Case 20: Cleaning Supplies (I of VII)
ZS Associates, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request(1)
Your client is a Cleaning Supplies Manufacturer. They are trying to redesign their Sales Force and have approached you for advice	**Provide exhibits upon request**

(1) If detailed exhibits exist, they will be referenced in this box, and included in full on the following slide(s)

Exhibit 1

Case 21: Cleaning Supplies (II of VII)

ZS Associates, Round 1

There are four product lines:

	# Customers	Current Revenue	Prior Year Revenue	%Change
A	12,000	$24 M	$18 M	33%
B	24,000	$30M	$35M	-14%
C	6,000	$24M	$20M	20%
D	3,000	$30M	$18.5M	62%

Which products would you concentrate on first and why?
Suppose a sales person can make 3,000 calls per year, and a customer must be called 10 times in order to make a sale. How many sales people should you hire?

Exhibit 2

Case 21: Cleaning Supplies (III of VII)
ZS Associates, Round 1

The Research Team provided the following revenues and costs associated with the sales force
Estimate the Optimum Sales Force

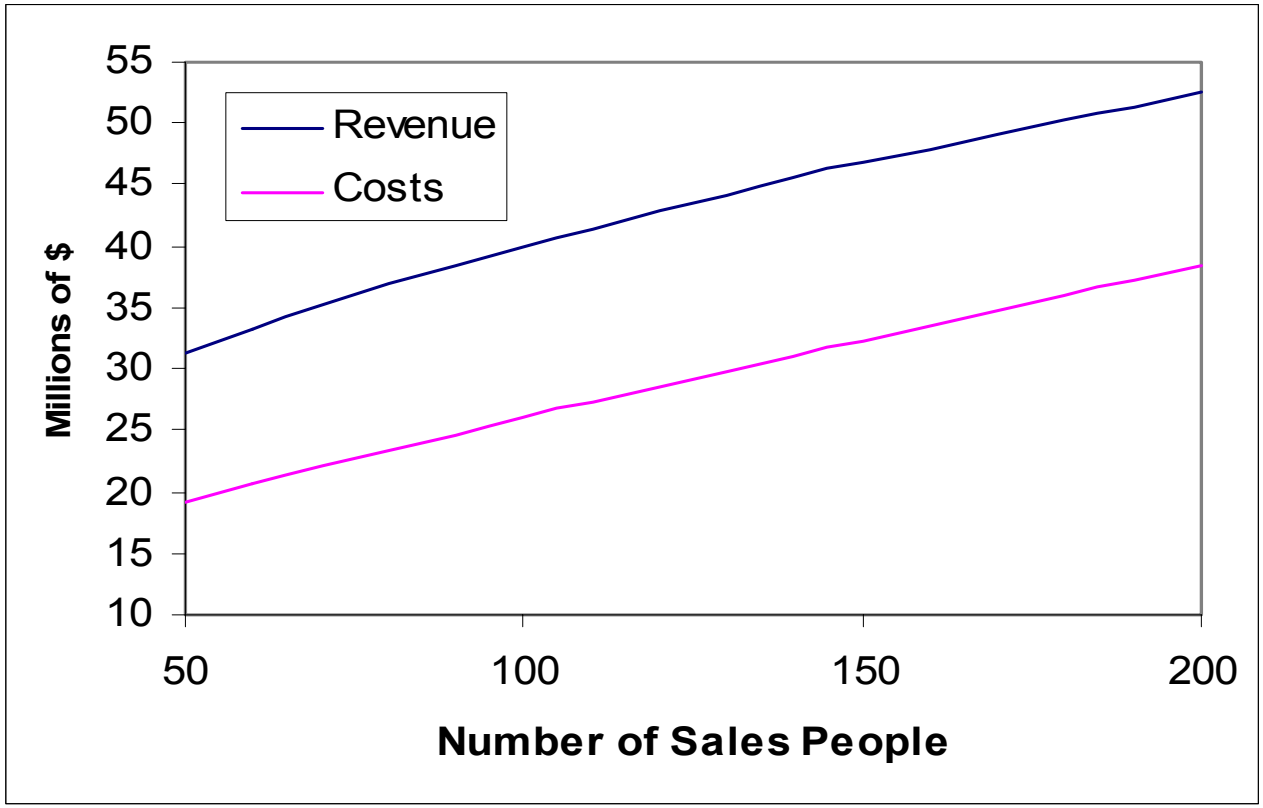

Exhibit 3

Case 21: Cleaning Supplies (IV of VII)
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In the previous slide, revenue is given by

Revenue = 3,000,000*sqrt(N) + 10,000,000 (N = number of Sales People)
Gross Margin = 80%
Fixed Costs = 8,000,000
Assume each sales person makes $100,000 in salary and benefits
What is the optimum Sales force?

Exhibit 4

Case 21: Cleaning Supplies (V of VII)
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Sales force information for the competition is as follows:

	# Sales People	% time working on sales calls
Client	?	100%
Comp 1	50	100%
Comp 2	100	80%
Comp 3	200	75%
Comp 4	400	50%

How many sales people should the client hire in order to achieve 25% of the industry's total coverage?

Case 21: Cleaning Supplies (VI of VII)
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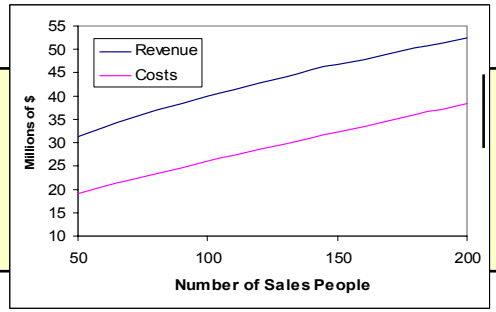
Exhibit 1	Order of Focus → D,C,A,B (based on Revenue per customer) Total Customer calls = (12,000+24,000+6,000+3,000)*10 = 450,000 Customer calls per year = 3,000 Number of Sales People required = 450,000/3,000 = 150
Exhibit 2	Based on chart, Optimum Sales Force = 150 Draw vertical lines between revenue and cost curve Find N with maximum distance between two curves
Exhibit 3	Profit = 80%*(3,000,000*sqrt(N)+10,000,000)-100,000N-8,000,000 = 2,400,000*sqrt(N)-100,000N To Maximize profit, first derivative should be zero and second derivative should be negative First Derivative: 1,200,000/sqrt(N)-100,000 = 0 → sqrt(N) = 12 → N = 144 Second Derivative: -600,000/sqrt(N^3) → Negative
Exhibit 4	Let x = # Sales People Client needs 25% customer reach x/(400*50%+200*75%+100*80%+50*100%+x*100%) = 25% x/(480+x) = 25% → x = 160



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Additional question for candidate	Recommendations
You have calculated different sizes for the sales force in each scenarios. What size sales force do you recommend?	The optimum sales force ranges between 144 and 160 people. The recommended value should be closer to the lower end since the last calculation, 25% customer reach (N=160), doesn't necessarily translate to revenues.