

Global Gum Arabic Market: Industry Analysis and Opportunity Assessment 2017-2025

By

Vaibhav Maurya

*Dissertation submitted for the partial fulfillment of the
MBA Pharmaceutical Management*

Academic year, 2015-2017



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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Vaibhav Maurya of MBA Pharmaceutical Management from The IIHMR University, Jaipur has undergone internship training at Future Market Insights, Pune from 6th February, 2017 to 5th May, 2017.

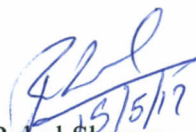
The Candidate has successfully carried out the study designated to his during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish his all success in all his future endeavors.



(Col.) Dr. Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur



Mr. Rahul Sharma
Assistant Professor
The IIHMR University, Jaipur

May 5, 2017

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During the project tenure in the organization, we found **Vaibhav Maurya** is hard working, sincere and inquisitive.

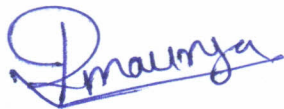
We wish him all the best and success in his future endeavors.


Chief Operating Officer

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This is to certify that the dissertation titled **“Global Gum Arabic Market: Industry Analysis and Opportunity Assessment 2017 - 2025”** submitted by **Vaibhav Maurya** Enrollment No. **IIHMR-U/01/2015-17/0049** under the supervision of **Mr. Rahul Sharma** for award of **MBA Pharmaceutical Management** of the University carried out during the period from **6th February 2017 to 5th May 2017** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.



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This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **“Global Gum Arabic Market: Industry Analysis and Opportunity Assessment 2017-25”**



Signature of student

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Vaibhav Maurya
MBA PM 2nd year,
Batch 2015-17

Executive summary

In this report, the gum Arabic market is segmented on the basis of gum type and application. By gum type, the acacia Senegal segment is expected to reach US\$ 274.6 Million in terms of value, with a significantly high CAGR of 5.2% during the forecast period [1]. By application, the food and beverages segment is expected to witness comparatively high CAGR of 5.7% during the forecast period. The market in Europe is expected to account for 36.6% revenue share of the global market by the end of 2025. Furthermore, markets in developing regions such as MEA and Asia Pacific are expected to record significantly high CAGRs during the forecast period

Drivers

- ☐ Gum Arabic as instant soluble solution
- ☐ Benefits as a natural dietary fiber
- ☐ Increasing demand for naturally derived gum Arabic from food and beverages industry
- ☐ Increasing application of gum Arabic in pharmaceutical industry
- ☐ Growing consumer preference for Organic Formulations
- ☐ Growing demand in other industrial applications

Restraints

- ☐ Availability of substitutes for gum Arabic as binders
- ☐ Dependency on few gum Arabic suppliers/sources

Opportunities

- ☐ Gum Arabic products with clean labeling
- ☐ Growing scope in dentistry

Trends

- ☐ Manufactures are Focused on Increasing Business horizons for gum Arabic
- ☐ Increasing adoption owing to high dietary fiber content
- ☐ Powder encapsulation with instant soluble gum Arabic
- ☐ Manufacturers filing petition for health claims promoting benefits of gum Arabic products

Overall Market Approach

Manufacturers: Focus on developing innovative products to retain market share

- ❑ **Solution Approach:** Strengthen partnerships with an extensive network of high quality raw material suppliers in Africa to ensure security of supply
- ❑ **Consolidation:** Manufacturers of gum Arabic are focusing on expanding business horizons in order to enhance production capacity and meet increasing customer demand in various regions

Target Application

- ❑ **Gum Arabic as dietary fiber:** Increasing adoption owing to high dietary fiber content of gum Arabic in the food and beverages industry
- ❑ **Pharmaceutical industry:** Gum Arabic is colorless, tasteless, odorless, and highly water-soluble. These properties allow food technologists to utilize gum Arabic in dry spray preparations in powder encapsulation, for application in the pharmaceutical industry.

Target Geographies

- ❑ **Asia Pacific:** Asia Pacific is becoming a key region for gum Arabic product manufacturers/processors. Demand for gum Arabic is significantly in countries such as China, Japan, and Australia.
- ❑ Among all the regions, **North America, Europe, and the Middle East** account for major market share, and this is further expected to increase steadily over the forecast period

Differentiating Strategy

- ❑ **Health Claims:** Manufacturers are focusing on promoting health benefits of gum Arabic and offering health claims with supporting clinical evidence for end products
- ❑ **Exploring New Application:** Manufacturers are focusing on nutritional claims of gum Arabic as organic or high fiber products

1. Introduction

Gum acacia, also known as gum arabic, is the dried exudate gathered from acacia trees that grow in the Sahelian region of Africa. It is widely used as emulsifies & stabilizes flavors in beverages, forms films and coatings in panned confections, enhances mouth feel in beverages, strong adhesive and binding properties. These exudates are the result of the wound response to injury in the plant species from which they are harvested. This process (gummosis) and the molecular structure and composition of these exudates are of immense interest and the study of which, form the basis of numerous basic and applied research projects throughout the globe [18]. Gum arabic (*Acacia senegal*) is a pale white to orange-brown solid, which breaks with a glassy fracture. The best grades are in the form of whole, spheroidal tears of varying size with a matt surface texture. When ground, the pieces are paler and have a glassy appearance. Gum arabic (*Acacia seyal*) is more brittle than the hard tears of gum arabic (*Acacia senegal*). [12]

1.1. Review of literature

Production of gum arabic (GA) is concentrated in African countries such as Sudan, Chad, Nigeria, and others, these countries export 80% of production to other countries such as France and the U.S., which are the major importers of gum arabic. The use of GA dates back to the second millennium BC when the Egyptians used it as an adhesive and ink. Throughout the time, GA found its way to Europe and it started to be called "gum arabic" because was exported from Arabian ports [19].

Chemically, GA is a complex mixture of macromolecules of different size and composition (mainly carbohydrates and proteins). Today, the properties and features of GA have been widely explored and developed and it is being used in a wide range of industrial sectors such as textiles, ceramics, lithography, cosmetics and pharmaceuticals, encapsulation, food, etc. Regarding food industry, it is used as a stabilizer, a thickener and/or an emulsifier agent (e.g., soft drink syrup, gummy candies and creams)

In the pharmaceutical industry, GA is used in pharmaceutical preparations and as a carrier of drugs since it is considered a physiologically harmless substance. Additionally, recent studies have highlighted GA antioxidant properties, its role in the metabolism of lipids, its positive results when

being used in treatments for several degenerative diseases such as kidney failure, cardiovascular and gastrointestinal.

1.2. Rationale

- To study and understand related acceptance of gum arabic in various product offerings across different sectors through global analysis and opportunity assessment in covered different geographies

2. Objective of the study

- To analyze the various types in which gum arabic is available across the globe
- To perform market assessment for gum arabic in terms of value (US\$ Million) across covered different geographies
- To identify factors affecting the gum arabic market as compared to overall food hydrocolloids market

3. Research Question

- To analyze how gum arabic market is shaping up in next eight years?

4. Research Methodology

4.1. Research design

- The research study is descriptive study

4.2. Data collection

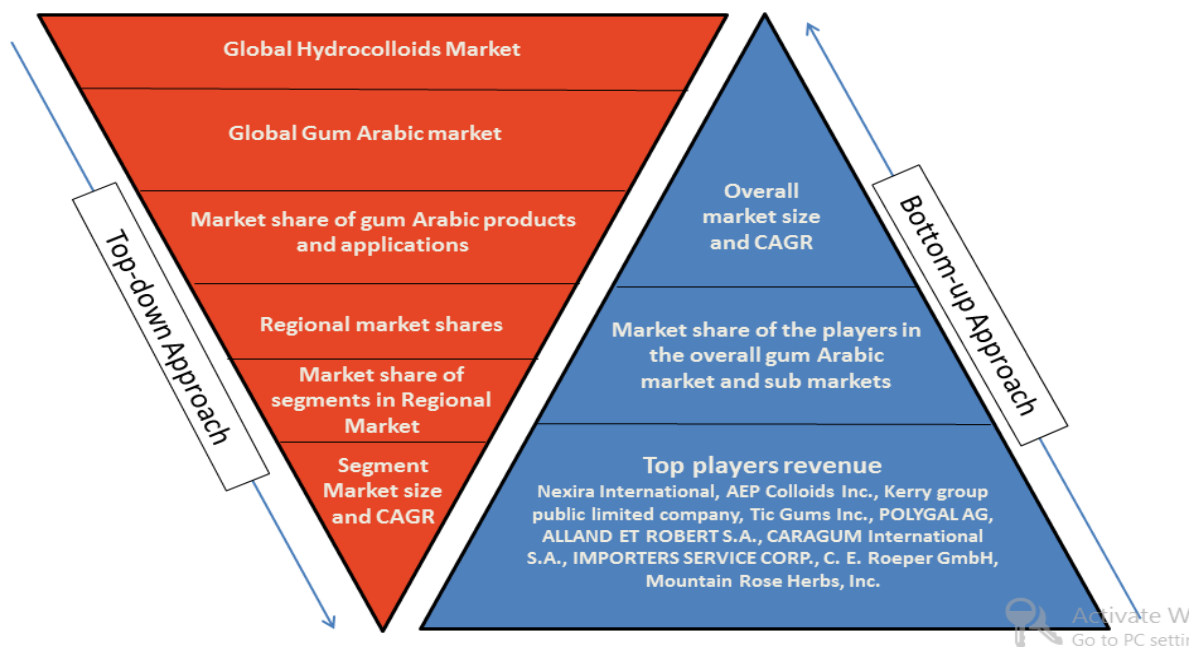
- **Study Duration:** 3 months.
- **Data Source:** Secondary data

- **Mode of data collection:** through government websites, company annual reports, press releases, media houses, etc.
- **Statistical Analysis Software:** MS Excel
- **Websites:** www.trademap.org, www.global.factiva.com,

4.3. Approach used for data Collection

➤ Approaches for Market Breakdown:

- Bottom-up and Top-down approach
- Data triangulation



Triangulated data validation approach will be adopted for sizing the market for gum arabic. The market will also analyzed by considering the revenue from the key players operating in this segment. This process involves analysis of various annual reports, Trade map data, investor's presentations, SEC filings, 10k reports, and press releases.

5. Market Assessment

Following is the assessment of the gum arabic market to determine the global potential of gum arabic in food hydrocolloids industry:

5.1 Parent Market Overview

Hydrocolloids are basically colloidal long chain of polymers which are composed of fine particles dispersed in water. Depending on the quantity of the medium such as water; these hydrocolloids exist as gels or semi-liquid solutions. Hydrocolloids is closely tied up with food and beverages industry for applications such as natural emulsifiers and binding agent owing to its exceptional ability to modify the rheology of the system to which it is added. Major hydrocolloids available in the market are as follows:

- Gelatin
- Pectin
- Agar
- Guar Gum
- Carrageenan
- Xanthan Gum
- Locust Bean Gum
- Alginates
- Gum arabic
- Others

5.2. Target Market

Gum arabic is a natural emulsifier and a stabilizer extracted as hardened sap from the branches of acacia Senegal and acacia seyal trees. Production of gum arabic is concentrated in African countries such as Sudan, Chad, Nigeria, and others. It is an oligopoly market, where Sudan accounts for around 80% of the global volume of gum arabic produced.

6. Market Taxonomy

On the basis of gum type, global gum arabic market is divided into:

- Acacia Senegal
- Acacia Seyal

On the basis of application, global gum arabic market is divided into:

- Food and Beverages
- Pharmaceuticals & Dietary Supplements
- Personal Care & Cosmetics
- Paints & Inks
- Others (Meat processing, etc.)

On the basis of region, global gum arabic market is divided into:

- North America
- Europe
- Asia Pacific
- Rest of the world

7. Market Dynamics

Gum arabic market is analyzed on the basis of certain factors that drive the growth of the markets:

7.1. Drivers

 Gum arabic as instant soluble solution:

- Increasing demand for more easily soluble gum arabic among consumers in the global market is encouraging manufacturers to develop and produce new formulations such as instant soluble gum arabic
- Instant soluble gum arabic solution is used in dry spray preparations for powder encapsulation, which is a technique that helps in encapsulation of flavors, aromas, and colors
 - In September 2015, Europe based Alland & Robert S.A, which is a manufacturer of gum acacia products, introduced Instant Soluble Gum Acacia 338i for powder encapsulation applications

✚ Benefits as a natural dietary fiber:

- Natural dietary fiber is essential for lowering blood cholesterol and regulating blood sugar levels. Gum arabic contains 80–85% natural soluble fiber, which helps to bind all insoluble fiber present in a diet. Increasing demand for high dietary fiber content products among consumers globally is resulting in an increasing number of manufacturers producing products with enhanced nature of gum arabic. This increasing demand is also expected to fuel growth of the global gum arabic market over the forecast period, but to a steady, moderate extent.
 - *In November 2016, Europe based Nexira International – a manufacturer of gum arabic products – announced a new health claim for Fibregum, which is a product containing dietary fiber that is beneficial for glycemic index reduction*

✚ Increasing demand for naturally derived gum arabic from food and beverages industry:

- Demand for gum arabic for application as a natural binder in the bakery and confectionery industry is relatively high, and it poses no harm if consumed, unlike synthetic or artificial binders
- Gum arabic is widely used in the food and beverage industry as an emulsifier in a variety of product applications. However, properties such as permitting dispersion of oil into water and stabilizing the beverages to avoid precipitation. Gum arabic is stable in low pH environments and is a relatively essential ingredient for beverages. Also, it exhibits low viscosity properties in water and other liquids without changing mouth feel, flavor or texture of the original beverage. These advantages are encouraging key players in the global food and beverages industry to adopt and increase applications of gum arabic in various other food products, thus driving growth of the overall gum arabic market to a significant extent. In addition, this trend is expected to continue over the forecast period.

✚ Increasing application of gum arabic in pharmaceutical industry:

- Gum arabic is used in anti-bacterial cream in the pharmaceutical industry and has properties to inhibit growth of periodontics bacteria, which is brought on from dental decay and also inhibits decomposition of plaque
- Gum arabic used as an ingredient in pharmaceutical as tablet binder, film forming agent, and suspending agent. These advantages are encouraging key players in the pharmaceutical industry to adopt gum arabic as an ingredient for various applications and demand is expected to remain steady over the forecast period.

✚ Growing Consumer Preference for Organic Formulations:

- Increasing consumer preference for plant-derived and natural products is driving growth of the global gum arabic market. This is attributed to organic products offering better profit margins as these are priced higher when compared to conventional gum arabic products.
- Adoption of organic formulations has been on a consistently increasing trend since the past decade, and the trend is expected to continue over the forecast period
- Gum arabic directly extracted from the acacia tree in the form of hardened sap, thereby imparting an organic nature to gum arabic products
 - *In January 2014, the U.S. Food and Drug Administration (FDA) approved expanded use of acacia gum as organic, clean label products*

Growing demand in other industrial applications

- Demand for gum arabic is increasing for various applications, including paper manufacturing, meat processing, processing vegetable juices, and as an additive in chewing gums. Manufacturers are developing modified gum arabic solutions to cater to demand arising from these industries.
- Tic Gums Inc. offers a range of products including TICAmulsion and TIC Pretested gum arabic spray dry powder used as modified gum acacia and as an emulsifier for meat processing to reduce costs. Gum arabic emulsifies in flavor-oil-water emulsions with low viscosity.

7.2. Restraints

Availability of substitutes for gum arabic as binders:

- Due to lower price and ease of availability of synthetic binders, end users consider synthetic substitutes as alternatives to gum arabic. Synthetic binders do not require pre-hydration and are used as an agent with lower foaming capability along with less sediment formation. Products produced from synthetic binders cost less when compared to gum arabic during production. As a result of these advantages, preference for gum arabic has been witnessing significantly high traction in the recent past.
- Polyvinyl alcohol is a water-soluble synthetic polymer used in the papermaking industry. Due to low cost and no need for preservatives, it is widely preferred over gum arabic as a binder in this industry.

Dependency on few gum arabic suppliers/sources:

- Gum arabic from Acacia Senegal and Acacia seyal trees is sourced from Sudan, Chad, Nigeria, and some other African countries. These countries are the major producers of gum arabic as the climatic conditions are ideal for cultivation and harvesting of these trees.
- Uncertain climatic changes and political instability, and price fluctuations in these regions have been some major factors hampering the supply of gum arabic in the past
 - *In August 2016, Sudan's North Kordofanian state faced droughts resulting from soil erosion, and this is further anticipated to result in decline in gum arabic production in the near future*

7.3. Opportunities

Gum arabic products with clean labeling:

- Preference for products with natural ingredients is trending among manufacturers as well as consumers currently in the global market. Owing to this trend, an increasing number of manufacturers are focusing on procuring food ingredients and raw material that have been processed under ideal or suitable conditions. This includes processes such as cleaning, sorting, and grading, wherein the processing company has stringently adhered to various norms and regulations related to extraction practices and hygiene etc. This owes to need to reduce the impact of production on the environment.
- Manufacturers of gum arabic with clean labeling is a emerging trend expected to offer a competitive and sustainable advantage over manufacturers of synthetic ingredients
- Also, from the end users perspective, products should have clean labels recognition such as being environment-friendly and safe to consume, along with ensured quality checks at every step of the production process

Growing scope in dentistry:

- Gum arabic is a complex polysaccharide with a neutral pH consisting of mixed calcium, potassium, magnesium, and other salts, which enhances dental remineralization, along with some antimicrobial activity that offers potential for use in dentistry. Substantial clinical evidence has been found regarding the use of gum arabic for alleviating chronic gingivitis and plaque formation.
- Gypsum added with gum arabic and calcium hydroxide is known to reduce L/P ratio and increase stability of gypsum. Hence, it can be used as a coating agent for enamel lesions.

7.4. Trends

+ Manufactures are Focused on Increasing Business horizons for gum arabic:

- Manufacturers of gum arabic are focusing on expanding business horizons in order to enhance production capacity and meet increasing customer demand in various regions
 - *In September 2016, Ireland based KERRY GROUP PUBLIC LIMITED COMPANY, which manufactures gum arabic products announced acquisition of Red Arrow Company, which is a manufacturer of natural flavors and ingredients. The objective of this acquisition was to expand its business and strengthen its position in the global market.*
 - *In September 2015, U.S. based AEP Colloids Inc., which is a manufacturer of gum arabic, introduced organic gum arabic in order to expand its product portfolio and cater to demand from health conscious consumers*

+ Increasing adoption owing to high dietary fiber content:

- Increasing adoption of gum arabic owing to high content of dietary fiber, which aids in healthy digestion and bowel movement. Gum arabic could benefit patients suffering from constipation and irregular bowel movement and an increasing number of manufacturers are focusing on securing regulatory clearance for inclusion as an ingredient in food products, especially in Europe.
 - *In November 2016, the European Food Safety Authority (EFSA) on the backdrop of scientific consensus basis concluded that gum arabic can be included as a dietary fiber for application in Fibregum, which is a product of Nexira International*

+ Powder encapsulation with instant soluble gum arabic:

- Gum arabic is colorless, tasteless, odorless, and highly water-soluble. These properties allow food technologists to utilize gum arabic in dry spray preparations for powder encapsulation, which is a technique intended for encapsulation of flavors, aromas, and colors in powder form. Powder encapsulation has become an attractive approach to convert liquid food flavorings into a dry and free flowing powder form.
 - *In September 2015, Alland & Robert S.A – a manufacturer of gum acacia products – introduced Instant Soluble Gum Acacia 338i, which is a product for powder encapsulation applications*

+ Manufacturers filing petition for health claims promoting benefits of gum arabic products:

- Manufacturers are focusing on promoting health benefits of gum arabic and offering health claims with supporting clinical evidence for end products. Manufacturers are focusing on nutritional claims of gum arabic as organic or high fiber products.
- TICOrganic Gum arabic SF, which is a product offered by Tic Gums Inc., is a certified organic product. The company claims that gum arabic has various health benefits. Filing of claims by manufacturers is an emerging trend and is expected to fuel growth of the overall global gum arabic market over the forecasted period.

