BIITM FEST 2019

CASE STUDY

BUSINESS CHALLENGE FOR 'THE MAVERICK'

Our client is an auto parts manufacturer and is seeking revenue growth opportunities for its struggling filters business. The filters business, named ABC Filters, currently sells oil and air filters for consumer and commercial vehicles. In addition to automotive filters, ABC historically invested in emerging air filter technologies for large, natural gas turbines (GT) used for power generation. The process of combusting natural gas for power generation requires a tremendous amount of air intake (~720,000 ft3 of air every minute of operation) and a turbine may need up to 1,000 intake filters to remove harmful contaminates that erode and foul the turbine's function.

ABC's R&D Investment has recently developed a cartridge-shaped 'E10' synthetic filter with a self-cleaning mechanism that significantly reduces turbine cleaning downtime. Unlike other filters sold in the market the 'E10' will allow turbine operators to efficiently generate electricity in harsh operating conditions (excessive heat, high humidity, high pollution, etc.). If launched successfully, ABC will be selling the first 'E10' grade gas turbine filter with a self-cleaning mechanism. ABC is also looking at utilizing its filters servicing expertise to provide associated services for 'E 10' customers.

Although our client has high expectations for this technology, they lack deep knowledge of the natural gas power generation filter market. The client has engaged your team to assess the attractiveness of this growth opportunity and provide a market entry strategy should they choose to proceed with the filter launch.

The brief for your team involves :

1. Market sizing

- Lay out an approach to size the gas turbine filter market. Calculate the size of the addressable market for the client's product (i.e., cartridge synthetic filter subsegment) and prioritize geographies based on market attractiveness.
- Identify macro/micro trends that could influence the gas turbine market in the future. Explain the effect of these trends on future market attractiveness.

2. Value proposition

- Develop a value proposition for the E10 filter that highlights advantages over the E9, E12 variants.

3.Go to market (GTM)

- Based on your research of the market environment and ABC's capabilities, what are the possible GTM options for ABC ? Evaluate the options and provide a recommendation on the most suitable GTM approach for the client.

Estimated growth rates of natural gas electricity generation

	5 year CAGR	10-Year CAGR	
Europe	2.4%	1.1%	**Europe**
Middle east	8.1%	4.7%	**Middle east**
Rest of Asia	5.2%	4.5%	**Rest of Asia**
Africa	7.3%	5.0%	**Africa**
North America	0.4%	0.4%	**North America**
Latin America	4.3%	3.8%	**Latin America**
Total	3.3%	2.4%	**World**

Current install base of GT filters by type

	Panel		Cartridge		Climate
	Cell	**Synth**	**Cell**	**Synth**	
Europe	30%	40%	10%	20%	Marine
Middle east	10%	10%	20%	60%	Arid
Rest of Asia	30%	20%	20%	30%	Mixed
Africa	25%	25%	20%	30%	Arid
North America	15%	25%	10%	50%	Mixed
Latin America	25%	25%	30%	20%	Humid Sub-tropical

Note: "Synth"= Synthetic filter technology, "Cell"= Cellulose filter technology

High Efficiency filter consideration factor

	E9	E10	E12
Market Status	Available	Testing	Available
Filter price	$300	$330	$100
Filter replacement (months)	24	24	12
Turbine wash time (hrs./year)	90	120	180
Down time for filter cleaning(hrs./year)	60	20	300
Average turbine capacity	160-180MW	150-190MW	160-180MW
Average turbine uptime	98%	99%	96%
Price of electricity	$0.06 per Kilowatt hour		

Current installed GT distribution by region

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Distribution of Turbine Installation by generation capacity (Measures in MW)				
	30-60	60-120	120-180	>180
Europe	29.3%	5.4%	6.9%	11.2%
Middle east	13.8%	30.1%	41.4%	12.9%
Rest of Asia	24.6%	17.2%	16.1%	11.3%
Africa	10.8%	0.0%	9.2%	0.0%
North America	4.6%	43.0%	16.1%	58.1%
Latin America	16.9%	4.3%	10.3%	6.5%
World	100%	100%	100%	100%

