



Opportunities for Plastic Pipes in Middle East

Lucintel Brief

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Executive Summary

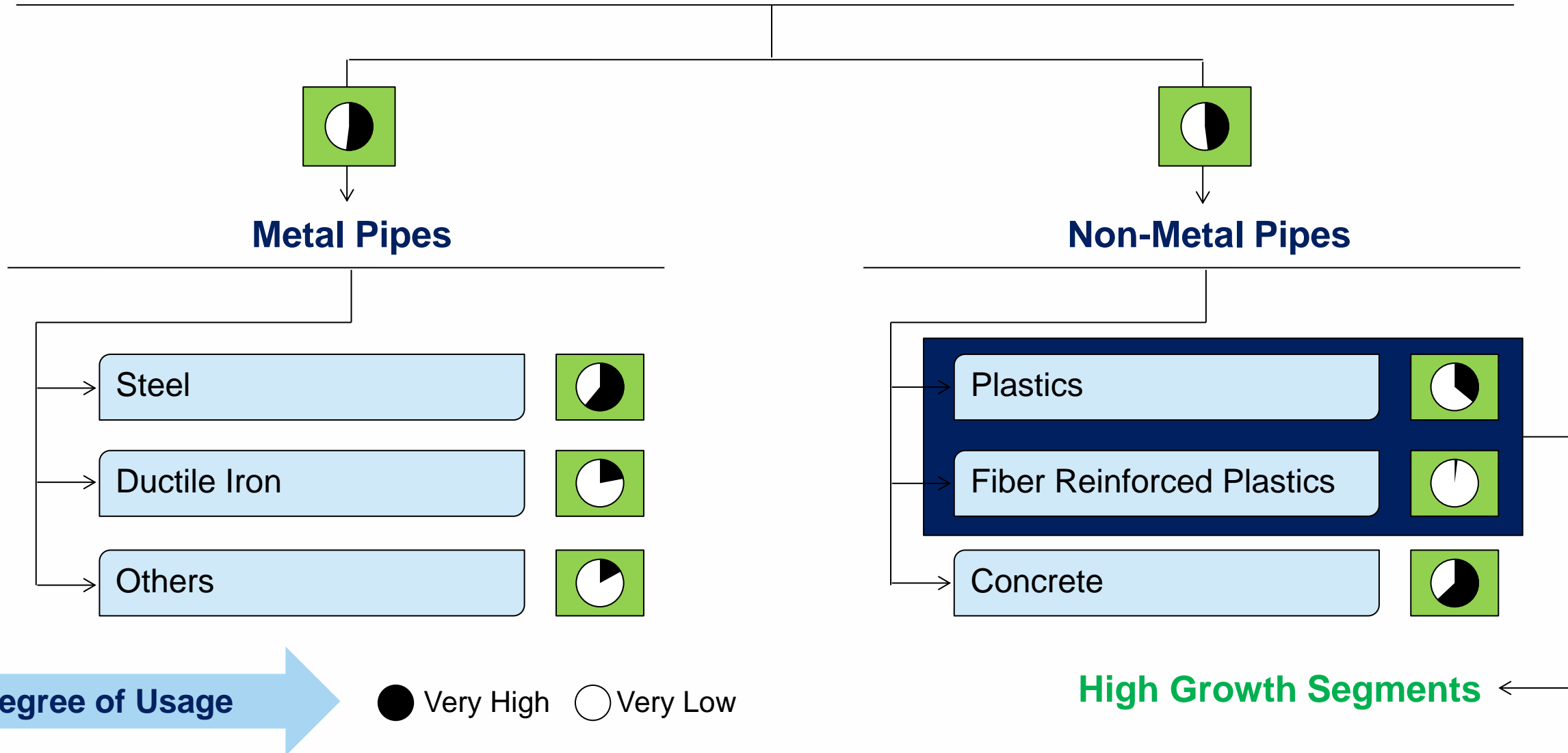
- **Middle east plastic pipe market was estimated at \$2.9 B in 2019 and is expected to grow with a CAGR of 8.2% in the next five years to reach \$4.2 B in 2025**
 - Middle east plastic pipe market accounted for 4% of the global plastic pipe market in 2019 and is the second fastest growing region in the next five years after Asia-Pacific
 - Continuous investment in water infrastructure, building & construction, and oil & gas industry are the growth drivers for plastic pipe market in Middle East
 - High corrosion and chemical resistance, lightweight, low installation time, ease of installation, durability are the major advantages of plastic pipe over metal and concrete pipes
- **PE and PVC accounts for 90% of the total plastic pipes market in Middle East in 2019**
- **Water supply and sewage (drainage) are the major applications of plastic pipes, constitute together more than 60% share of the Middle East plastic pipe market**
- **PE and PVC pipes are likely to experience higher growth among all plastic pipes in the next five years in Middle East**
- **Thermoplastic pipes such as PVC and PE are manufactured through extrusion process whereas FRP pipe is manufactured through filament winding process**
- **The cost of extrusion and filament winding process ranges from \$0.2 to \$5 million depending upon the plant capacity and equipment type**