8. Global Gum Arabic Market Analysis - (Findings and Interpretation)

8.1. Global Gum Arabic Market Analysis and Forecast, 2017-2025

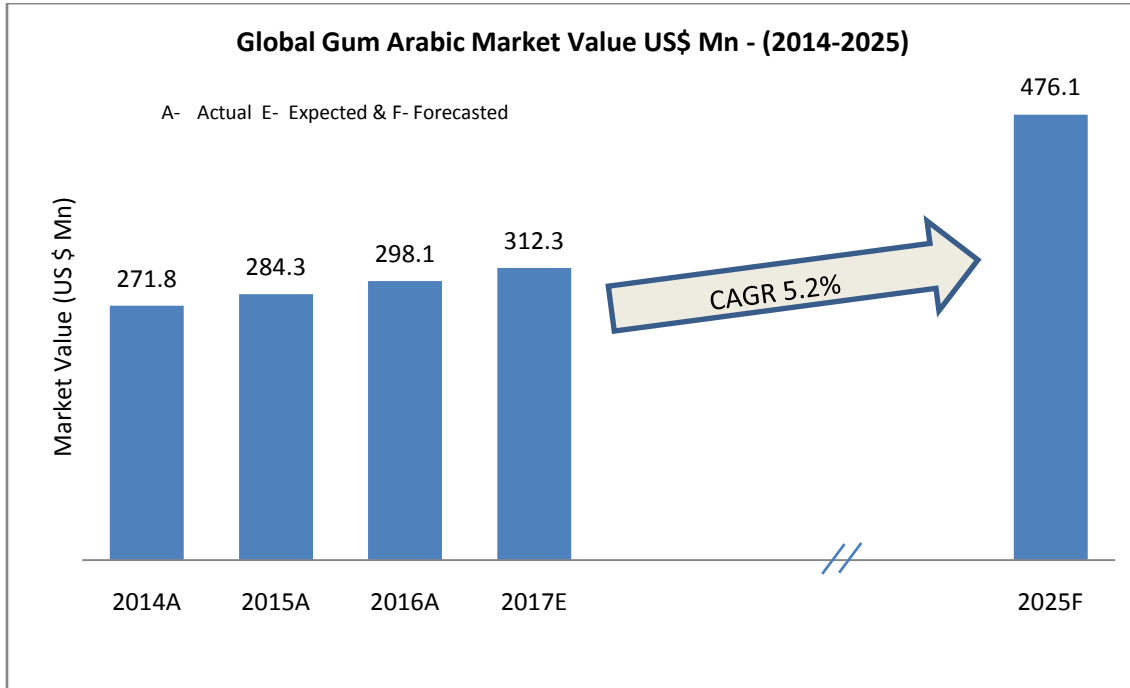


Figure 1: Indicates global gum arabic market value US\$ Million and forecast (2014-2025)

- In value terms, total gum arabic consumption stood at US\$ 284.3 Million in 2016, and is expected to reach US\$ 476.1 Million by 2024 with an anticipated CAGR of 5.2% during the forecasted period

Data Table:

Global	2014 A	2015 A	2016 A	2017 E	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR
Value	271.8	284.3	298.1	312.3	327.7	344.6	362.6	382.1	402.8	425.7	450.2	271.8	5.2%

Table 1: Global Gum Arabic Market Value (US\$ Million), 2014–2025

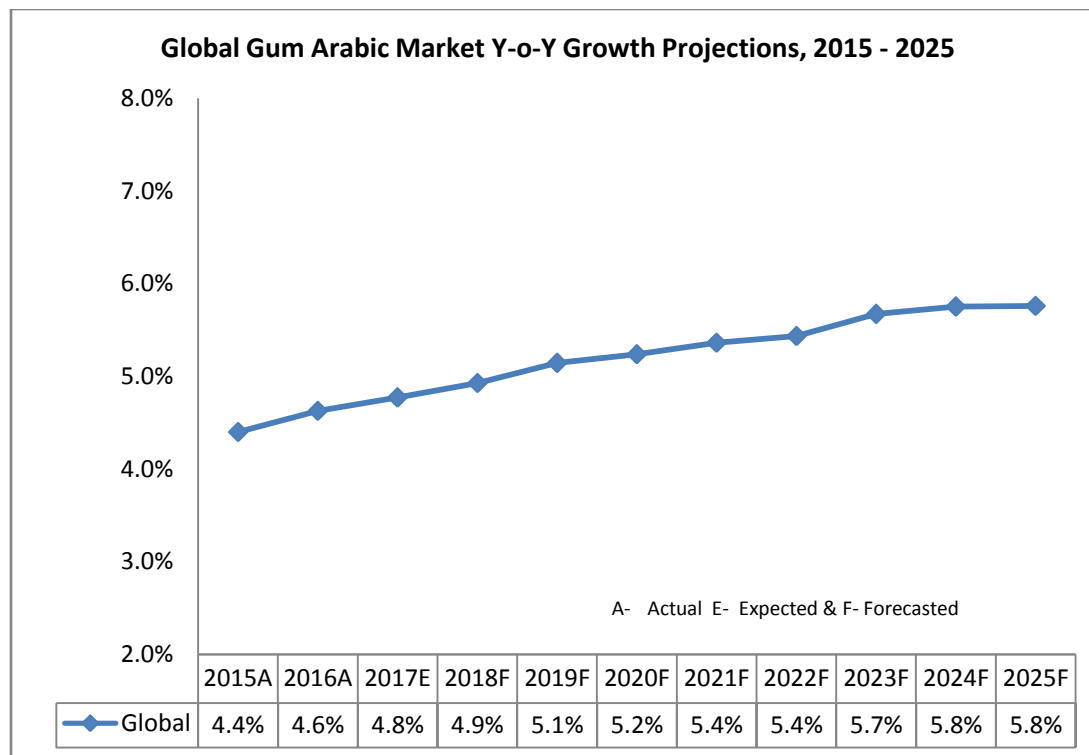


Figure 2: Indicates global gum arabic market Y-o-Y growth projections (2015-2025)

The global market for gum arabic is expected to register CAGR of 5.2% and steady growth rates over the forecast period

8.2. Global Gum Arabic Market Share by Gum Type

On the basis of gum type the gum arabic market is segmented into:

- Acacia Senegal
- Acacia Seya

The market is further analyzed through market share by gum type which is as followed:

8.2.1. Actual global gum arabic market share by gum type – 2016 (A)

- Acacia Senegal segment is dominating in the global gum arabic market with 58.4% market share in terms of value, followed by the acacia seyal segment, which account for market share of 41.6%. Acacia Senegal is high quality gum grade when compared to acacia seyal type and also has high pricing is the factor to drive the acacia Senegal gum segment

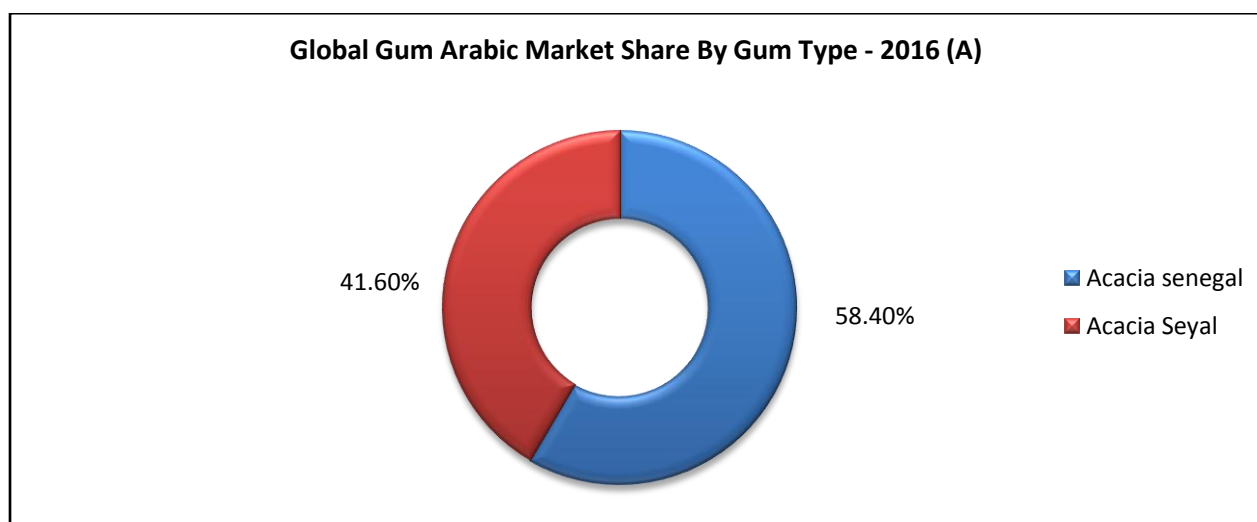


Figure 3: Indicates actual global gum arabic market share by gum type (2016)

8.2.2. Forecasted global gum arabic market share by gum type – 2025 (F)

- Acacia Senegal segment is projected to account for 54.3% market share in the global gum arabic market in terms of value, followed by the acacia seyal segment, which account for market share of 45.7%. Acacia Senegal segment will remain dominant over the forecast period due to its high consumption and consumer preference.

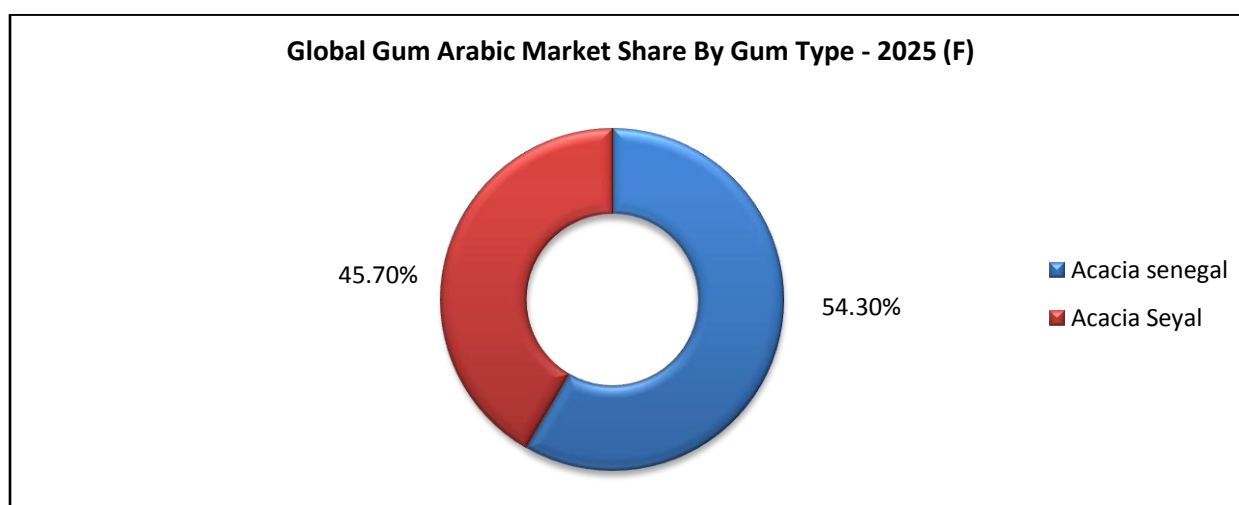


Figure 4: Indicates forecasted global gum arabic market share by gum type (2025)

8.3. Global Gum Arabic Market Share by Application

On the basis of application the gum arabic market is segmented into:

- Food and Beverages
- Pharmaceuticals & Dietary Supplements
- Personal Care & Cosmetics
- Paints & Inks
- Others (Meat processing, etc.)

The market is further analyzed through market share by application which is as followed:

8.3.1. Actual global gum arabic market share by application – 2016 (A)

- Food and beverages segment is dominating in the global gum arabic market with 58.7% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 15.2%. High consumption of gum arabic in terms of volume for application in the beverages industry is boosting the global market.
- Personal care & cosmetics is account for 11.2% market value share, followed by paints & inks segment, which account for market share of 8.4%

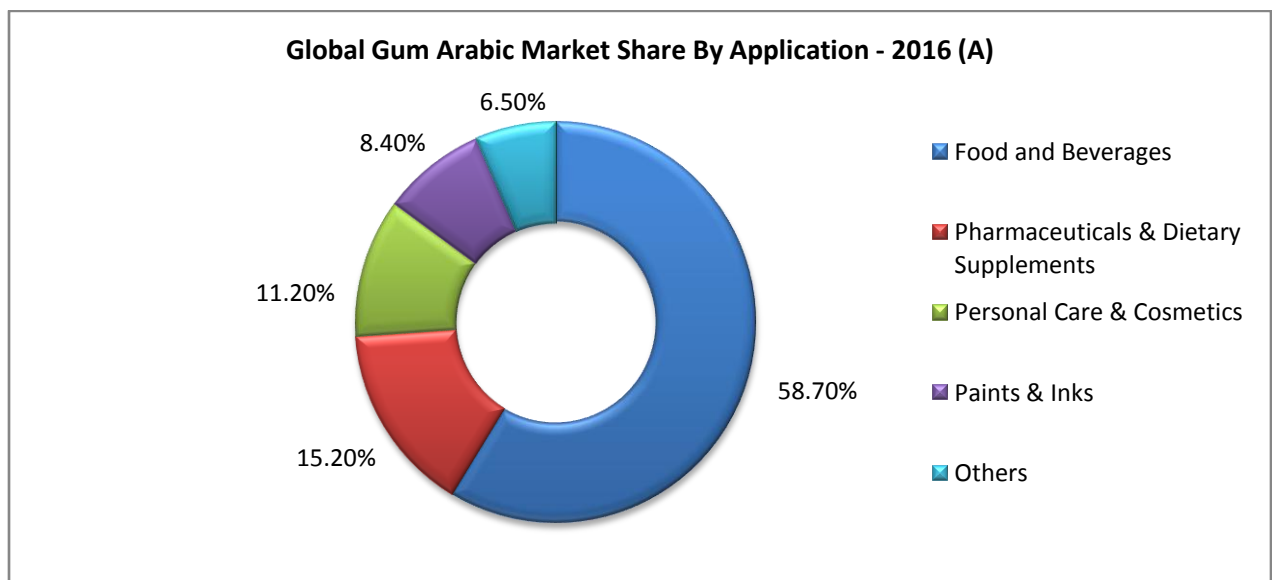


Figure 5: Indicates actual global gum arabic market share by Application (2016)

8.3.2. Forecasted global gum arabic market share by gum application – 2025 (F)

- Food and beverages segment is dominating in the global gum arabic market with 59.5% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 15.5%.
- Personal care & cosmetics is account for 11.0% market value share, followed by paints & inks segment, which account for market share of 7.8%.
- Food and beverages segment will remain dominant over the forecast period owing to various emerging application benefits such as dietary fiber for functional food and beverages and dietary supplement.

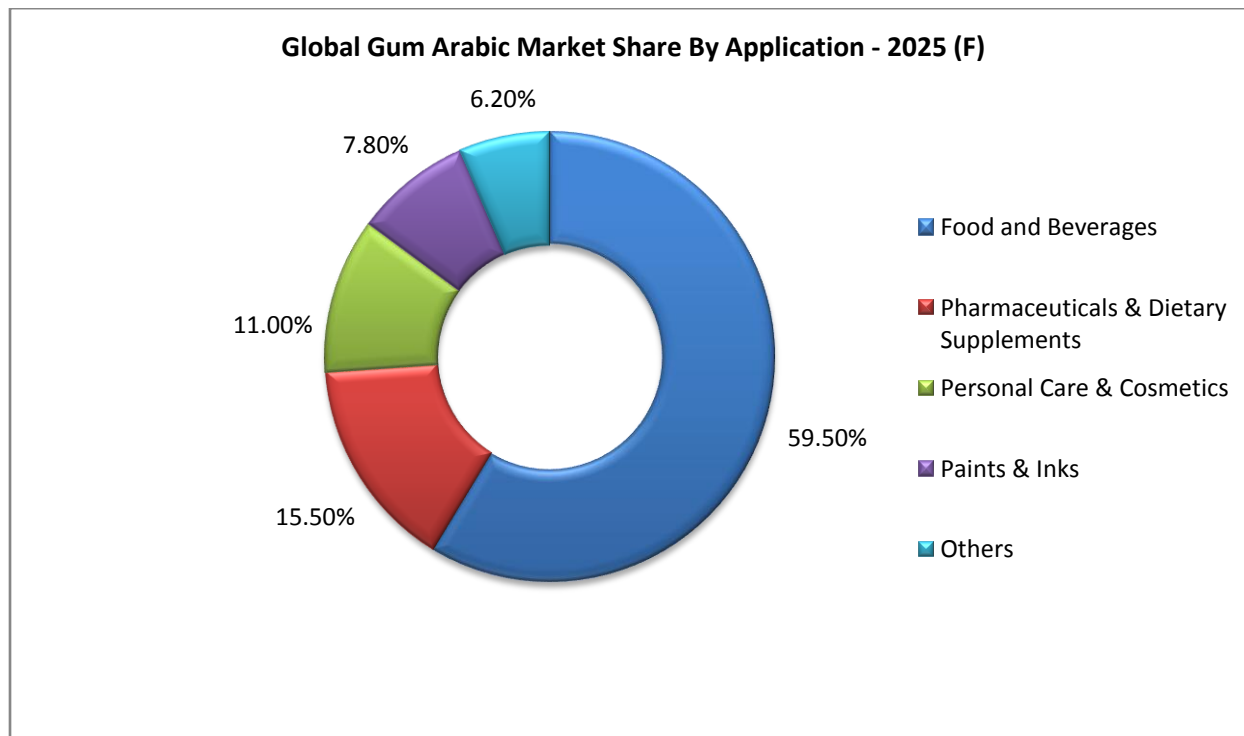


Figure 6: Indicates forecasted global gum arabic market share by Application (2025)

8.4. Global Gum Arabic Market Share by Region

On the basis of region the gum arabic market is segmented into:

- North America
- Europe
- Asia Pacific
- Rest of the world

The market is further analyzed through market share by region which is as followed:

8.4.1. Actual global gum arabic market share by region – 2016 (A)

- Asia Pacific market is dominating in the global gum arabic market with 37.3% market share in terms of value, followed by Europe market segment, which account for market share of 28.2%. Consumption of gum arabic in Asia Pacific is high due to large population and disposable income.
- North America market is account for 18.2% market value share, followed by rest of the world, which account for market share of 16.3%

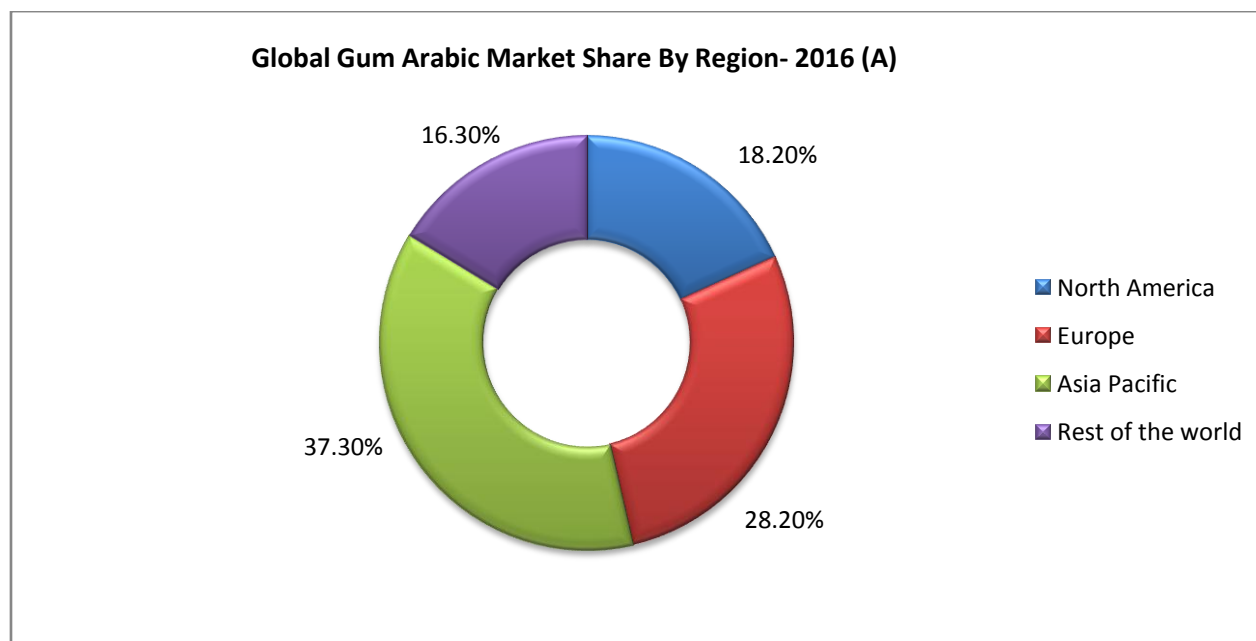


Figure 7: Indicates actual global gum arabic market share by region (2016)

