Case 8: Apache Helicopters -hard- Bain&Company, Round 1

(Source: Case Interview case from Bain&Company, Round 1)

Context:

Our client is a US defense contractor and one of its divisions manufactures Apache helicopters for military operations. The company is considering setting up a new plant to meet increasing demand in the attack helicopter space. These helicopters are fully equipped with guns and ammo when delivered to the client. The client has considered three sites where to setup operations – Brazil, France and US.

Q1. How would you go about defining the parameters for decision?

Q2. Where should they setup the plant based on that analysis?

(A good structure should include the following elements)

1. **Export control restrictions** between the US and FR & BR; this is important because if the transfer of technology is disallowed, then the only option is to setup the plant in the United States

2. **Financial analysis** of operating up the plant in different locations
   a. Costs (FC, VC)
   b. Revenues that accrue from sales
   c. Where are the profits?

3. **Customers**
   a. Where are they based?
   b. Need to be close to the customer for design inputs

4. **Suppliers**
   a. Spare Parts
   b. Raw materials

5. **Logistics**
   a. What’s it going to take to get the product to the customer?

6. **Manpower** (availability of skilled managers, technicians)

(Provide the interviewee with the information she/he asks for, but don’t volunteer any information. The case itself isn’t very hard, but the critical thinking around how a country might alter purchases based on country of origin is a thought that good interviewees will bring up. The other key aspect is the interviewee’s ability to capture data and not get lost in it.)

Data to provide the interviewee, but only upon specific request

**Company Information**
- The client has 3 plants in the US; 2 in Kansas and 1 in Michigan
- The plants operate at full capacity today.
- One of the US plants can accommodate an additional assembly line at the cost of $500M; the other 2 are landlocked in residential areas and cannot be expanded.

**Cost Information**
- Initial plant setup costs are $500M (US), $2B (BR), $3B (FR)
- Fixed Costs are $100M annually in all three countries
- Variable costs are $15M (US), $20M (BR), $25M (FR)
Market Size and Revenue Information

- Defense Budget for next 5 years: $100B (US), $15B (BR), $10B (FR)
- % of Defense Budget to be spent on our helicopters over the next 5 years

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<thead>
<tr>
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<tbody>
<tr>
<td>Plant in the US</td>
<td>20% of budget</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Plant in BR</td>
<td>20% of budget</td>
<td>50% of budget</td>
<td>0%</td>
</tr>
<tr>
<td>Plant in FR</td>
<td>20% of budget</td>
<td>0%</td>
<td>50% of budget</td>
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Sales information

The helicopter sell for $100M a piece, but if they are imported into the US, then the US Govt. require them to be certified and the certification process costs $15M per chopper.

SOLUTION:

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Brazil</th>
<th>France</th>
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<tbody>
<tr>
<td>Costs (5 years)</td>
<td></td>
<td></td>
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<tr>
<td>Initial Setup</td>
<td>$500M</td>
<td>$2B</td>
<td>$3B</td>
</tr>
<tr>
<td>Annual Fixed costs</td>
<td>$100M x 5</td>
<td>$100M x 5</td>
<td>$100M x 5</td>
</tr>
<tr>
<td>Variable costs</td>
<td>$15M/ chopper</td>
<td>$20M/ chopper</td>
<td>$25M/ chopper</td>
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<tr>
<td>TOTAL COSTS (over 5 years)</td>
<td>500M + 500M + (# of units) x ($15M)</td>
<td>2B + 500M + ((# of US bound units) x ($20M + $15M) + (# of BR bound units) x ($20M))</td>
<td>No need to calculate since revenues is lower and costs are higher than Brazil, so ignore.</td>
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<tr>
<td>Revenues (5 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>$20B</td>
<td>$20B</td>
<td>$20B</td>
</tr>
<tr>
<td>BR</td>
<td>0</td>
<td>50% x 15B = $7.5B</td>
<td>0</td>
</tr>
<tr>
<td>FR</td>
<td>0</td>
<td>0</td>
<td>50% x $10B = $5B</td>
</tr>
<tr>
<td>TOTAL REVENUE (over 5 years)</td>
<td>$20B</td>
<td>$27.5B</td>
<td>$25B</td>
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</table>
If plant in US
US revenues over 5 years = 20% of 100B = 20B
# of choppers = $20B / $100M = 200 helicopters
Total Cost = 500M + 500M + (200) x ($15M) = $4B
PROFIT = $16B

If plant in BR
US revenues over 5 years = 20% of 100B = 20B
BR revenues over 5 years = 50% of 15B = 7.5B
# of US-bound choppers = $20B / $100M = 200 helicopters
# of BR-bound choppers = $7.5B / $100M = 75 helicopters
TOTAL COST = 2B + 500M + {(# of US bound units) x ($20M + $15M)} +
{(# of BR bound units) x ($20M)}
= 2B + 500M + (200) (35M) + (75) (20M)
= 2B + 500M + 7B + 1500
= $11B
PROFIT = $16.5B

Having the plant in Brazil will give us profits higher than the US by $500M

(A good candidate will come up with a recommendation)

Based on the financials, Brazil appears to be a more attractive candidate for setting up the new plant because:
- our profits over 5 years will be higher by $500M
- we won’t be entirely dependent on one single country (US) for sales

However, we need to also explore the following:
- what is the potential for selling choppers outside of these 3 countries to the worldwide market
- what will labor reaction at our existing plants be if we off shore production to Brazil
- are US relations with Brazil likely to be cordial over the next 5 years for us to benefit from export control laws and sales to both nations

(Case writers tip: This case is not overly complicated, but allows for the opportunity to bring in your own knowledge from reading about companies in the Defense space. E.g. The issues with EADS and Airbus reference labor relations and plant locations in France can be a point of discussion for bonus point.)