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Global Pipe Market is Highly Dominated by Metal Pipes

Types of Raw Materials Used in the Pipe Application



Plastic Pipe Market: Overview

Key Insights



- Plastic pipes are mostly used for carrying and transporting water, sewage, gas, and chemicals from one place to another
- Plastic pipes are replacing steel pipes in most of the applications, mainly due to better corrosion and chemical resistance, lightweight and durability
- Asia-Pacific is the largest market for plastic pipes, followed by North America, Europe, Middle East and Rest of the world
- PVC is the most widely used material in manufacturing plastic pipes. About 40% of the total global PVC is used for manufacturing pipes and fittings
- PE pipes and fiber reinforced pipes (FRP) pipes are likely to register higher growth in the next five years

Major Pipe Manufacturers	Major Materials	Major Applications	Major Properties
<ul style="list-style-type: none"> • Lesso Group • Advanced Drainage Systems • North American Pipe Corp • JM Eagle Co. • Future Pipe 	<ul style="list-style-type: none"> • PVC • PE (including HDPE) • PP • Fiber Reinforced Pipes 	<ul style="list-style-type: none"> • Water Supply • Agriculture • Sewage • Cable Protection • Oil & Gas • Others 	<ul style="list-style-type: none"> • Chemical Resistance • Corrosion Resistance • Lightweight • Low cost (except FRP)

Key Applications of Plastic Pipe

Portable Water



Waste Water



Agriculture



Chemical



Oil and Gas



Electrical and Telecommunication



Plastic Pipe Market Presence by Resin Type

Plastic Pipe Application Segments	Plastic Pipe Market Distribution
Portable Water	
Waste Water	
Electrical and Telecommunication	
Agriculture	
Chemical	
Oil & Gas	



PVC Pipes	PE Pipes	PP Pipes	Other Pipes

Degree of Usage

- Very High
- Very Low

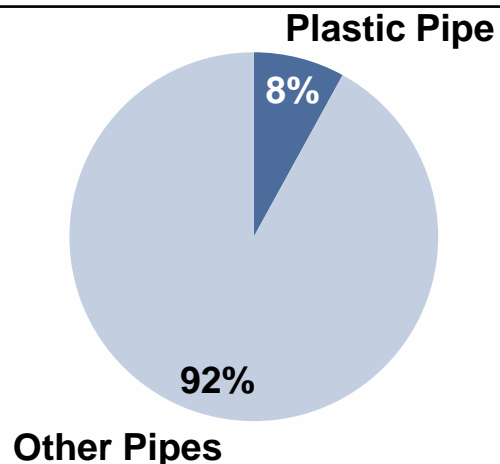
- Portable water and waste water applications together account for more than 60% of the global plastic pipe market
- PVC pipes and PE pipes together account for more than 80% of the global plastic pipe market

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Plastic Pipe Constitutes ~8% of the Middle East Pipe Market