8.4.2. Forecasted global gum arabic market share by region – 2025 (F)

- Asia Pacific market is dominating in the global gum arabic market with 32.3% market share in terms of value, followed by Europe market segment, which account for market share of 29.2%. Asia Pacific will lose share in terms of value due to demand of gum arabic is expected to grow from Europe, North America, and Rest of the world owing to application in the Pharmaceutical and confectionery industry.
- North America market is account for 20.2% market value share, followed by rest of the world, which account for market share of 18.3%

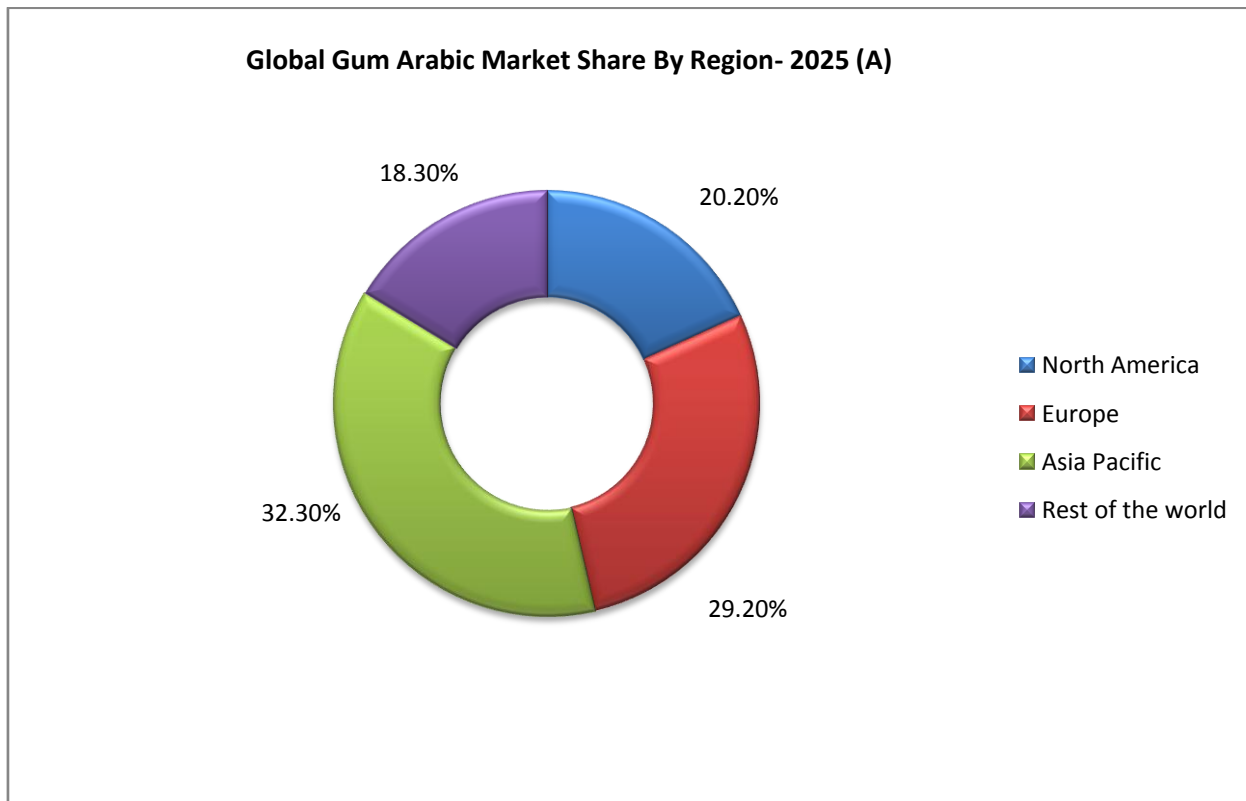


Figure 8: Indicates forecasted global gum arabic market share by region (2025)

8.5. Global Gum Arabic Market Attractiveness by Gum Type

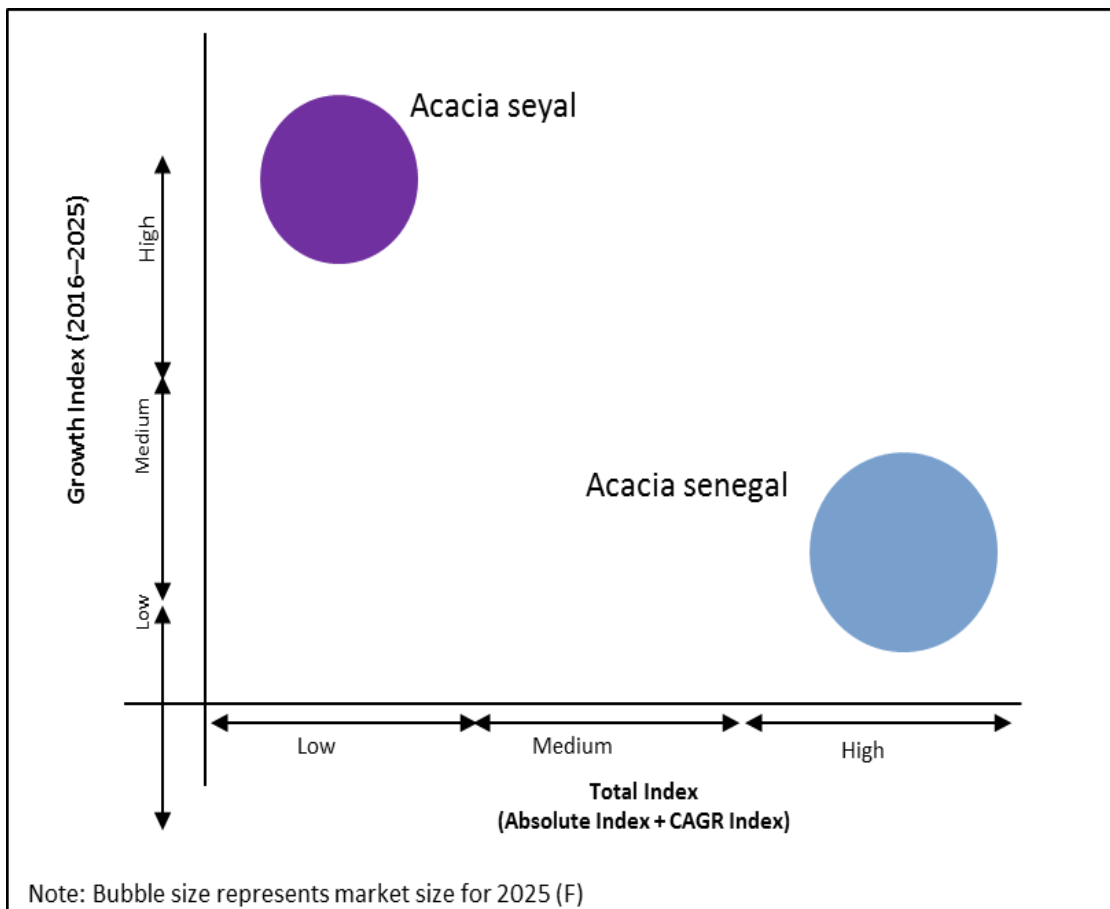


Figure 9: Indicates global gum arabic market attractiveness by gum type (2017-2025)

- Figure Indicates market share (2024), CAGR (2016–2024), and market size (2024), by gum type, and relative market attractiveness of the various segments in the global gum arabic market
- Among both gum type segments, acacia seyal segment is expected to register a high growth rate in terms of value with a CAGR of 5.4%, followed by acacia Senegal with an expected CAGR of 5.2% by 2024

8.6. Global Gum Arabic Market Attractiveness by Application

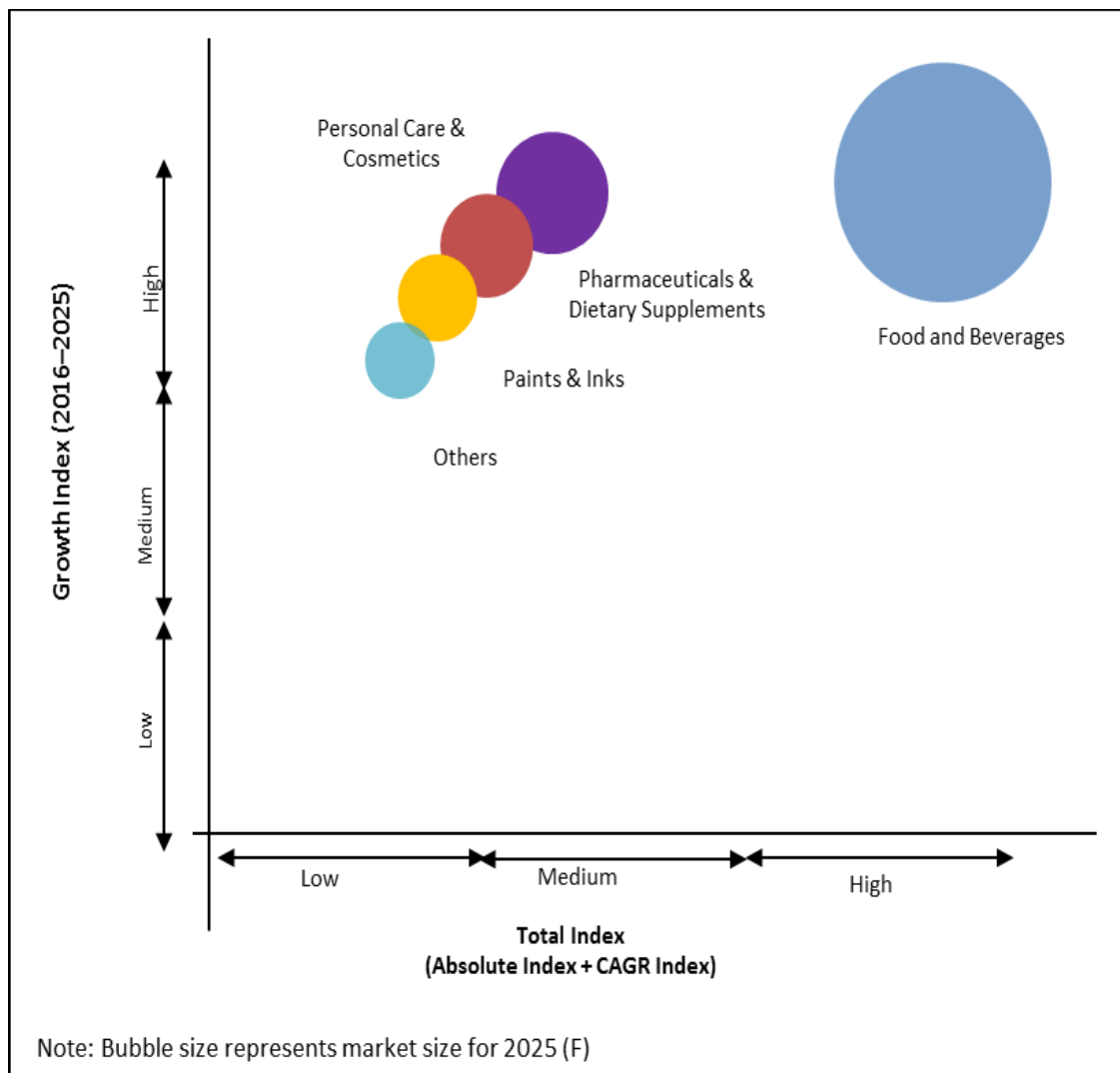


Figure 10: Indicates global gum arabic market attractiveness by application (2017-2025)

- Figure Indicates market share (2024), CAGR (2016–2024), and market size (2024), by application and relative market attractiveness of the various segments in the global gum arabic market
- Among all application segments, food and beverages segment is expected to register a high growth rate in terms of value with a CAGR of 5.7%, followed by pharmaceuticals & dietary supplements with an expected CAGR of 5.6% by 2024

8.7. Global Gum Arabic Market Attractiveness by Region

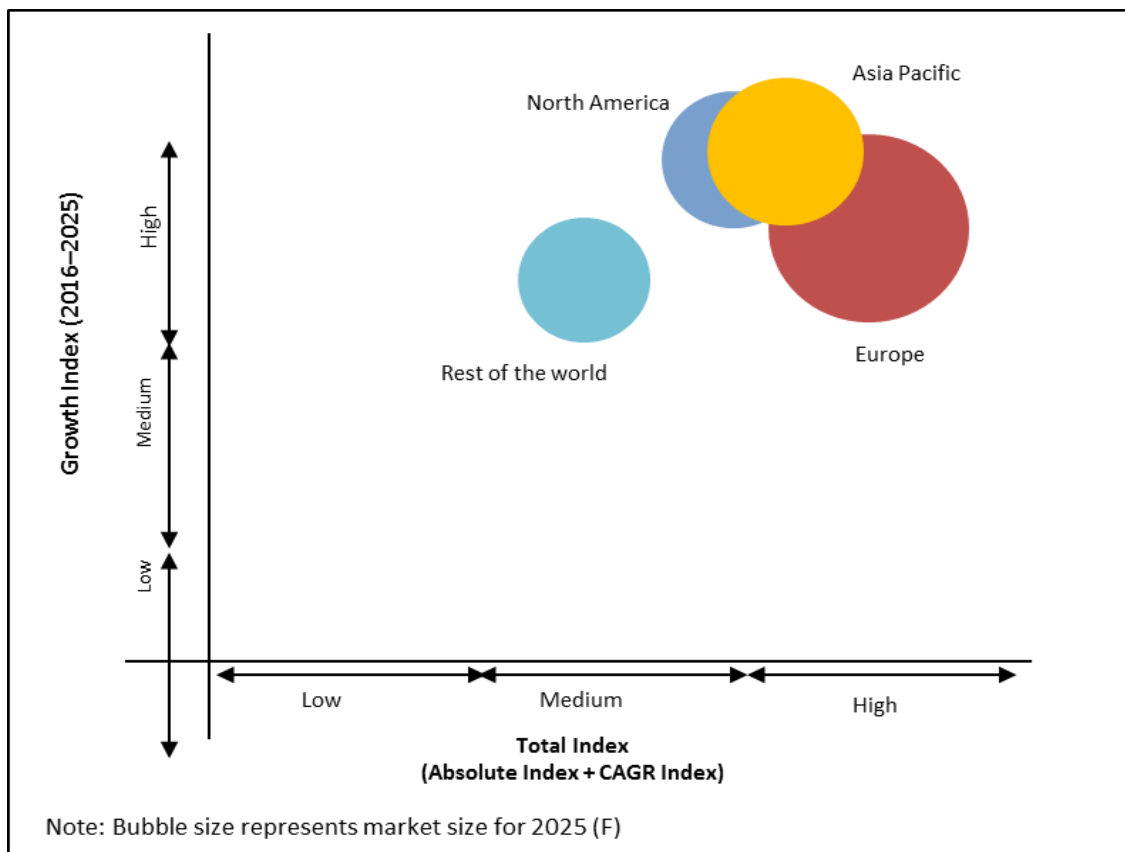


Figure 11: Indicates global gum arabic market attractiveness by region (2017-2025)

- Figure Indicates market share (2024), CAGR (2016–2024), and market size (2024), by region and relative market attractiveness of the various segments in the global gum arabic market
- Among all the countries, Asia Pacific market is expected to register a high growth rate in terms of value with a CAGR of 5.5%, followed by Europe market with an expected CAGR of 5.6% by 2024
- North America market is expected to register a relatively steady growth rate in terms of value with a CAGR of 5.2%, followed by rest of world market with an expected CAGR of 5.0% by 2024

9. North America Gum Arabic Market Analysis - (Findings and Interpretation)

9.1. North America Gum Arabic Market Analysis and forecast, 2017-2025

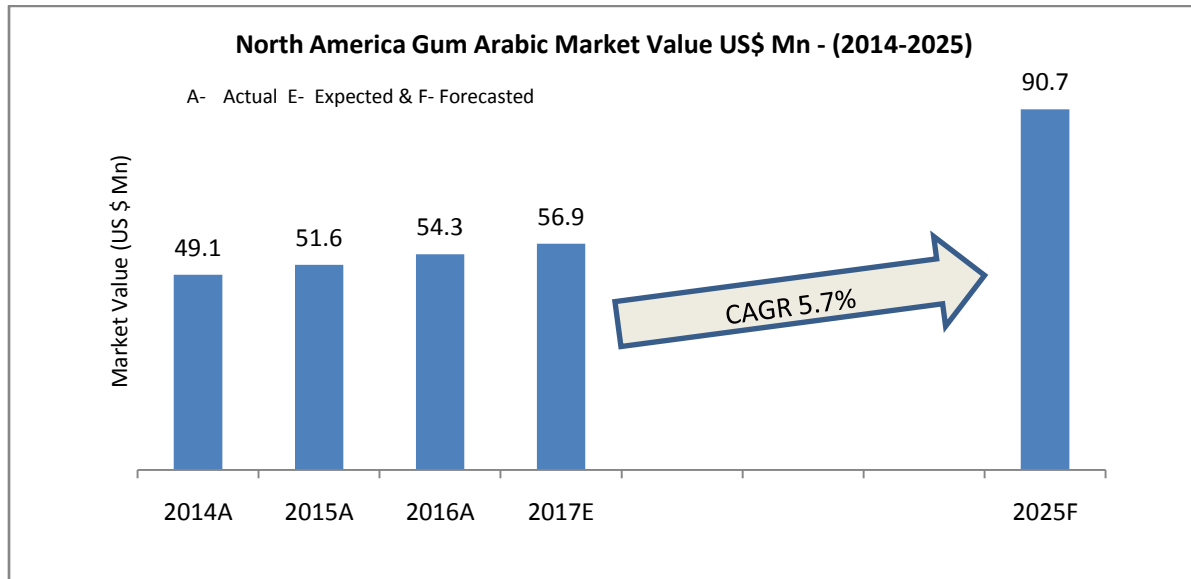


Figure 12: Indicates North America gum arabic market value US\$ Million and forecast (2014-2025)

- In value terms, North America gum arabic consumption stood at US\$ 54.2 Million in 2016, and is expected to reach US\$ 90.7 Million by 2024 with an anticipated CAGR of 5.7% during the forecasted period

Data Table:

North America	2014 A	2015 A	2016 A	2017 E	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR
Value	49.1	51.6	54.3	56.9	59.7	63.0	66.6	70.6	75.2	80.2	85.4	90.7	5.7%

Table 2: North America Gum Arabic Market Value (US\$ Million), 2014–2025

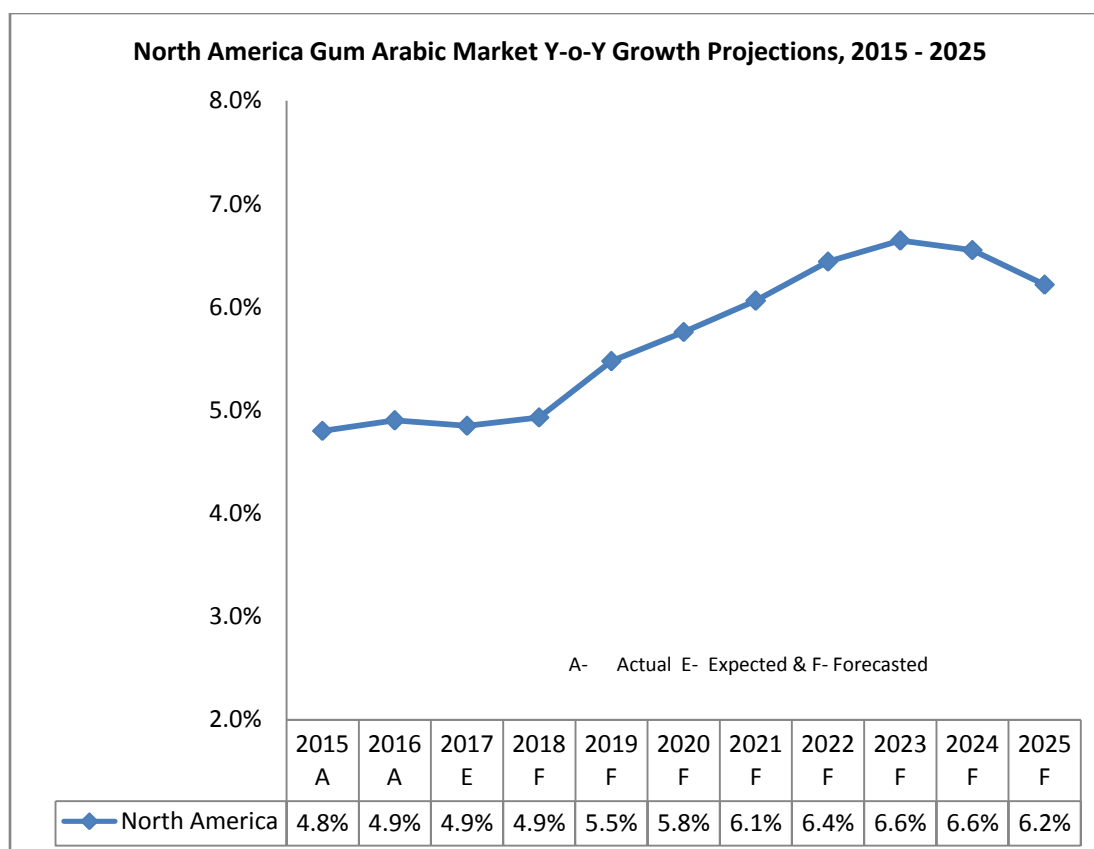


Figure 13: Indicates North America gum arabic market Y-o-Y growth projections (2015-2025)