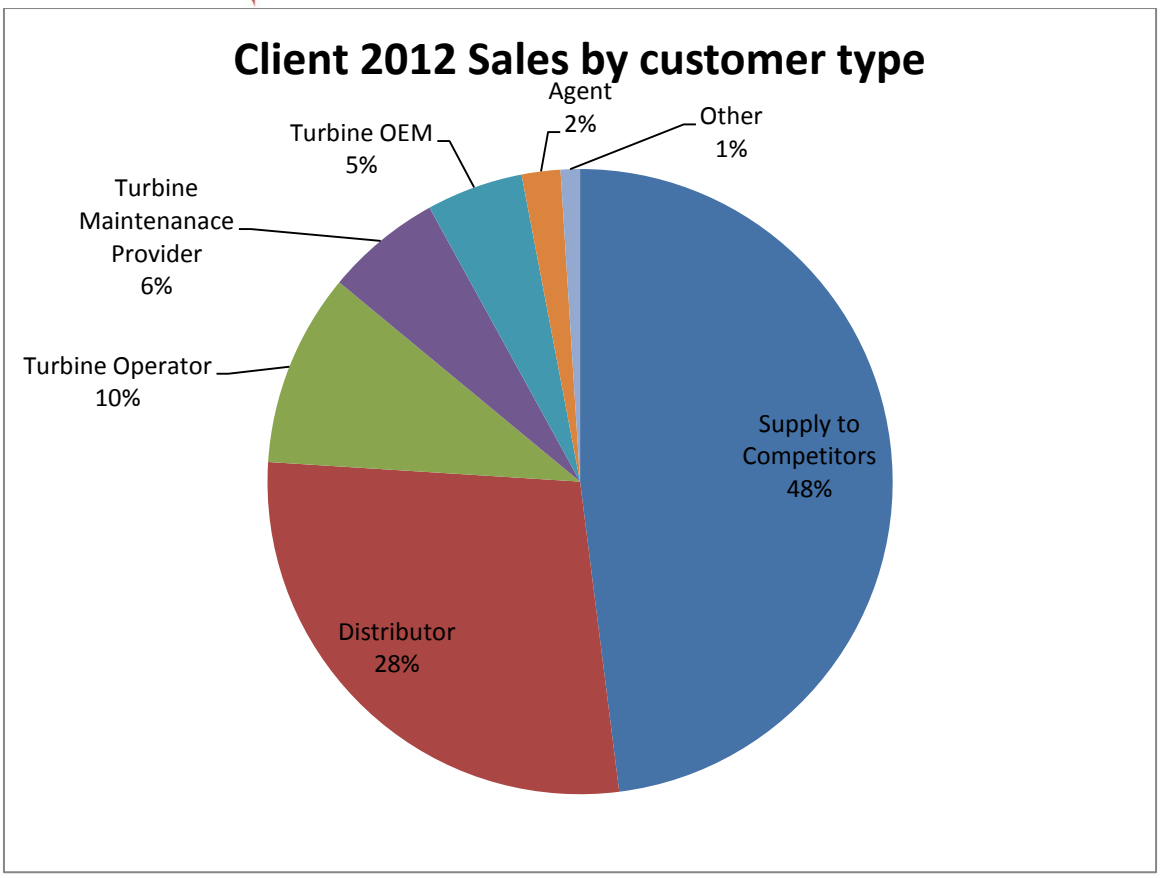
Key filter statistics

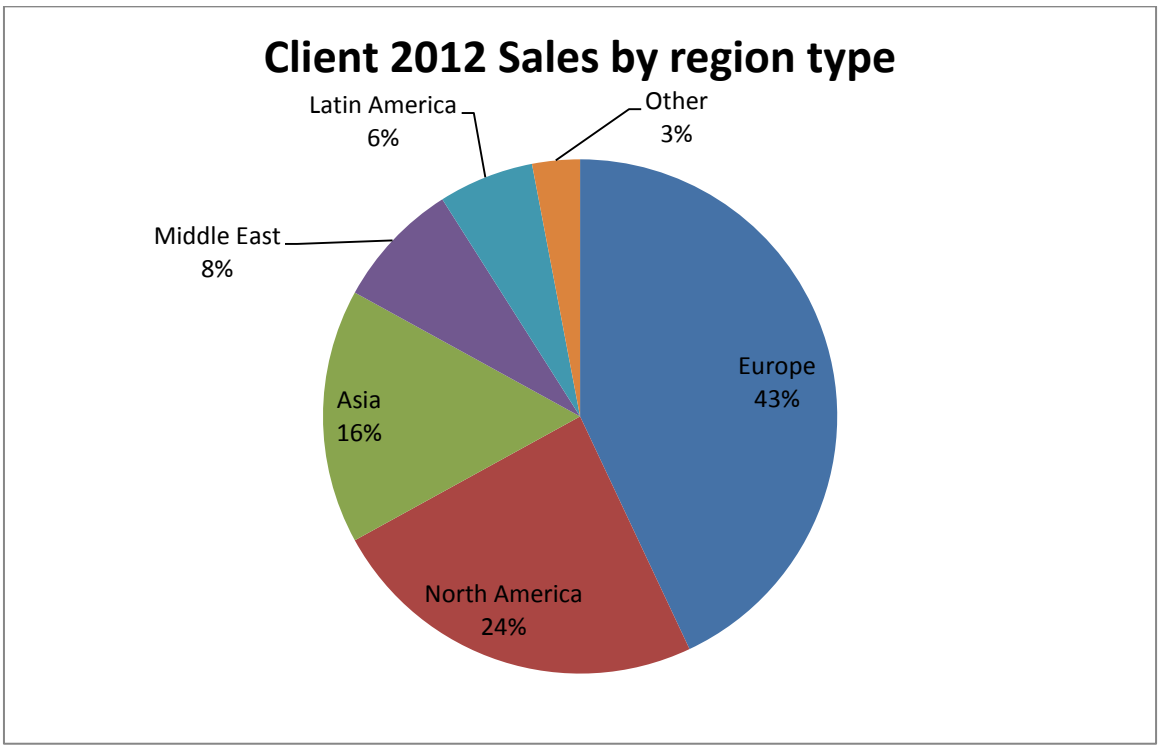
	Panel		**Cartridge**	
	Cell	**Synth**	**Cell**	**Synth**
No. of filters per MW of power generation	**10**	**15**	**12**	**10**
Filter lifetime (months)	**8**	**12**	**12**	**24**
Avg. Price	**$80**	**$100**	**$100**	**$300**
Average loss in power generation (%)				
Marine	8%	2%	8%	5%
Arid	6%	5%	4%	2%
Humid Sub-tropical	4%	4%	6%	4%

Note: 1 gigawatt (GW) = 1,000 megawatt (MW)

Competitor Capabilities and sales

	Filter production	**Filter installation**	**Filter servicing**	**Gas turbine OEM**	**Gas turbine maintenance**	**Product variant**
Client	**X**	**X**				**E10**
Competitor A	**X**	**X**	**X**		**X**	**E12**
Competitor B	**X**		**X**			**E12**
Competitor C	**X**	**X**	**X**	**X**	**X**	**E9**
Competitor D	**X**	**X**	**X**			**E9**


Client 2012 Sales by customer type
Agent 2%
Other 1%
Turbine OEM 5%
Turbine Maintenanace Provider 6%
Turbine Operator 10%
Supply to Competitors 48%
Distributor 28%


Client 2012 Sales by region type
Latin America 6%
Other 3%
Middle East 8%
Asia 16%
Europe 43%
North America 24%