Total Pipe Market in Middle East in 2019:
~14.2 Million Tons

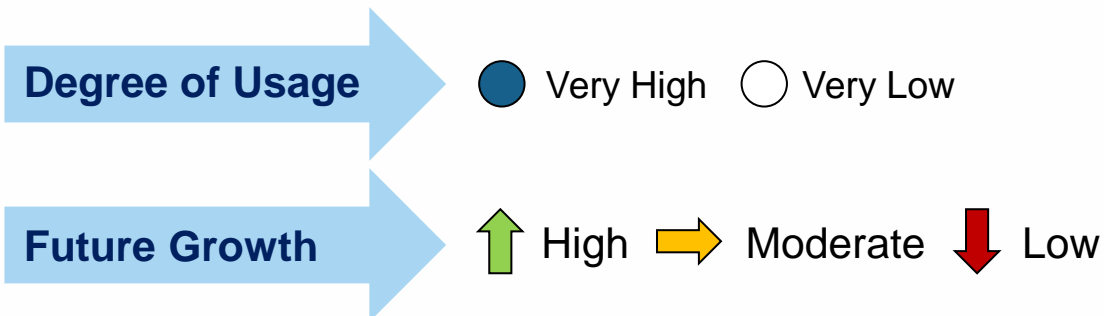


Materials Dominance in the Middle East Pipe Market

Materials Type	Market Share	Future Growth
Steel		
Ductile Iron		
Plastic		
Concrete		

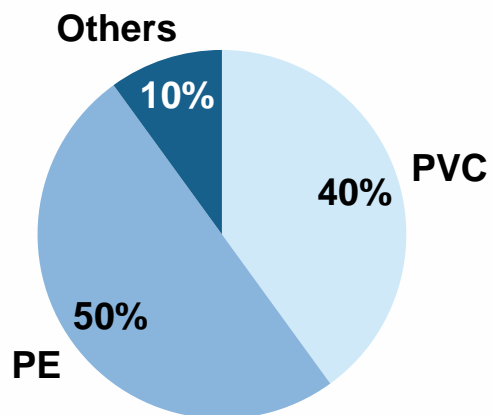
Key Insights

- Total Middle east pipe market was estimated at 14.2 million metric tons in 2019 in which plastic pipes has about 8% share
- Plastic pipe market is expected to experience highest growth among all type of pipes in the next five years
 - HDPE and FRP pipes are the fastest growing plastic pipe type in middle east region mainly driven by water supply, oil & gas and industrial markets
- Construction, sewage, oil & gas and industrial are the major application segments for plastic pipes in middle east region

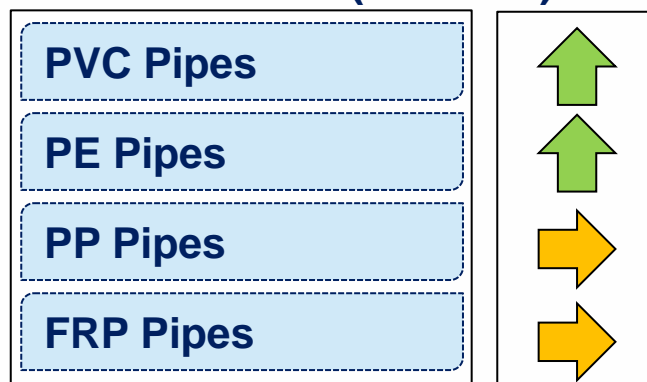


PE and PVC accounts for 90% of Total Plastic Pipe Market in Middle East in 2019

Middle East Plastic Pipe Market by Materials in 2019: \$2.9 Billion



Future Growth of Major Plastic Types (2020-25)



Future Growth → ↑ High → Moderate ↓ Low

Key Insights


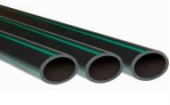
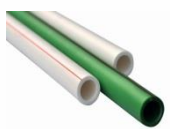