The North America market for gum arabic is expected to register CAGR of 5.7% and steady growth rates over the forecast period

9.2. North America Gum Arabic Market Share by Gum Type

The market is further analyzed through market share by gum type which is as followed:

9.2.1. Actual North America gum arabic market share by gum type – 2016 (A)

- Acacia Senegal segment is dominating in the North America gum arabic market with 68.7% market share in terms of value, followed by the acacia seyal segment, which account for market share of 31.3%

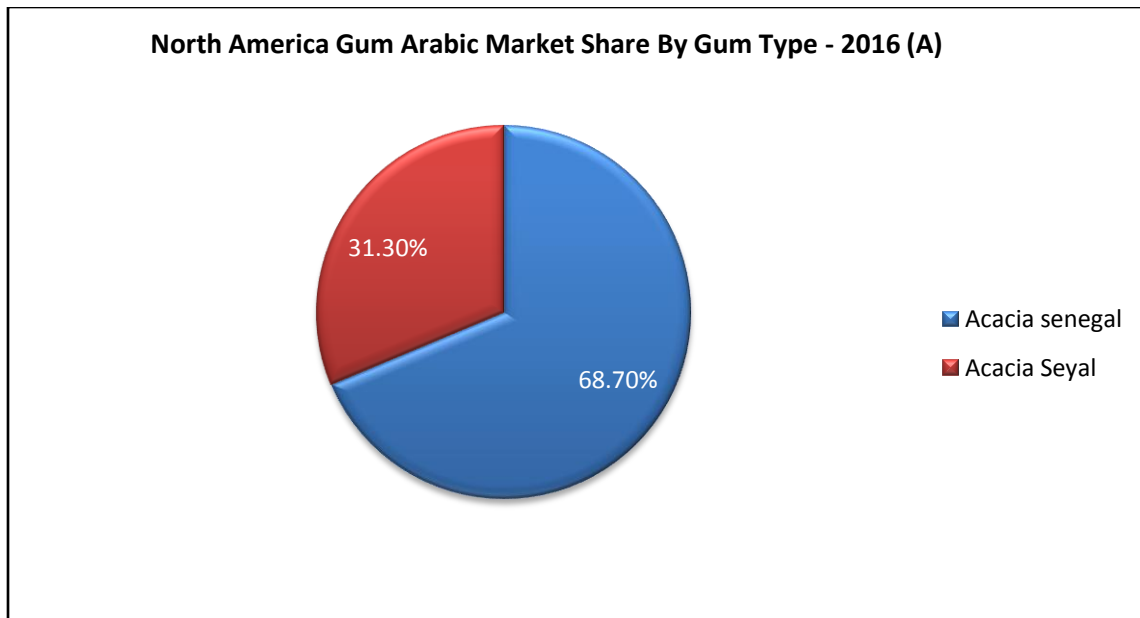


Figure 14: Indicates actual North America gum arabic market share by gum type (2016)

9.2.2. Forecasted North America gum arabic market share by gum type – 2025 (F)

- Acacia Senegal segment is dominating in the North America gum arabic market with 64.3% market share in terms of value, followed by the acacia seyal segment, which account for market share of 35.7%

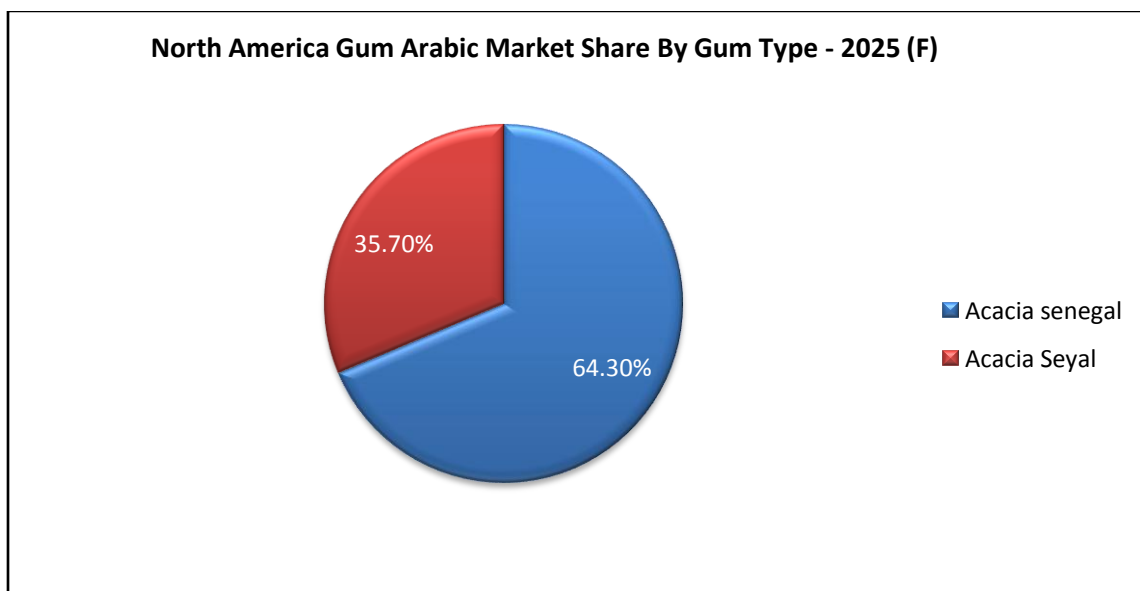


Figure 15: Indicates forecasted North America gum arabic market share by gum type (2025)

9.3. North America Gum Arabic Market Share by Application

The market is further analyzed through market share by application which is as followed:

9.3.1. Actual North America gum arabic market share by application – 2016 (A)

- Food and beverages segment is dominating in the North America gum arabic market with 63.5% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 13.3%
- Personal care & cosmetics segment is account for 11.6% market value share, followed by others segment, which account for market share of 6.1%

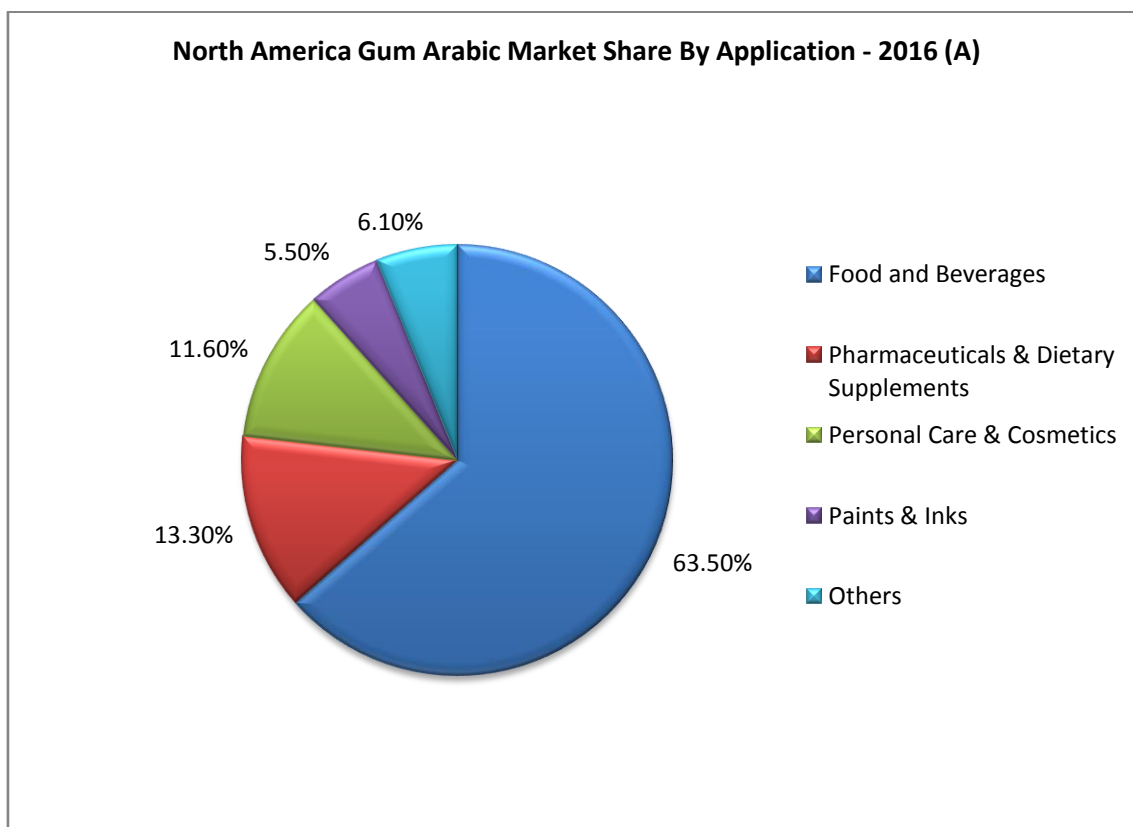


Figure 16: Indicates actual North America gum arabic market share by application (2016)

. 9.3.2. Forecasted North America gum arabic market share by application – 2025(F)

- Food and beverages segment is dominating in the North America gum arabic market with 67.2% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 11.3%
- Personal care & cosmetics segment is account for 10.6% market value share, followed by others segment, which account for market share of 5.7%

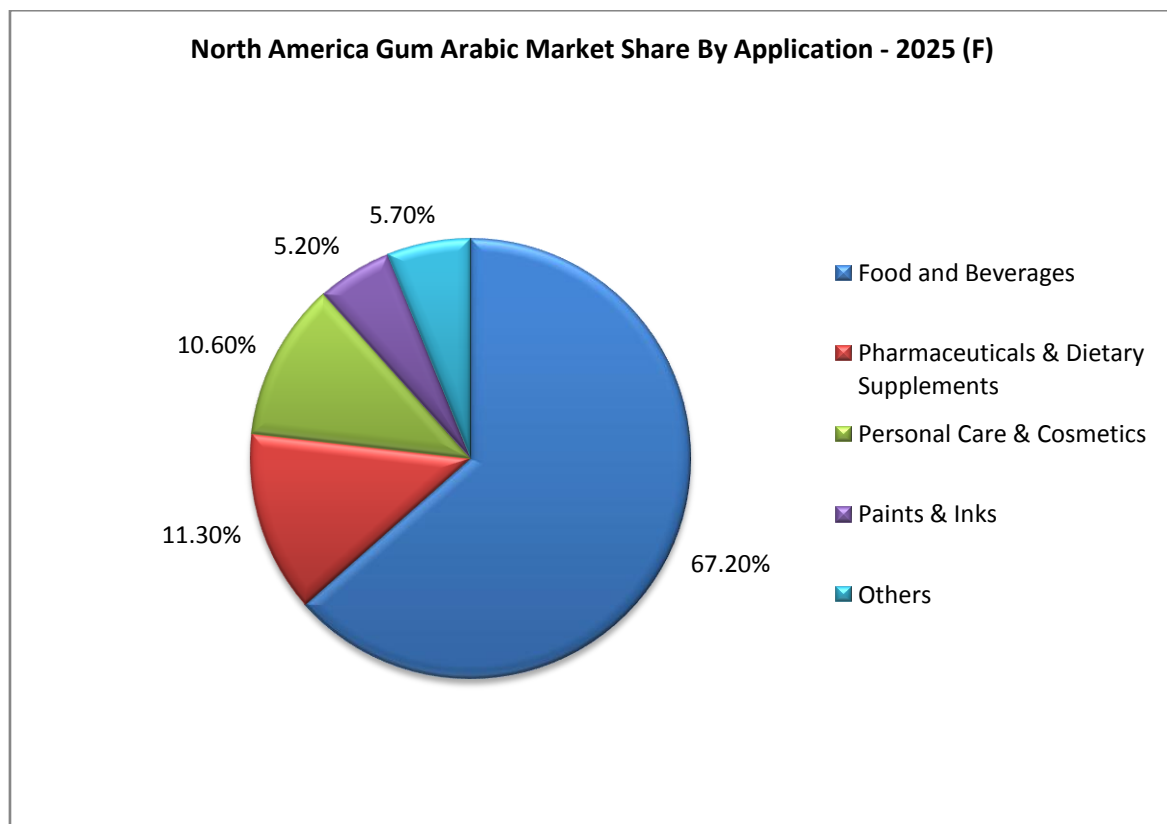


Figure 17: Indicates forecasted North America gum arabic market share by application (2025)

10. Europe Gum Arabic Market Analysis - (Findings and Interpretation)

10.1. Europe Gum Arabic Market Analysis and forecast, 2017-2025

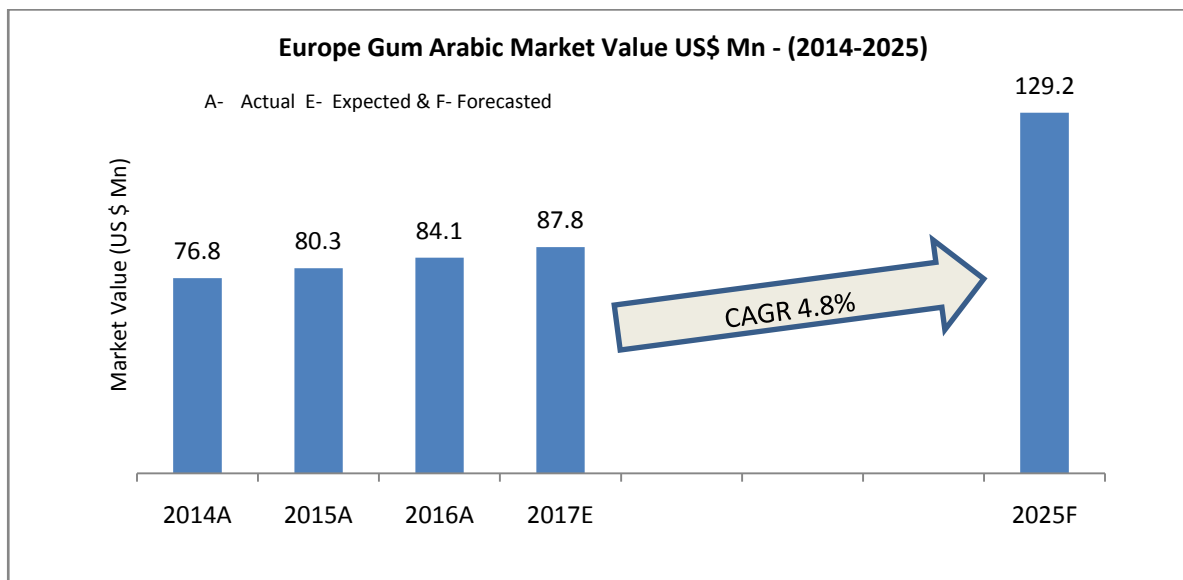


Figure 18: Indicates Europe gum arabic market value US\$ Million and forecast (2014-2025)

- In value terms, Europe gum arabic consumption stood at US\$ 84.1 Million in 2016, and is expected to reach US\$ 129.2 Million by 2024 with an anticipated CAGR of 4.8% during the forecasted period

Data Table:

Europe	2014 A	2015 A	2016 A	2017 E	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR
Value	76.8	80.3	84.1	87.8	91.7	96.1	100.9	106.0	111.3	117.0	122.9	129.2	4.8%

Table 3: Europe Gum Arabic Market Value (US\$ Million), 2014–2025

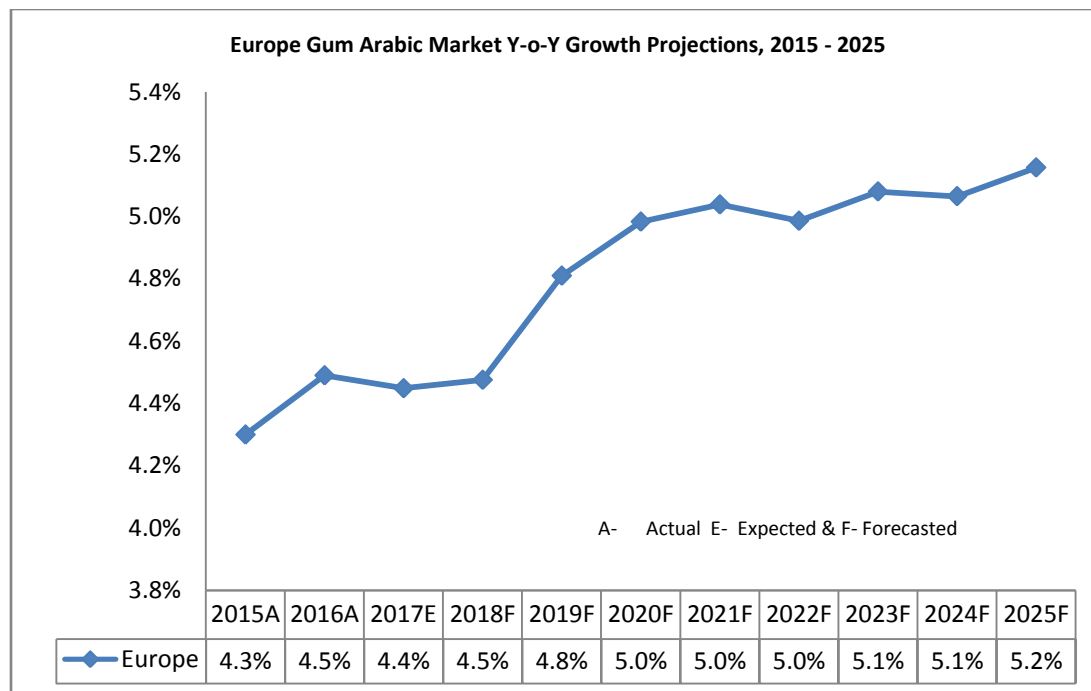


Figure 19: Indicates Europe gum arabic market Y-o-Y growth projections (2015-2025)

The Europe market for gum arabic is expected to register CAGR of 5.0% and steady growth rates over the forecast period

10.2. Europe Gum Arabic Market Share by Gum Type

The market is further analyzed through market share by gum type which is as followed:

10.2.1. Actual Europe gum arabic market share by gum type – 2016(A)

- Acacia Senegal segment is dominating in the Europe gum arabic market with 61.1% market share in terms of value, followed by the acacia seyal segment, which account for market share of 38.9%

