driving.

2. **Tax incentives for electric vehicles:** This tax break would effectively reduce the price for a consumer purchasing an electric vehicle by $5000. It would increase adoption of electric vehicles and would also encourage Carpanian automakers to produce electric cars.

3. **Tax incentives for green energy technologies:** This is a tax break that would cover consumers that install solar panels or other energy saving technology. It would decrease the cost of adopting solar panels by 20% and would increase the adoption of renewable sources of energy in Carpania. There are many startups in Carpania developing novel solar panel tech. If one of these companies managed to get their technology to market (they might require private investment for such), and you manage to implement green energy tax incentives, this would be a game-changing step for transitioning Carpania to a green energy base.

4. **Carbon tax:** This would increase the average cost per kilometer for gas and hybrid cars by 20% (for example, from $0.10/km to $0.12/km). Experts say that it would be a decisive step towards reducing emissions and research indicates that this might be the best way to decrease CO_2 emissions. However, it could impact many Carpanian automakers, like Major Engines, and transportation dependent industries. You hope that it will spur investment in more efficient internal combustion engines and hybrid vehicles.

Finally, you understand the value and potential of Carpanian industry, and would prefer to have **local players** develop clean and green tech, instead of players from abroad.

Decision

What two policy options (out of the possible four) will you choose? Which one will you prioritize?

Evaluation

You will be evaluated by the environmental outcome of the negotiations, i.e., how much you were able to advance the adoption of green technologies. The "greener" the outcome, the better. The second evaluation criteria is how much you help Carpanian companies.