- PE and PVC are the major plastic pipe material type in the middle east market with 50% and 40% share respectively in 2019
 - More than 75% of the total PVC pipes goes into the construction industry
- PE pipes are likely to experience the greatest growth among all types of the pipes in Middle east region
 - Low cost in terms of installations and production as compared to conventional iron and steel pipes
 - Highly effective for water supply and gas supply. Middle east region has higher water loss due to leakage (about 30% to 50%)
 - Ability to withstand at harsh environment (UV exposure 700kj/square cm/year, water temperature in the pipe upto 50 C, outside temperature ranges from -20 to +55 C and water with high chlorine content)

Wastewater is the Largest Application of Plastic Pipe, Whereas PVC Pipes is Largest in Material Type

Plastic Pipe Market by Application

Application	Growth Rate
 Wastewater	↑
 Portable Water	↑
 Electrical and Telecommunication	→
 Agriculture	↑
 Chemical	↑
 Oil and Gas	→

Plastic Pipe Market by Material

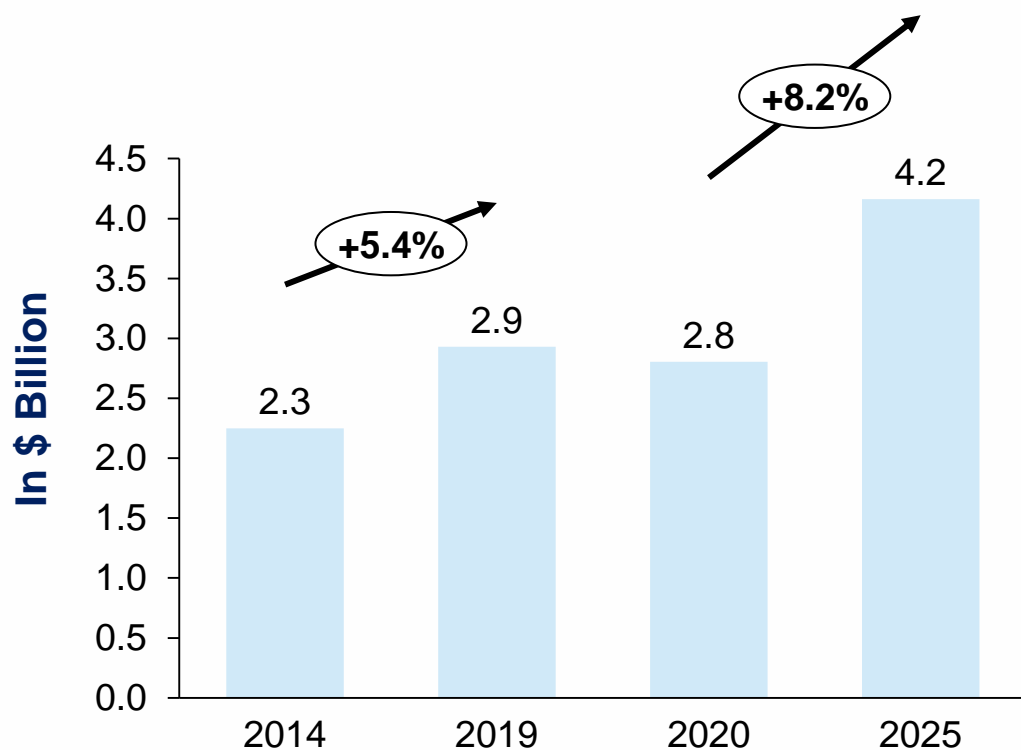
Material	Growth Rate
 PVC Pipes	↑
 PE Pipes	↑
 PP Pipes	→
 Others (ABS pipes, PB pipes, and PVDF pipes)	↑

CAGR: *Negative* <0% ↓ *Flat* 0%-3% → *Growing* >3% ↑

Source: Lucintel

Middle East Plastic Pipe Market Trend & Forecast (2014-2025)

Middle East Plastic Pipe Market Trend and Forecast : 2014-2025



Key Insights

- Middle East plastic pipe market is likely to grow with a CAGR of 8% in the next five years to reach \$4.2 billion in 2025
- Continuous high investment in infrastructure projects and strong economic growth are the major growth engines for the plastic pipe market in Middle East region
- High demand of large diameter pipes for applications, such as desalination plants and cooling lines for power plants