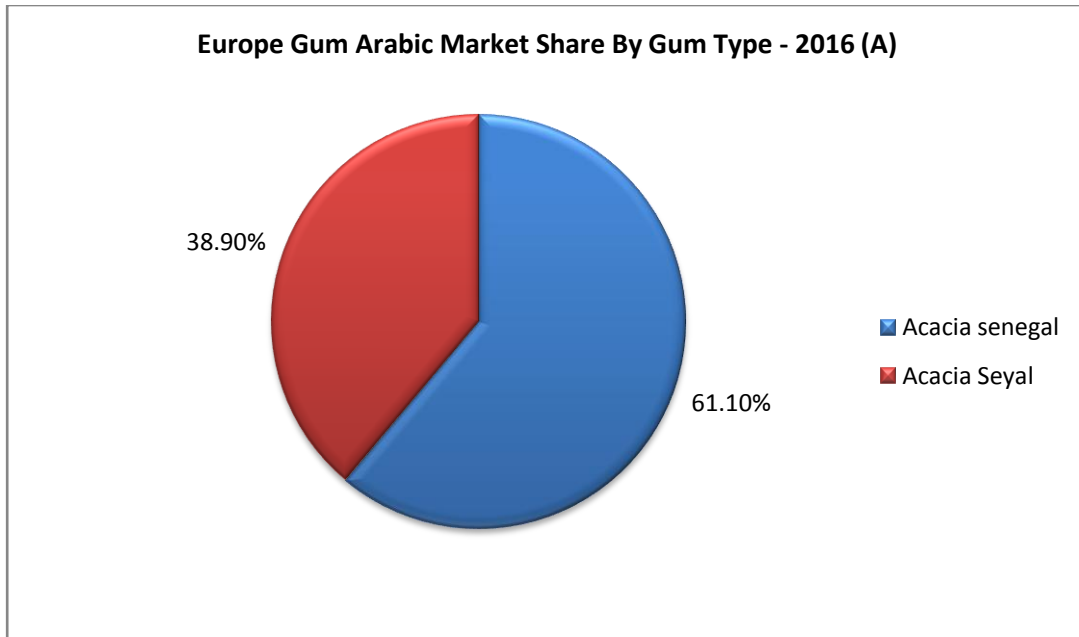


Figure 20: Indicates actual Europe gum arabic market share by gum type (2016)

10.2.2. Forecasted Europe gum arabic market share by gum type – 2025(F)

- Acacia Senegal segment is dominating in the Europe gum arabic market with 62.5% market share in terms of value, followed by the acacia seyal segment, which account for market share of 37.5%

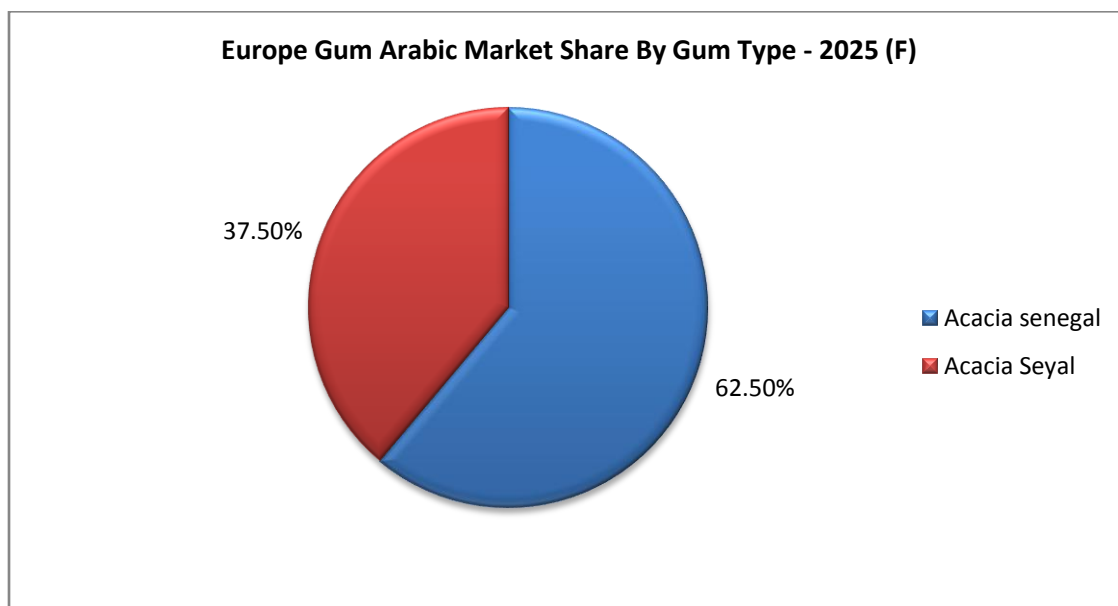


Figure 21: Indicates forecasted Europe gum arabic market share by application (2025)

10.3. Europe Gum Arabic Market Share by Application

The market is further analyzed through market share by application which is as followed:

10.3.1. Actual Europe gum arabic market share by application – 2016(A)

- Food and beverages segment is dominating in the Europe gum arabic market with 58.4% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 15.6%
- Personal care & cosmetics segment is account for 10.6% market value share, followed by paints and ink segment, which account for market share of 8.6%

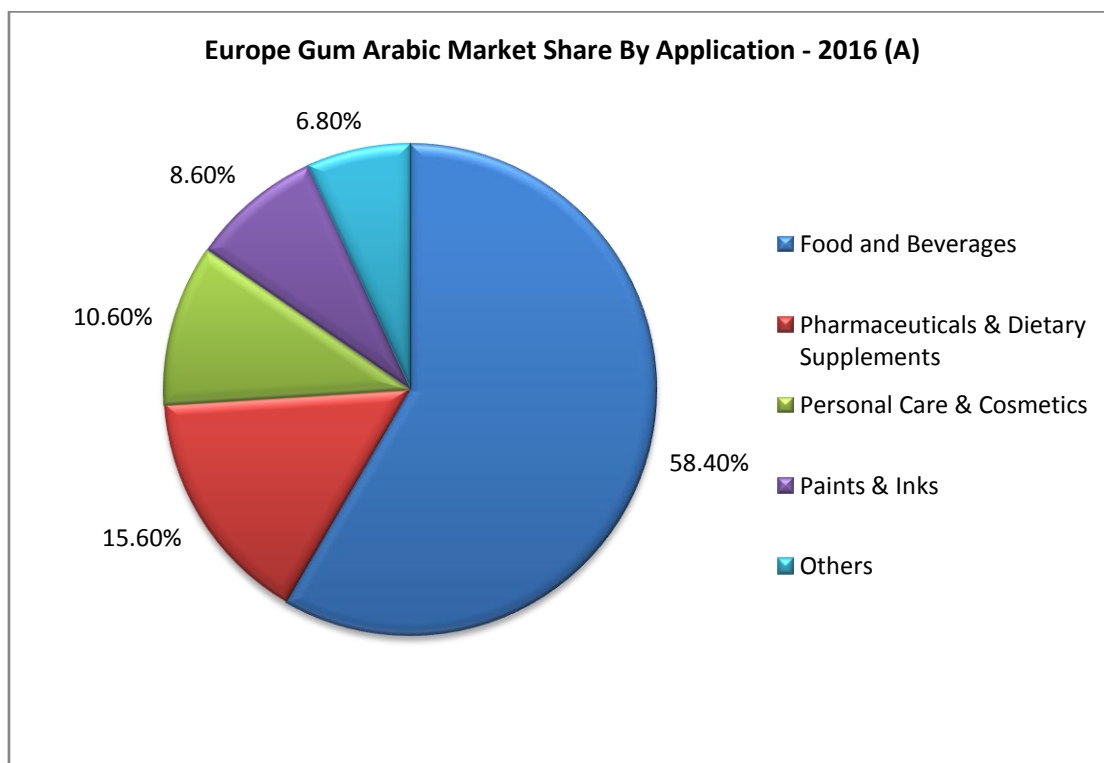


Figure 22: Indicates actual Europe gum arabic market share by application (2016)

10.3.2. Forecasted Europe gum arabic market share by application – 2025(F)

- Food and beverages segment is dominating in the Europe gum arabic market with 56.4% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 14.9%
- Personal care & cosmetics segment is account for 11.6% market value share, followed by paints and ink segment, which account for market share of 9.3%

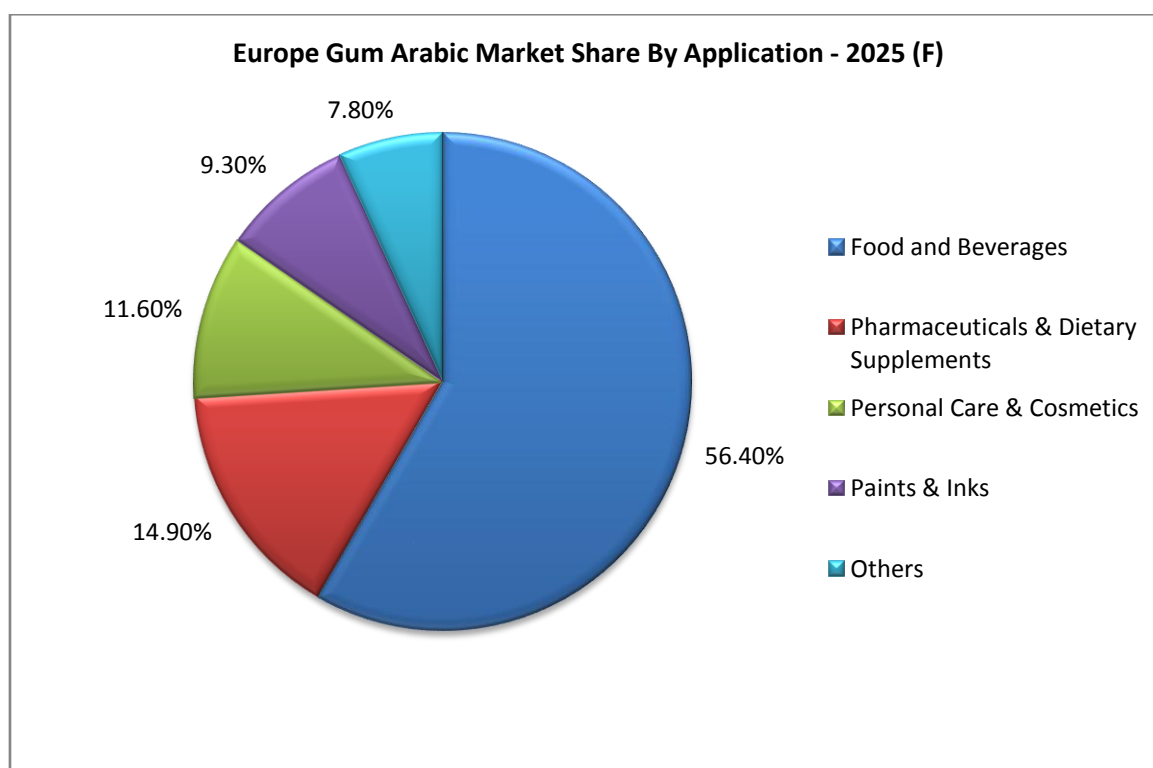


Figure 23: Indicates forecasted Europe gum arabic market share by application (2025)

11. Asia Pacific Gum Arabic Market Analysis - (Findings and Interpretation)

11.1. Asia Pacific Gum Arabic Market Analysis and forecast, 2017-2025

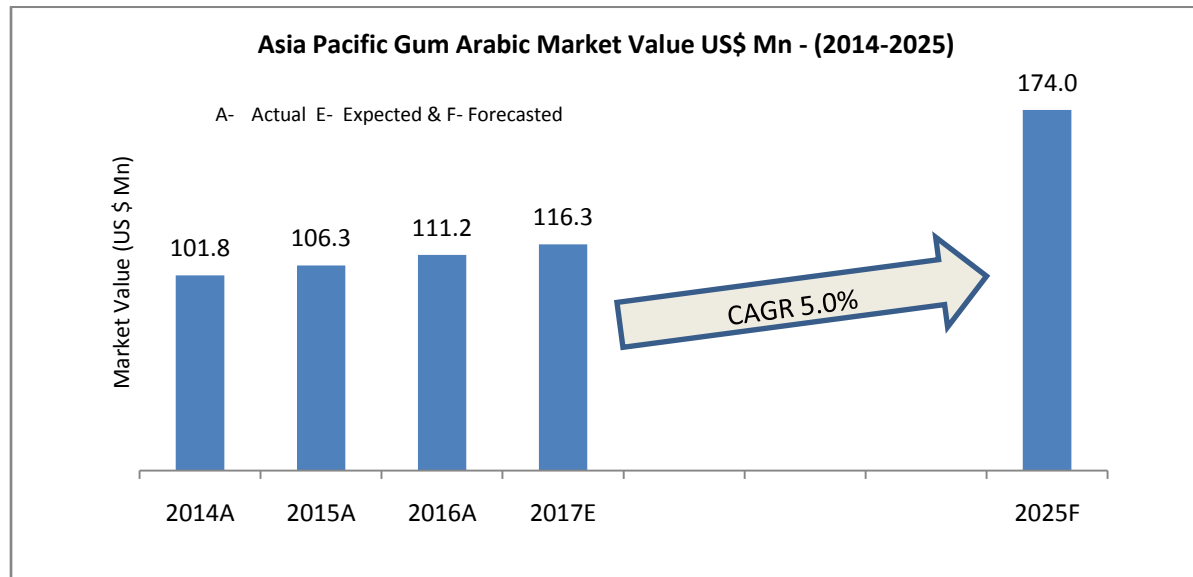


Figure 24: Indicates Asia Pacific gum arabic market value US\$ Million and forecast (2014-2025)

- In value terms, Asia Pacific gum arabic consumption stood at US\$ 111.2 Million in 2016, and is expected to reach US\$ 174.0 Million by 2024 with an anticipated CAGR of 5.0% during the forecasted period

Data Table:

Asia Pacific	2014 A	2015 A	2016 A	2017 E	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR
Value	101.8	106.3	111.2	116.3	121.8	128.0	134.5	141.3	148.4	156.2	164.7	174.0	5.0%

Table 4: Asia Pacific Gum Arabic Market Value (US\$ Million), 2014–2025

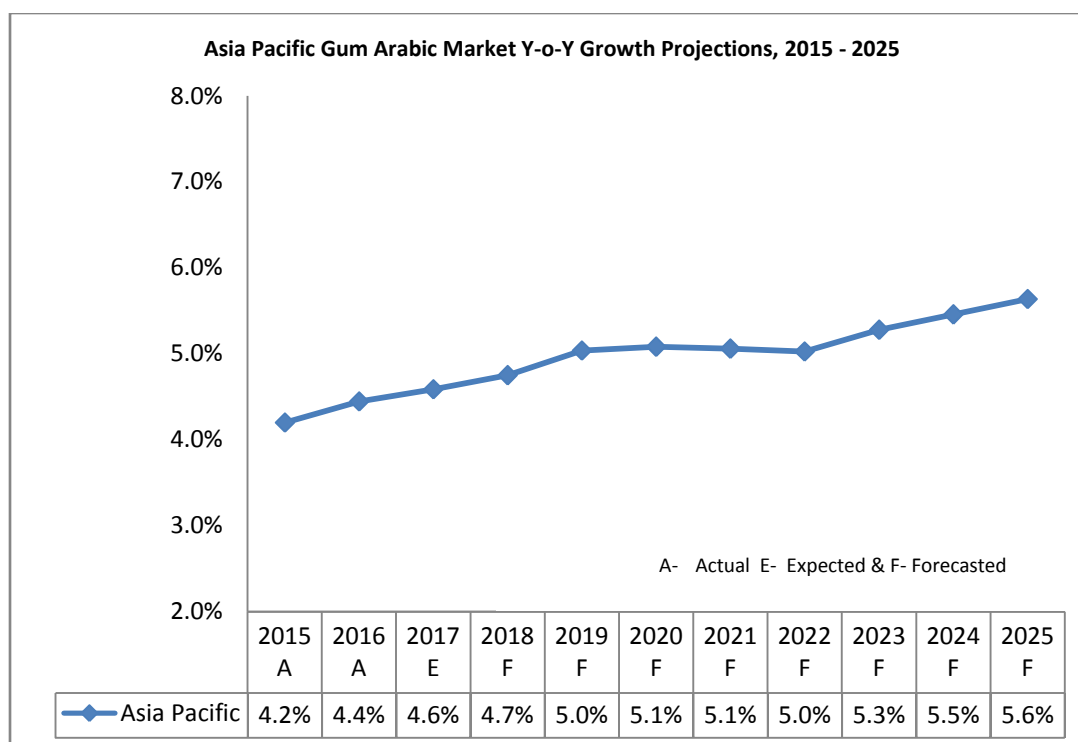


Figure 25: Indicates Asia Pacific gum arabic market Y-o-Y growth projections (2015-2025)

The Asia Pacific market for gum arabic is expected to register CAGR of 5.0% and steady growth rates over the forecast period

11.2. Asia Pacific Gum Arabic Market Share by Gum Type

The market is further analyzed through market share by gum type which is as followed:

11.2.1. Actual Asia Pacific gum arabic market share by gum type – 2016(A)

- Acacia Senegal segment is dominating in the Asia Pacific gum arabic market with 58.3% market share in terms of value, followed by the acacia seyal segment, which account for market share of 41.7%

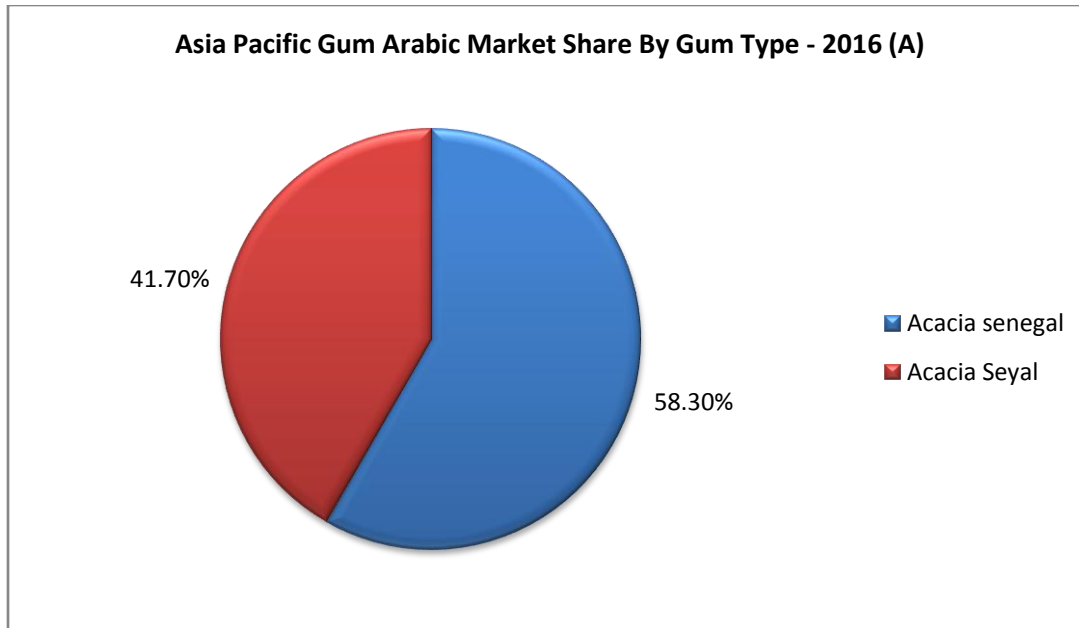


Figure 26: Indicates actual Asia Pacific gum arabic market share by gum type (2016)

11.2.2. Forecasted Asia Pacific gum arabic market share by gum type – 2025(F)

- Acacia Senegal segment is dominating in the Asia Pacific gum arabic market with 56.7% market share in terms of value, followed by the acacia seyal segment, which account for market share of 43.3%

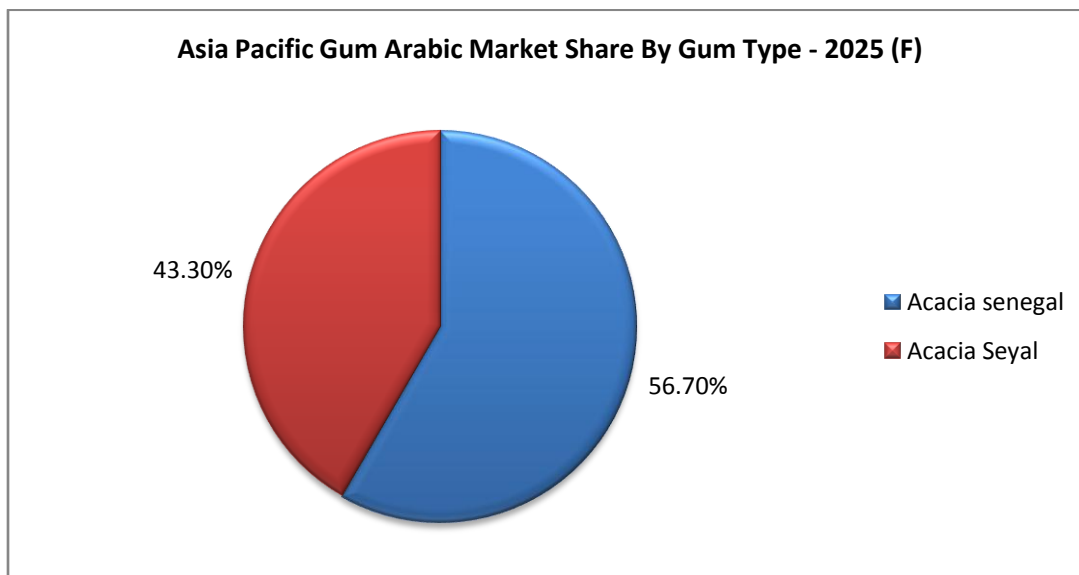


Figure 27: Indicates forecasted Asia Pacific gum arabic market share by gum type (2025)

11.3. Asia Pacific Gum Arabic Market Share by Application

The market is further analyzed through market share by application which is as followed:

11.3.1. Actual Asia Pacific gum arabic market share by application – 2016(A)

- Food and beverages segment is dominating in the Asia Pacific gum arabic market with 58.3% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 15.5%
- Personal care & cosmetics segment is account for 10.3% market value share, followed by paints and ink segment, which account for market share of 8.9%

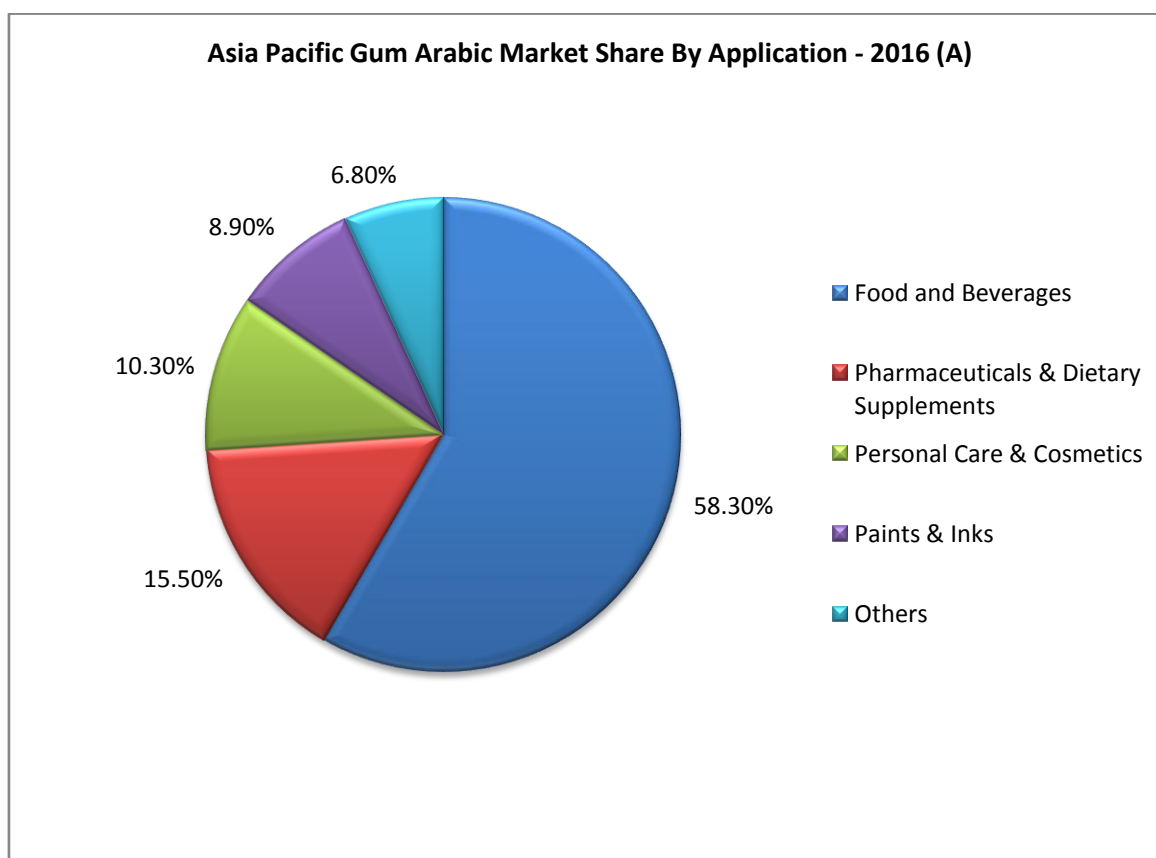


Figure 28: Indicates actual Asia Pacific gum arabic market share by application (2016)

11.3.2. Forecasted Asia Pacific gum arabic market share by application – 2025(F)

- Food and beverages segment is dominating in the Asia Pacific gum arabic market with 61.5% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 14.7%
- Personal care & cosmetics segment is account for 9.3% market value share, followed by paints and ink segment, which account for market share of 7.7%

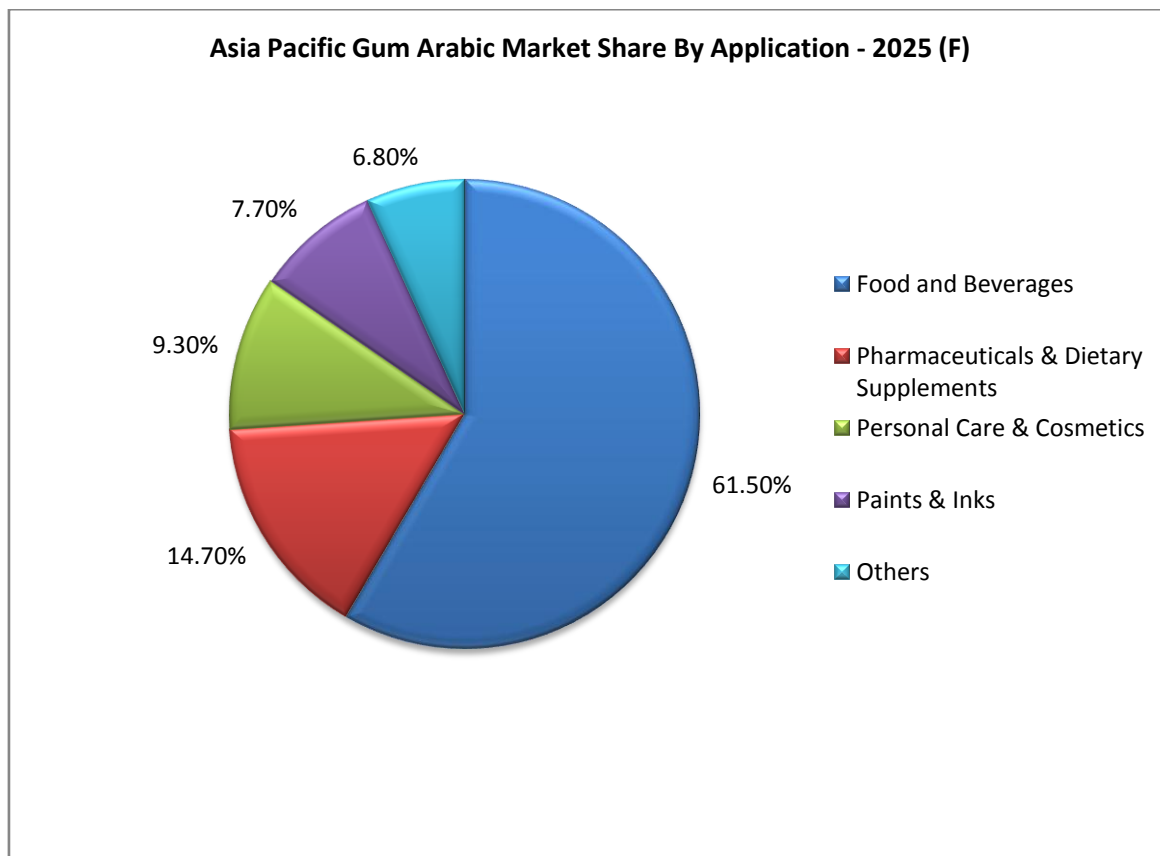


Figure 29: Indicates forecasted Asia Pacific gum arabic market share by application (2025)

12. Rest of World Gum Arabic Market Analysis - (Findings and Interpretation)

12.1. Rest of World Gum Arabic Market Analysis and forecast, 2017-2025

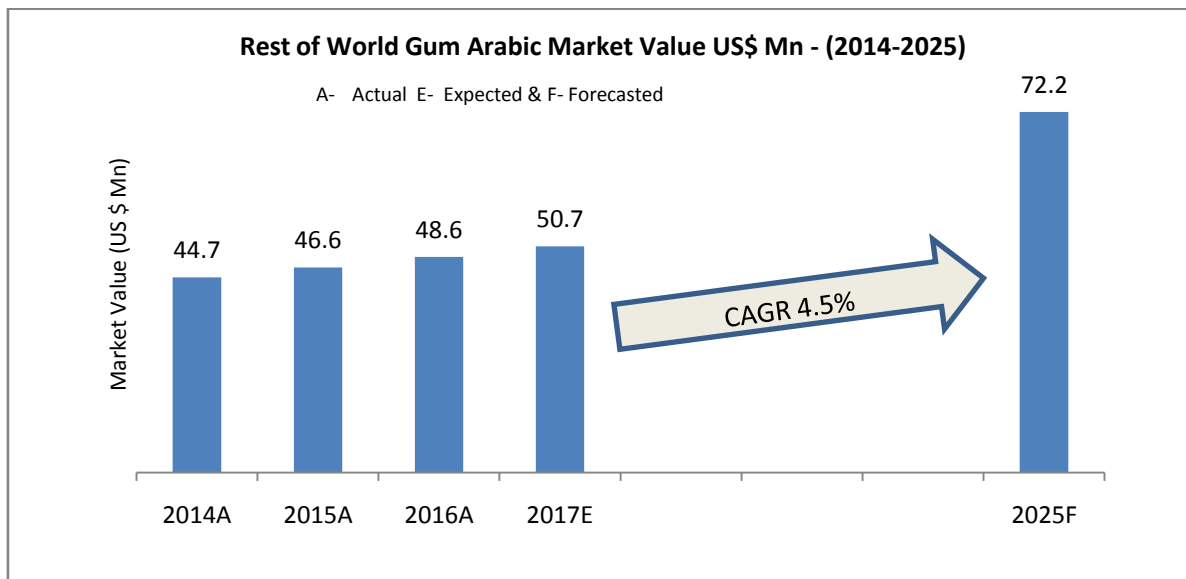


Figure 30: Indicates rest of world gum arabic market value US\$ Million and forecast (2014-2025)

- In value terms, rest of world gum arabic consumption stood at US\$ 48.6 Million in 2016, and is expected to reach US\$ 72.2 Million by 2024 with an anticipated CAGR of 4.5% during the forecasted period

Data Table:

Rest of world	2014 A	2015 A	2016 A	2017 E	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR
Value	44.7	46.6	48.6	50.7	52.9	55.3	57.8	60.4	63.1	65.9	68.9	72.2	4.5%

Table 5: Rest of World Gum Arabic Market Value (US\$ Million), 2014–2025

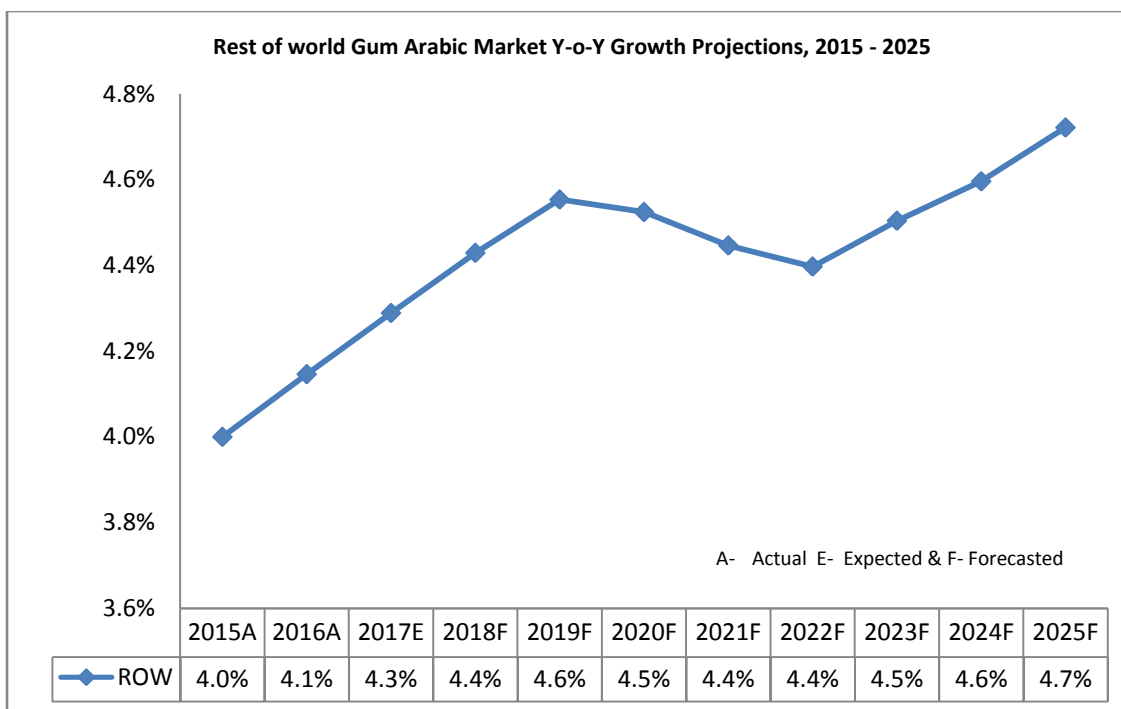


Figure 31: Indicates rest of world gum arabic market Y-o-Y growth projections (2015-2025)

The rest of world market for gum arabic is expected to register CAGR of 4.5% and steady growth rates over the forecast period

12.2. Rest of World Gum Arabic Market Share by Gum Type

The market is further analyzed through market share by gum type which is as followed:

12.2.1. Actual rest of world gum arabic market share by gum type – 2016 (A)

- Acacia Senegal segment is dominating in the rest of world gum arabic market with 53.4% market share in terms of value, followed by the acacia seyal segment, which account for market share of 46.6%

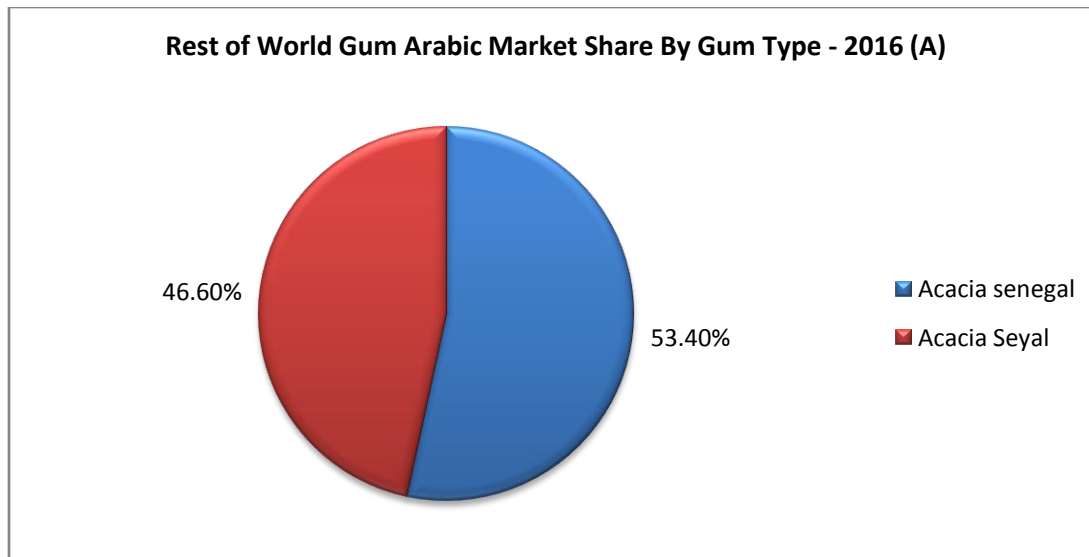


Figure 32: Indicates actual rest of world gum arabic market share by gum type (2016)

12.2.2. Forecasted rest of world gum arabic market share by gum type – 2025 (F)

- Acacia Senegal segment is dominating in the rest of world gum arabic market with 52.6% market share in terms of value, followed by the acacia seyal segment, which account for market share of 47.4%

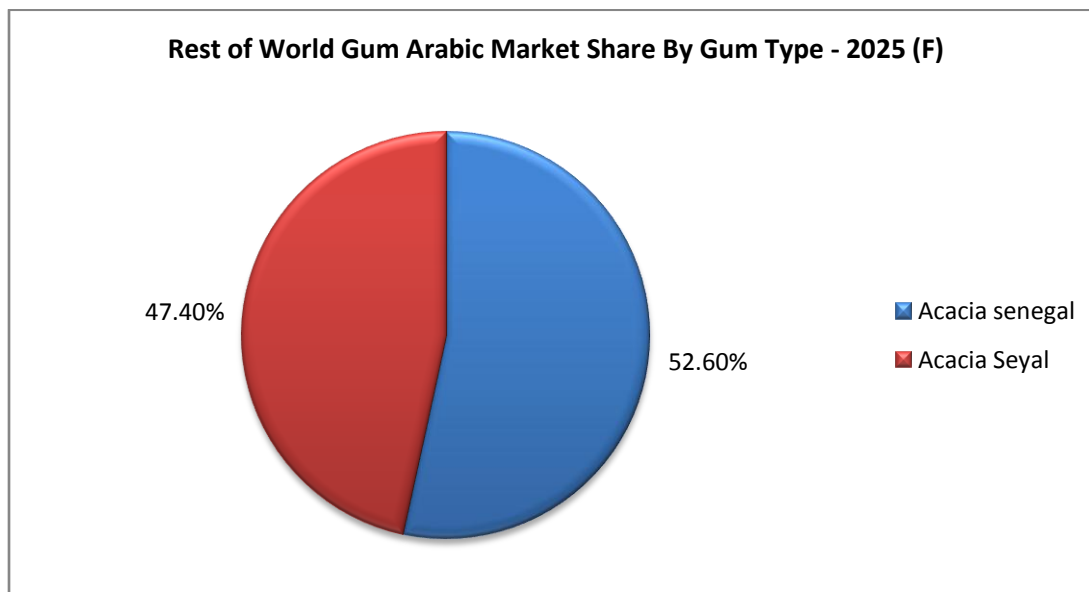


Figure 33: Indicates forecasted rest of world gum arabic market share by gum type (2025)

12.3. Rest of World Gum Arabic Market Share by Application

The market is further analyzed through market share by application which is as followed:

12.3.1. Actual rest of world gum arabic market share by application – 2016 (A)

- Food and beverages segment is dominating in the rest of world gum arabic market with 52.2% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 15.6%
- Personal care & cosmetics segment is account for 13.2% market value share, followed by paints and ink segment, which account for market share of 10.7%