Key Drivers for Plastic Pipe Market in Middle East Region

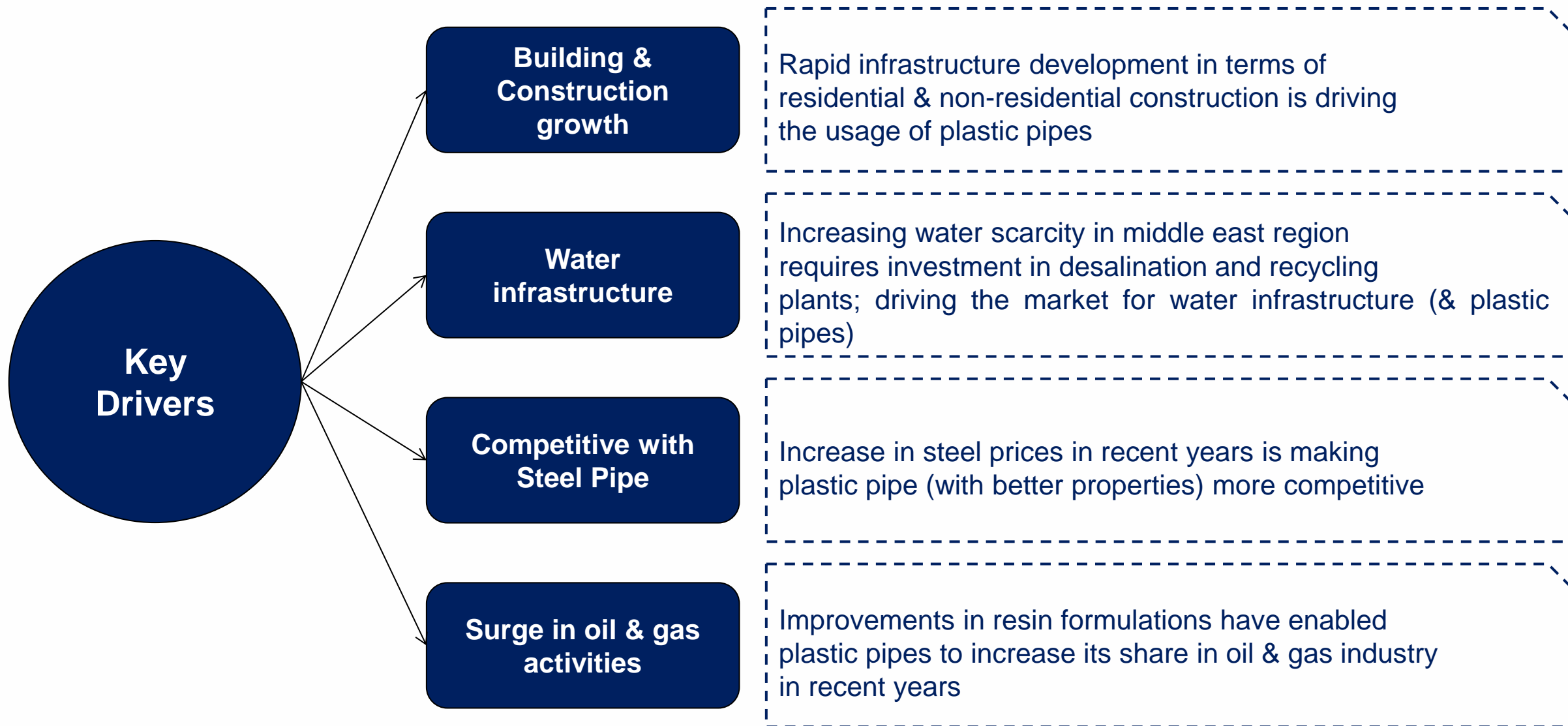


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
























Product Portfolio of Some of Major Players in Plastic Pipe in Middle East

Company	PVC	HDPE	LDPE	PP	FRP
Almunif Pipe (MMP Group)	✓	✓		✓	✓
Altayar plastic & rubber mfg. co. ltd.	✓				
Al-Koblan				✓	
AL-Wassael		✓	✓		
Al-Watania Plastics	✓				
Amiantit		✓			✓
Cosmoplast Industrial Co.	✓	✓	✓		
Future Pipe					✓
Jubail sanitary pipe factory		✓	✓		
Namat/Neproplast	✓				
Saudi Industries for Pipe Co, Ltd	✓				
Saudi Plastic Products Company Ltd. (SAPPCO)	✓	✓			