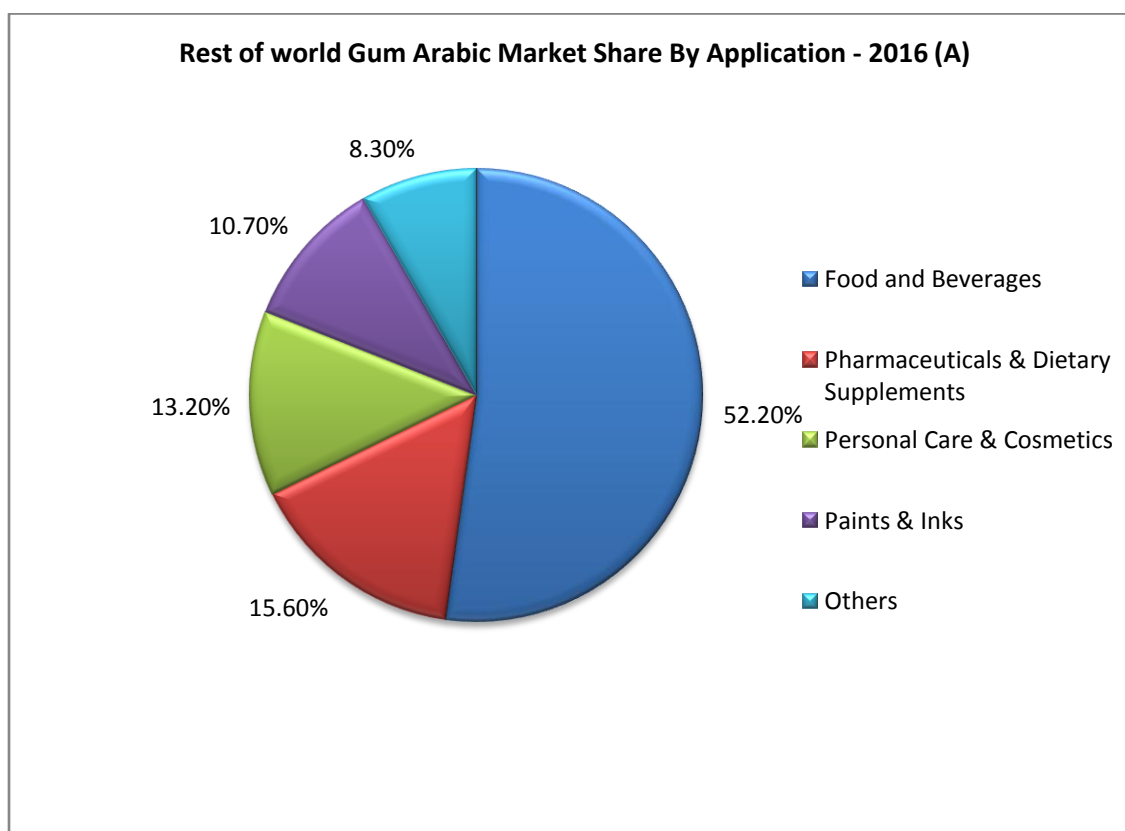


Figure 34: Indicates actual rest of world gum arabic market share by application (2016)

12.3.2. Forecasted rest of world gum arabic market share by application – 2025 (F)

- Food and beverages segment is dominating in the rest of world gum arabic market with 55.5% market share in terms of value, followed by pharmaceuticals & dietary supplements segment, which account for market share of 14.3%
- Personal care & cosmetics segment is account for 12.6% market value share, followed by paints and ink segment, which account for market share of 10.3%

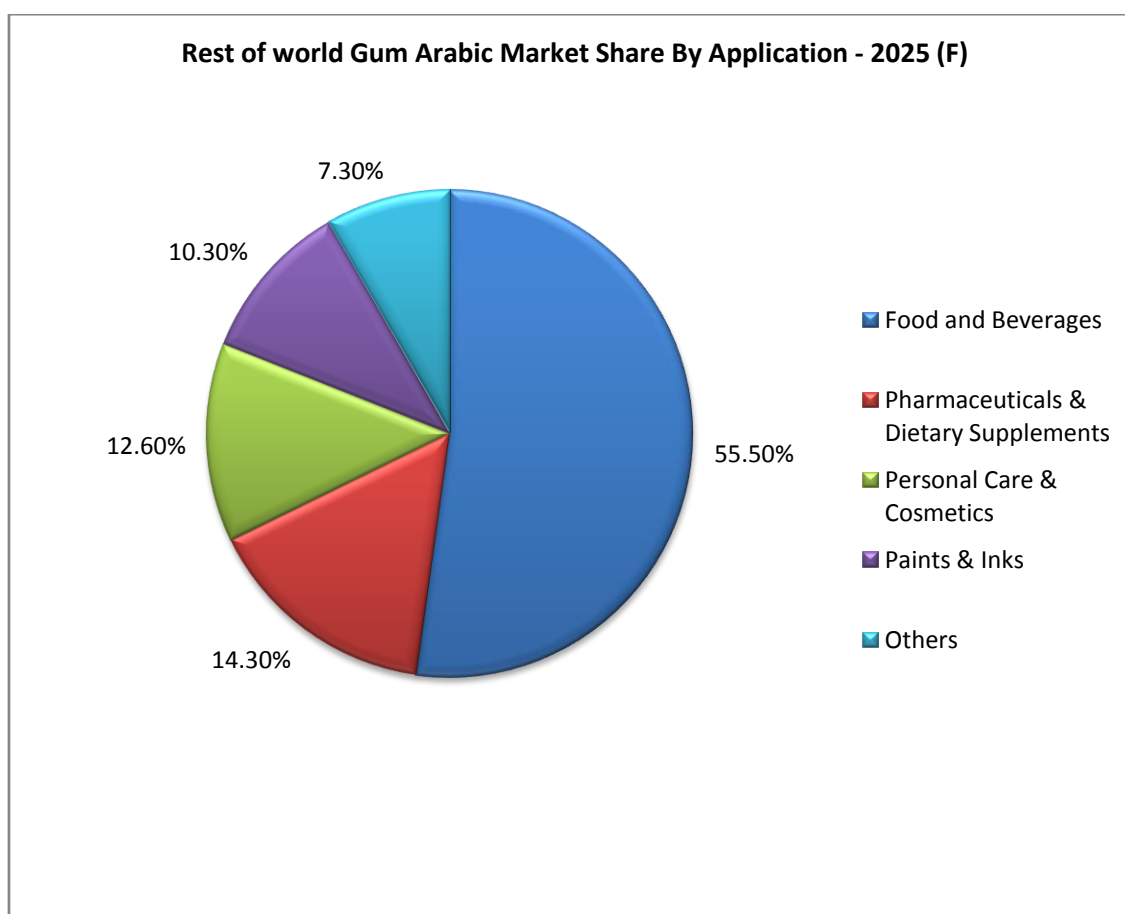
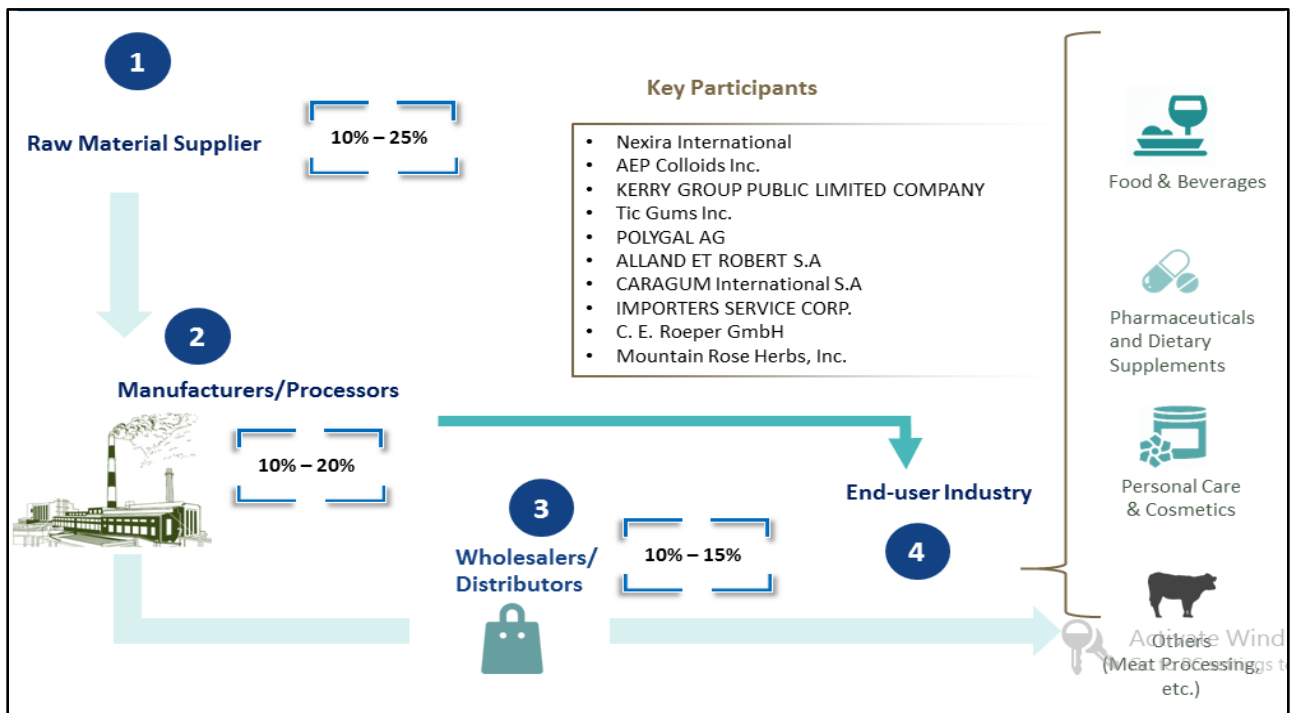


Figure 35: Indicates forecasted rest of world gum arabic market share by application (2025)

13. Global Gum Arabic Market Value Chain Analysis:



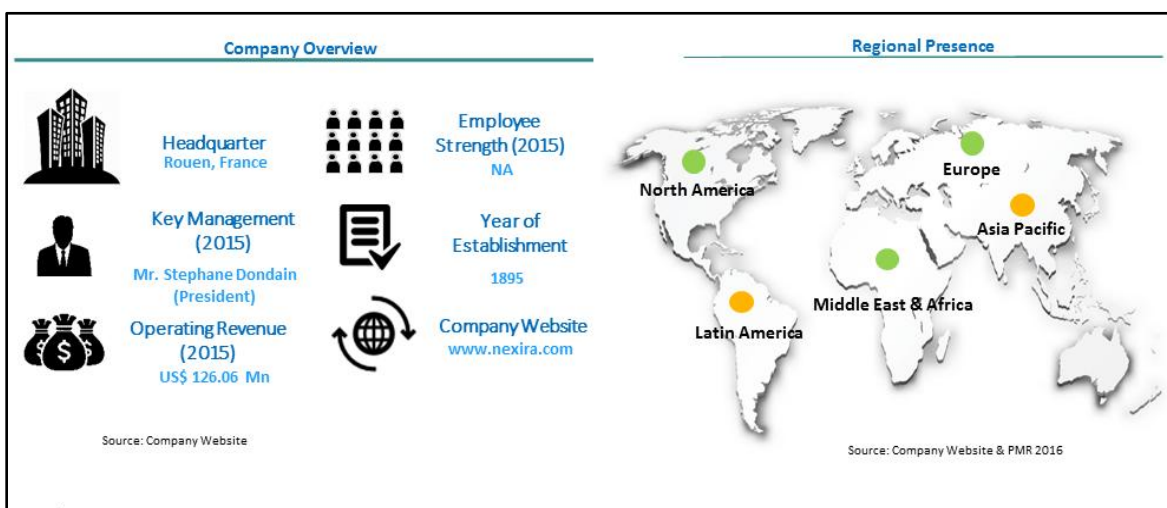
14. Company Profile

Following are some of the key participants in global gum arabic market:

1. Nexira International
2. AEP Colloids Inc.
3. KERRY GROUP PUBLIC LIMITED COMPANY
4. Tic Gums Inc.
5. POLYGAL AG
6. ALLAND ET ROBERT S.A
7. CARAGUM International S.A
8. IMPORTERS SERVICE CORP.
9. C. E. Roeper GmbH
10. Mountain Rose Herbs, Inc.

COMPANY OVERVIEW

- ❑ Nexira International manufactures and distributes natural ingredients/botanical extracts for application in food and beverage industries. It has an extensive portfolio with over 100 high-quality botanical extracts and powders.
- ❑ The company is engaged in retail trade of natural emulsifiers, food ingredients, organic herbs, herbal extracts, and dietary supplements
- ❑ The company operates in five continents, with a wide network of collaborative partners [3][7][13][14]



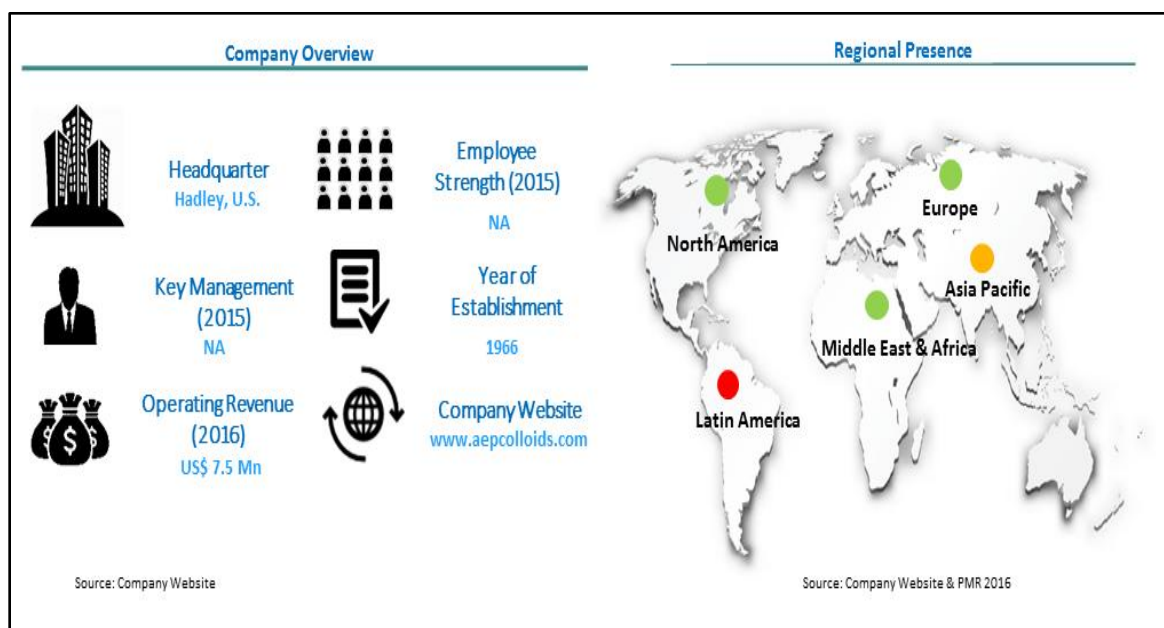
KEY STRATEGY

- ❑ The company focuses on acquisitions in order to strengthen its presence in global and regional markets and to enhance its product offerings
 - In October 2012, Europe-based Nexira International acquired Tournay Biotechnologies – an European expert in the extraction of active botanicals for the nutraceutical and dietary supplements industries – in order to expand its product portfolio
- ❑ The company focuses on exploring new application areas for gum arabic products
 - In November 2016, the European Food Safety Authority (EFSA), on the backdrop of scientific consensus basis, concluded that gum arabic can be included as a dietary fiber for application in Fibregum

AEP Colloids Inc.

COMPANY OVERVIEW

- ❑ AEP Colloids Inc. offers essential oils and fine and specialty chemicals for the flavor and fragrance industry
- ❑ Company's product portfolio includes gum arabic, gellan gum, pectin, xanthan gum, cellulose gum, carrageenan and others
- ❑ The company has a diversified product line that includes water soluble gums and custom stabilizers for application in the food, pharmaceutical, personal care, and allied industries [3][6][7][13]



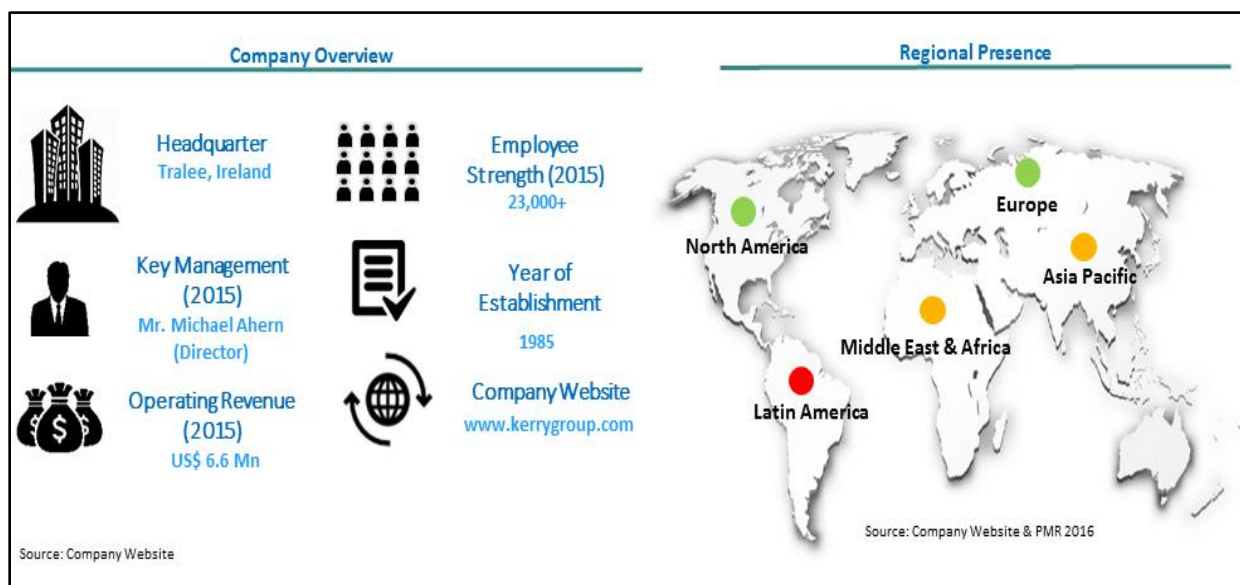
KEY STRATEGY

- ❑ AEP Colloids focuses on offering products at competitive prices. The company also offers kosher products, organic product formulations, and customer support services in order to expand its customer base.
- ❑ The company strategizes to showcase its products at various international expos and annual meetings in order to expand its visibility and recognition in the global market

KERRY GROUP PUBLIC LIMITED COMPANY

COMPANY OVERVIEW

- ❑ Kerry Group offers food, beverages, and nutritional products. The company operates through three business segments: taste and nutrition, consumer foods, and agribusiness.
- ❑ The company offers foods and beverages through its sub-branch Kerry Foods under its consumer food division
- ❑ The company is one of the prominent consumer food and beverage suppliers in the market in Europe and has sales operations in over 140 countries worldwide [3][7][9][13]

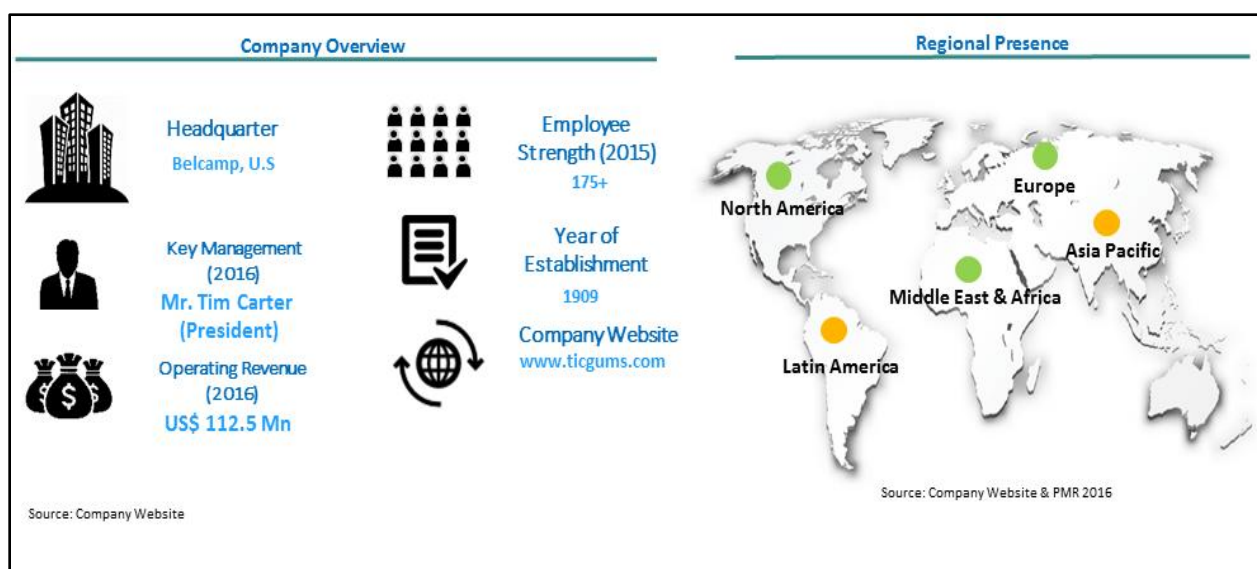


KEY STRATEGY

- ❑ The company strategizes to acquire and collaborate in order to strengthen its presence in global and regional markets and enhance its product offerings
 - In September 2011 for instance, the company acquired SuCrest GmbH – an European ingredients and flavor company – in order to expand its product portfolio in sweets and flavors that use gum arabic as an ingredient
- ❑ In October 2015, the company acquired three food companies, including Biothera Inc.'s Wellmune, Red Arrow Products, and Island Oasis in the U.S. in order to enhance its product offerings and presence in the U.S market