Market Presence of Some of Major Players in Plastic Pipe in Middle East

Company	Portable Water	Waste Water	Electrical & Telecom	Agriculture	Oil & Gas	Chemical
Almunif Pipe (MMP Group)	✓	✓		✓		✓
Altayar plastic & rubber mfg. co. ltd.	✓					✓
Al-Koblan					✓	
AL-Wassael	✓			✓		
Al-Watania Plastics	✓	✓				
Amiantit	✓	✓	✓	✓	✓	✓
Cosmoplast Industrial Co.	✓		✓	✓		
Future Pipe	✓	✓		✓	✓	✓
Jubail sanitary pipe factory	✓	✓	✓	✓		
Namat/Neproplast	✓	✓	✓			
Saudi Industries for Pipe Co, Ltd	✓					
Saudi Plastic Products Company Ltd. (SAPPCO)	✓	✓	✓			

Property Comparison of Different Types of Pipes

Property	Stainless Steel	Ductile Iron	PVC	HDPE	Concrete	FRP
Corrosion Resistance						
Thermal Resistance						
Weight						
Strength to weight ratio						
Product Life						
Cost						
Maintenance Cost						

Indicators  ● Very High ○ Very Low

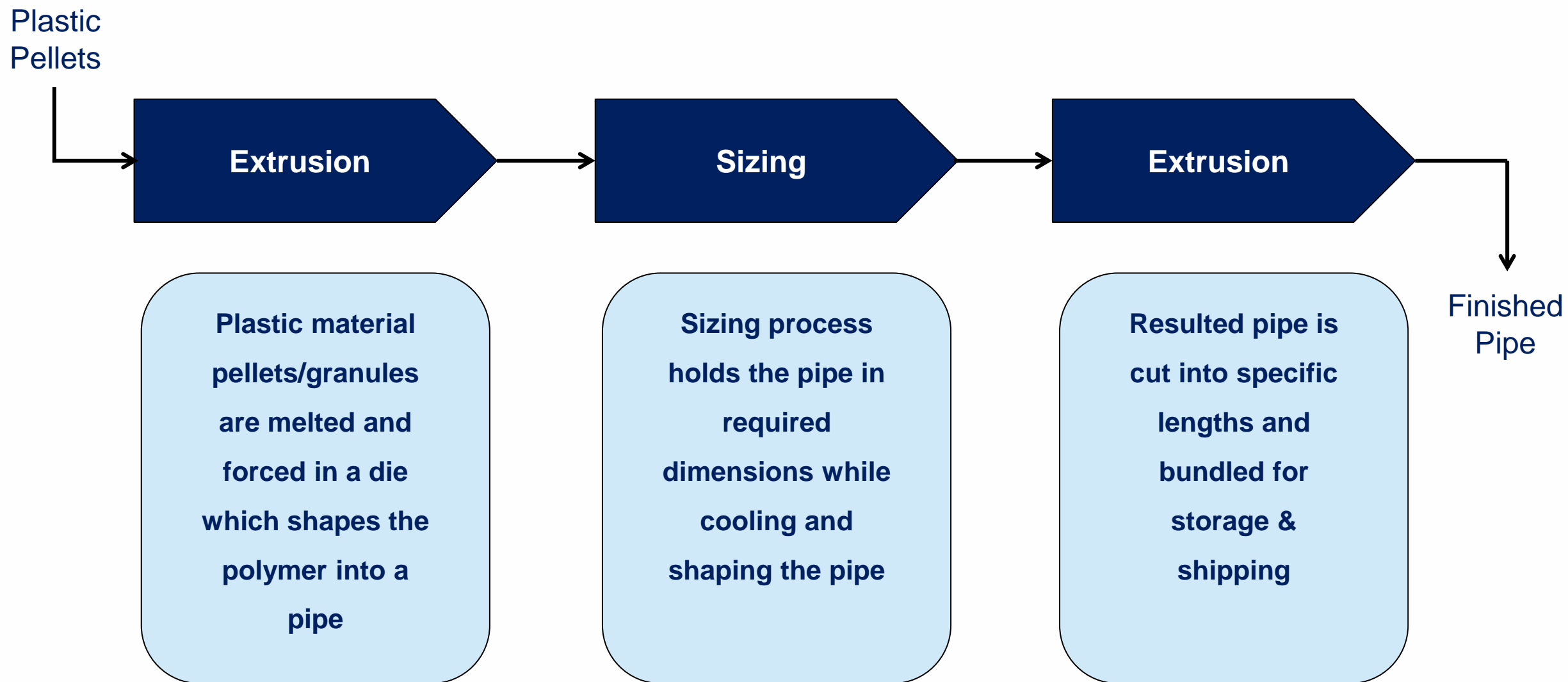
Major Pipes: Advantages, Disadvantages and Applications

Type of Pipe	Advantages	Disadvantages	Applications
Ductile Iron Pipe	Durable and suitable for high pressure applications	Corrosive, Heavy	High strength and high pressure applications that require a robust pipe
Stainless Steel Pipe	Durable and ideal for high pressure applications	Corrosive, Expensive	Water and waste water transmission, oil & gas Transmission
PVC Pipe	Light weight and easy to handle, Non-corrosive	Small life, Low strength	Buried water, buried sanitary sewer, agriculture, Cables
HDPE Pipe	Non-corrosive, lighter than steel, relatively lower cost	Limited pressure rating	All underground utilities where abrasion, corrosion and chemical resistance is Critical
Concrete Pipe	High strength and pressure rating, Long life	Very heavy	Jacking and microtunneling Applications
FRP Pipe	Non-corrosive, Lightweight, Long life, Strength to weight ratio	Expensive initially	For lightweight and anticorrosive applications such as oil & gas, chemical, industrial etc.

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Thermoplastic Pipe Manufacturing Steps



Plastic Pipe Plant: Equipment Cost, Raw Materials and Other Details

Plant: Investment and Other Details

Plant Capacity (in Tons)	1,500
Plant Area (Square Meter)	2,000
Building Area (Square Meter)	1,000
Manpower (No. of Employees)	25
Shifts (8 Hours Per Day)	3 Shifts
Power Requirement (HP)	110
Water Requirement (KL/ Year)	1,000
Investment in Machines (\$M)	\$0.1 - \$0.2

List of Raw Materials

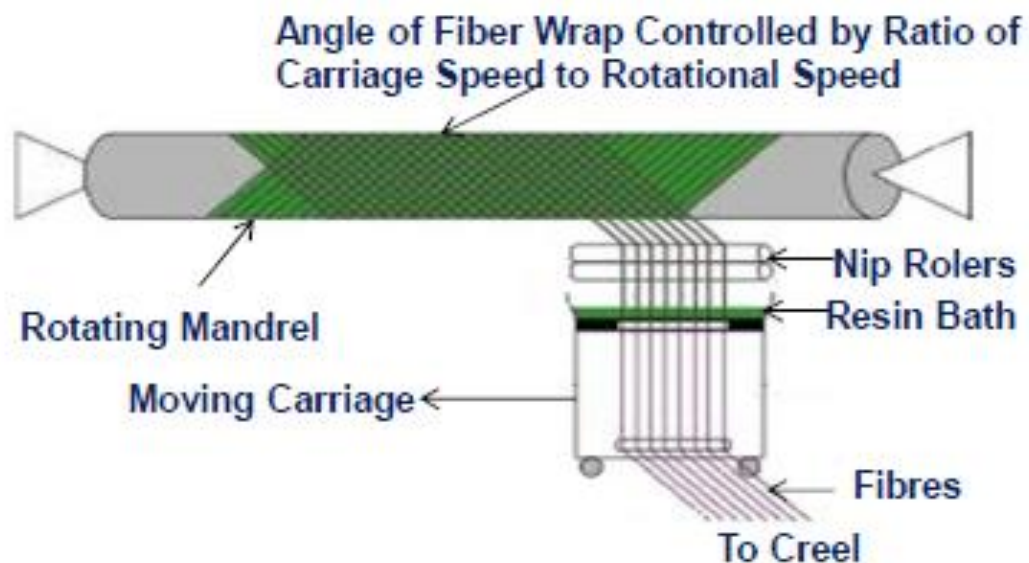
Resins (PVC, PE, etc)	Fillers
Stabilizers	Stabilizers
Lubricants	

List of Equipment

High Speed Mixers	Haul Off
Twin Screw Extruder	Cutting Machine
Vacuum Spray Bath	Stacker

FRP Pipe: Filament Winding Process Overview

Filament Winding Process Diagram



Insights

- **Materials:** Glass roving, epoxy, polyester, vinyl ester
- **Equipment:** Filament winding
- **Major Applications:** Pipes , tanks, pressure vessels, industrial roller, utility poles

Key Equipment

Filament Winding



Key Industries

Pipes & Tanks



Industrial



Construction



Filament Winding: Types

Helical or Discontinuous Process



- **Mandrel Diameter Capacity :25– 1,600 millimeter**
- **Pipe Length: upto 12 meters**
- **Resin System: Epoxy Resin**
- **End Applications: High temperature applications oil and gas, chemical, etc.**
- **Pressure: upto 240 bar**
- **Cycle Time: Comparatively High**
- **Machine Cost: \$100,000-\$500,000**

Continuous Process



- **Mandrel Diameter Capacity: 300 – 4,000 millimeter**
- **Pipe Length: upto 20 meters**
- **Resin System: Polyester, Vinyl Ester**
- **End Applications: Low temperature applications Sewage, Cooling Water, Industrial Waste Water, etc.**
- **Pressure: upto 25 bar**
- **Cycle Time: Low**
- **Machine Cost: \$3 – \$5 Million**

Investment Analysis

Pipes by Resin Type	Key Manufacturing Process	Equipment Cost (\$M)	Remarks
PVC Pipe	Extrusion	\$0.2 to \$5	Depending on the plant capacity
PE Pipe	Extrusion	\$0.2 to \$5	Depending on the plant capacity
PP Pipe	Extrusion	\$0.2 to \$5	Depending on the plant capacity
FRP Pipe	Filament Winding	\$0.5 to \$5	Depending on the type of filament winding and plant production Capacity

Developing Capabilities in Multilayer Plastic Pipes and Anti-Microbial Plastic Pipes Provide Strategic Growth Paths

Strategic Considerations in Plastic Pipe Market

Develop Capabilities

- Players of plastic pipe market can focus to increase their capabilities to fulfill multilayer plastic pipes requirements in gas distribution
- Increase in capabilities to match up with anti-microbial plastic pipes to improve hygiene
- Investments to increase competencies in advanced plastic pipes like eco-friendly PE and ABS pipes
- Research and development activities to develop low cost plastic pipes

Alliances/In-Organics Expansions

- Strategic collaborations / acquisitions to increase geographical presence in growing countries
- Develop alliance to penetrate in new applications
- Collaborative activities to develop advanced plastic pipe technologies

Source: Lucintel

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Lucintel - At a Glance

- Premier management consulting and market research firm. Founded in 1998.
- Deep global insights into major industries. Team of over 120 analysts / consultants across globe
- Management comprised of PhDs, MBAs, and subject matter experts. Head quarter in Dallas, USA.

Conducted 500+ consulting projects across industries for 3M, Audi, Dupont, Carlyle, GE, etc.

Consulting Services



Why Lucintel

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Strategic advice: Over 20 years of proven global strategic management consulting experience

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1000+ Clients in 70 Countries Value Our Service



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Thank You