COMPANY OVERVIEW

- ❑ Tic Gums Inc. offers a complete solution for food, beverages, and nutritional products. The company caters to demand from food texture and stability solutions industry.
- ❑ The company manufactures varieties of gums including acacia, agar, carrageenan, gellan gum, guar, inulin, locust bean gum, and tara gum
- ❑ The company is one of the prominent emulsifier and stabilizer suppliers in the U.S market [3][7][13][17]

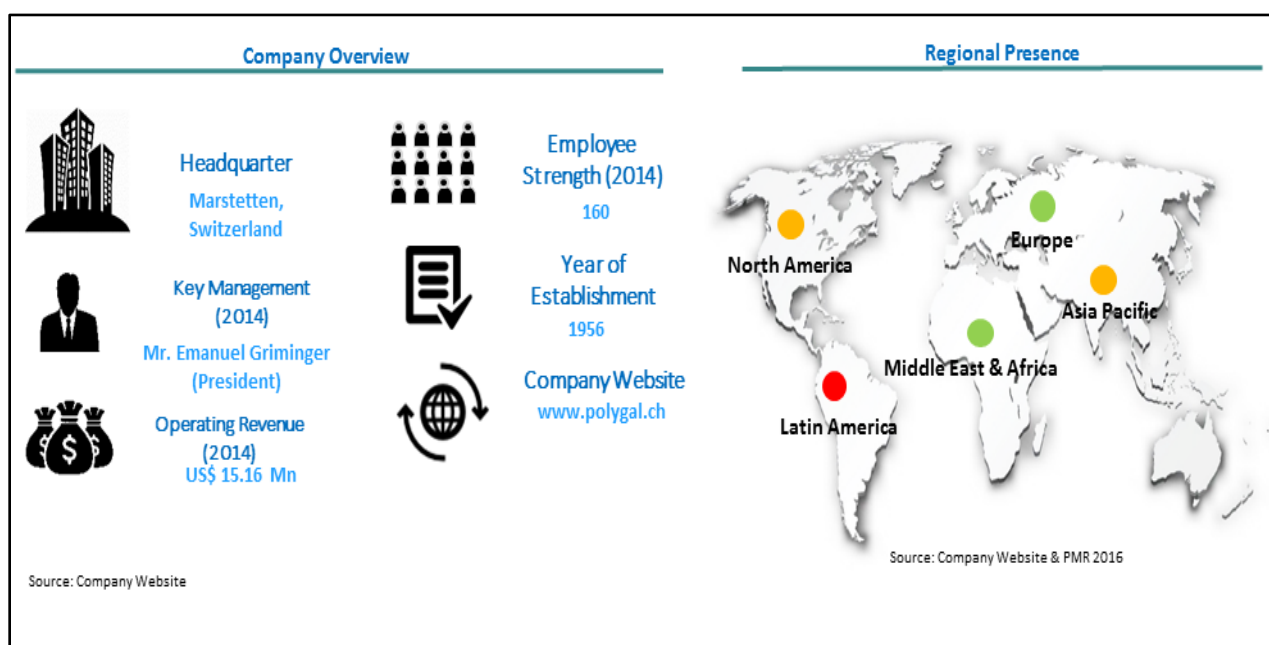


KEY STRATEGY

- ❑ Tic Gums Inc. focuses on producing a variety gums for application in products such as beverages, ice creams, foods, pharmaceuticals, and cosmetics
 - Tic Gums Inc. manufactures stabilizer and emulsifiers including products such as TICOrganic spray dried gum arabic and TIC Pretested gum arabic products for application in the food and beverages industry
- ❑ Tic Gums Inc. focuses on increasing production of organic gum arabic products to meet growing demand in the market. The company manufactures organic gum arabic under brand name TICOrganic.

COMPANY OVERVIEW

- ❑ Polygal AG offers hydrocolloid products including gum arabic, guar gum, tragacanth, tara gum, and other gums
- ❑ The company offers specialized plant hydrocolloids for application in the food industry
- ❑ The company has warehouses located at Marstetten, Switzerland, and regional headquarters in Spain, China, and Pakistan [3][7][13][15]

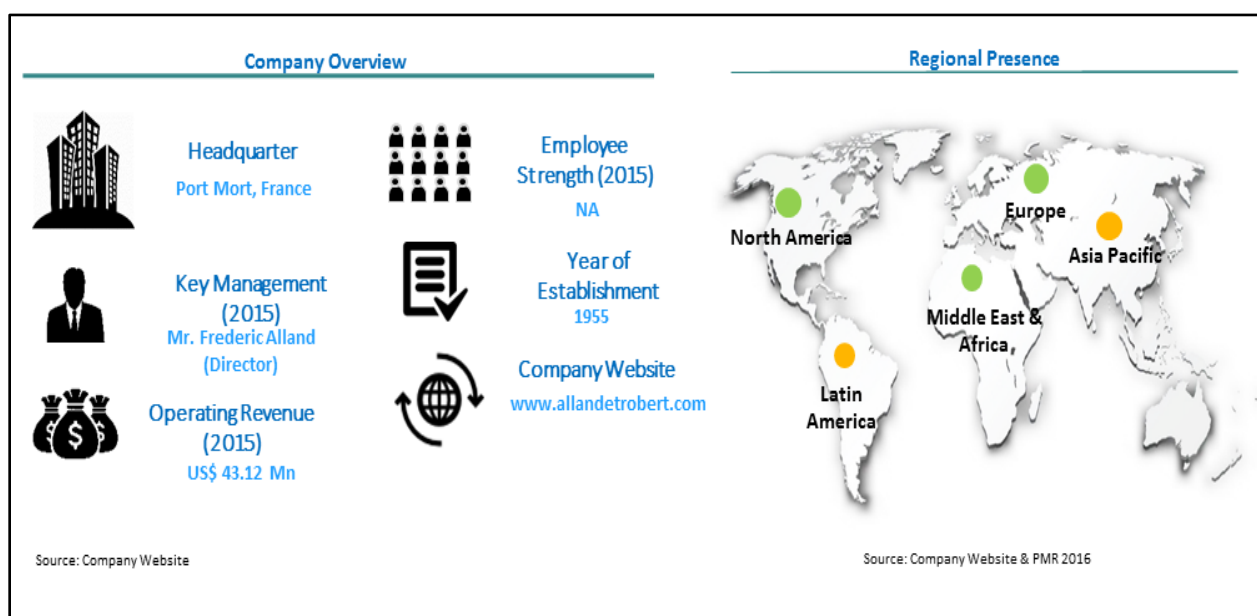


KEY STRATEGY

- ❑ Polygal AG focuses on offering organic certified products including natural gums and ingredients for application in the food industry
 - Some of the company's products have organic certification, food safety certifications, kosher & halal certification, and ISO certification
- ❑ The company also focuses on research to develop innovative products to cater to a wide range of needs from the food industry
- ❑ In January 2016, the company received kosher certification for gum arabic for application in the confectionery industry

COMPANY OVERVIEW

- ❑ Alland Et Robert S.A offers multi-purpose, natural and healthy products, such as gum acacia for application in the food industry
- ❑ The company offers mainly two types of gum including gum acacia and gum karaya
- ❑ The company focuses on developing robust partnerships with an extensive network of high quality raw material suppliers in Africa to ensure security of supply [2][3][7][13]

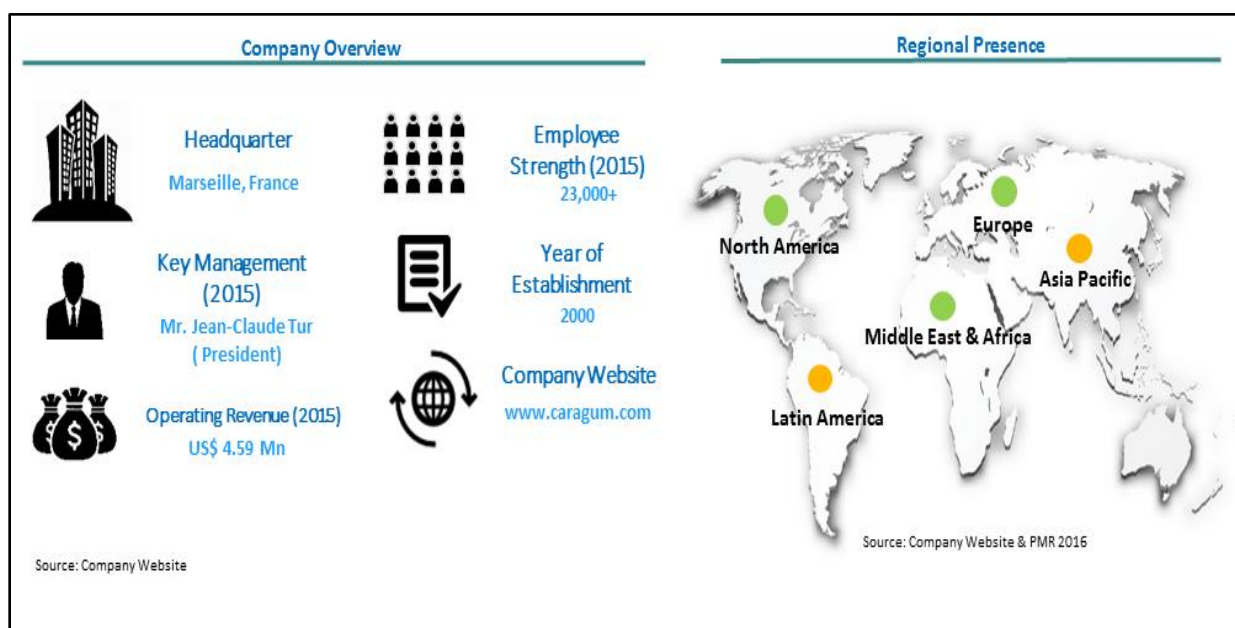


KEY STRATEGY

- ❑ The company focuses on launching new products in order to strengthen its product portfolio and presence in global and regional markets
 - In September 2015, Alland & Robert S.A – a manufacturer of gum acacia products – launched Instant Soluble Gum Acacia 338i, which is a product for powder encapsulation applications
- ❑ On 19 October 2016, Alland & Robert S.A launched its full acacia fiber range in order cater to demand from the textile industry. Products include organic references: seyal grade, Acacia Fiber 339 Organic, and Senegal grade, Acacia Fiber 399 Organic.

COMPANY OVERVIEW

- ❑ Caragum International S.A offers raw materials such as gum arabic, xanthan gum, and tragacanth gum to develop products including emulsifiers and stabilizers for application in flavored emulsions, dairy products, beverages, and confectionery
- ❑ The company is one of the leading manufacturers and distributors of high quality gum arabic products in France and also exports to countries such as North America, Latin America, the Middle East and Africa, South East Asia, and Australia [3][5][7][13]



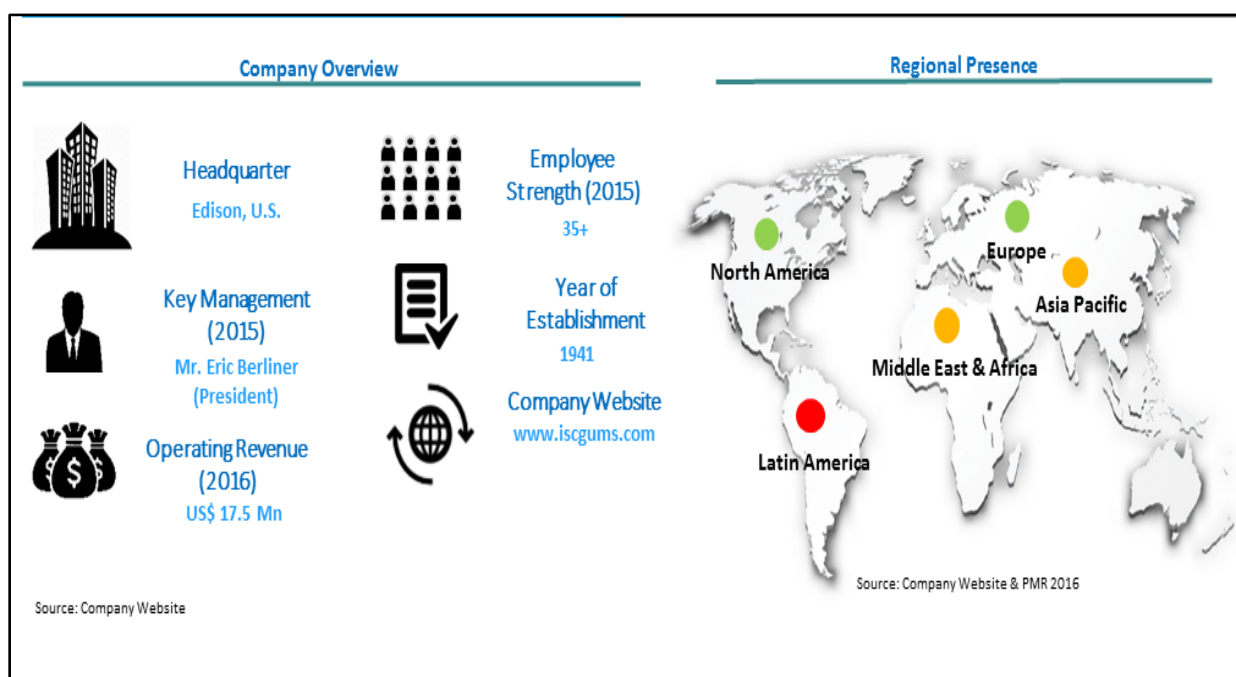
KEY STRATEGY

- ❑ The company focuses on investing on procuring the latest state-of-the-art equipment in order to perform top quality research and development and maintain stringent quality control standards
- ❑ The company focuses on promoting its gum arabic products, especially in markets with high demand for halal certified products
 - ❑ In July 2013, the company received halal certification for gum arabic for application in the food industry

IMPORTERS SERVICE CORP.

COMPANY OVERVIEW

- ❑ Importers Service Corp. is a leading producer of gum acacia in Edison and exports to countries such as Europe and South East Asia
- ❑ The company offers premium hydrocolloids for application in food, beverages, pharmaceuticals, and technical industries

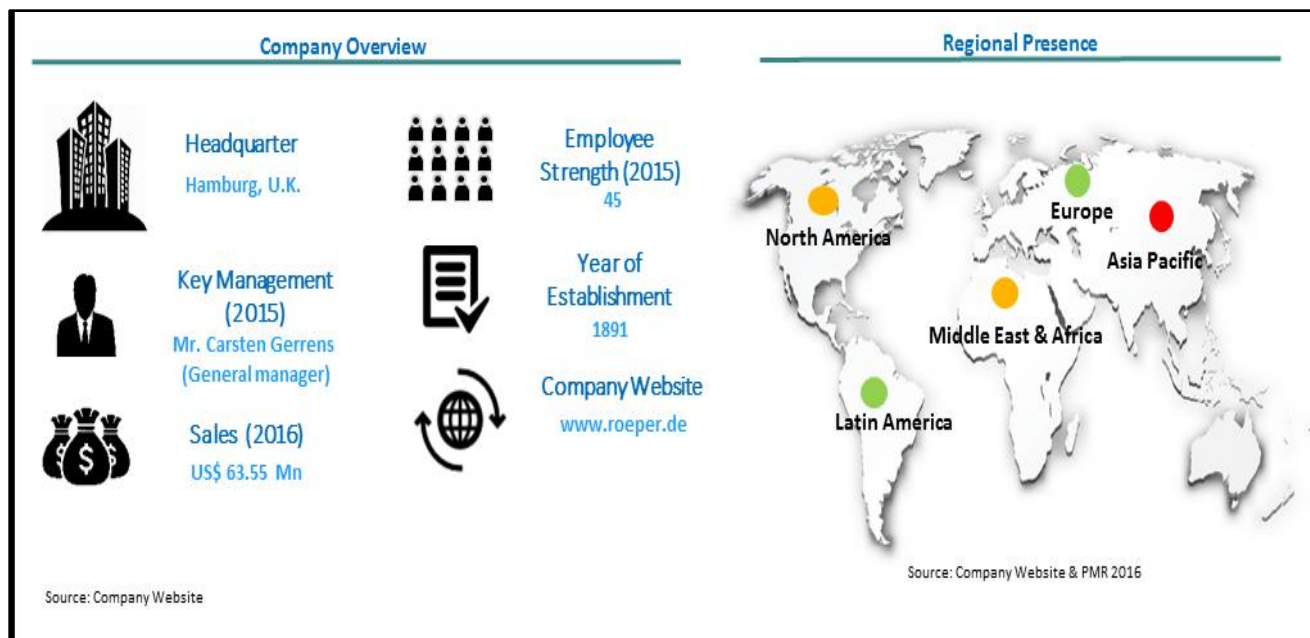


KEY STRATEGY

- ❑ The company focuses on promoting its gum arabic products, especially in markets with high demand for halal certified products
 - In June 2015, company received halal certification for its gum arabic products from The Islamic Food and Nutrition Council of America (IFANCA), which is the main halal certification organization in the U.S
- ❑ The company focuses on offering gum arabic products that are gluten-free, allergen-free, and GMO-free in order to strengthen its product portfolio

COMPANY OVERVIEW

- ❑ Importers Service Corp. is a leading producer of gum acacia in Edison and exports to countries such as Europe and South East Asia
- ❑ The company offers premium hydrocolloids for application in food, beverages, pharmaceuticals, and technical industries [3][7][10][13]



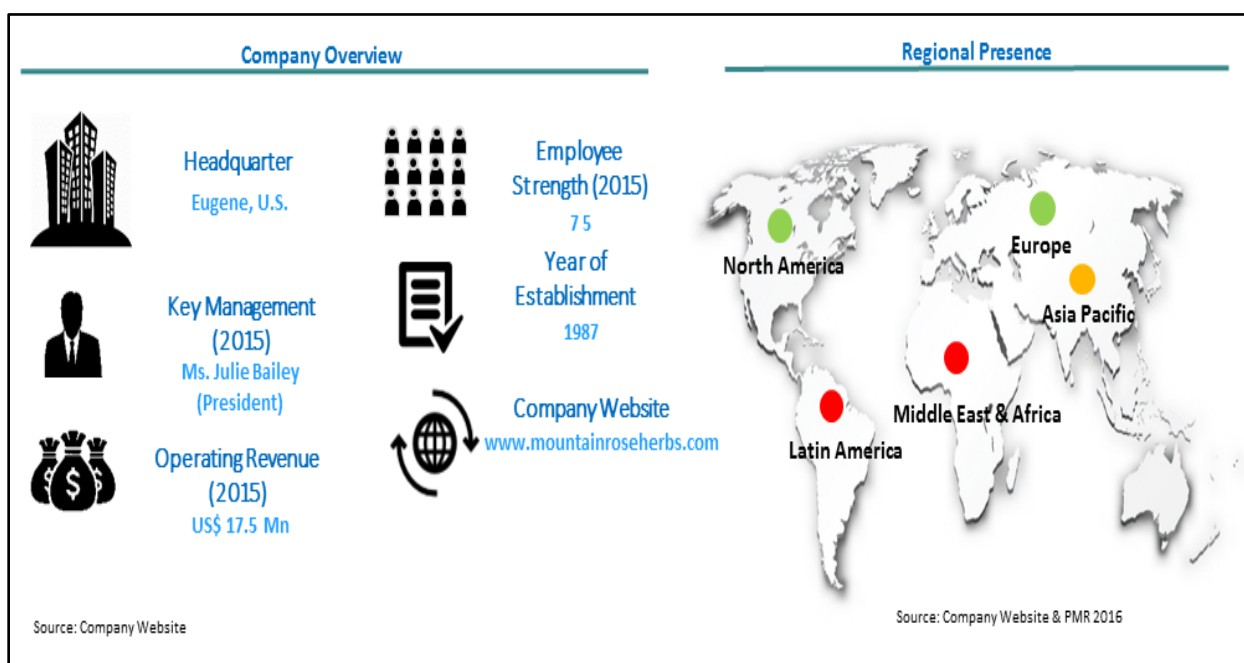
KEY STRATEGY

- ❑ The company focuses on showcasing products by participating in various shows, expos, and conferences across the globe in order to increase visibility and expand customer base
 - In March 2016, C. E. Roeper GmbH showcased its products at the Food Ingredients China event held at Shanghai, China
 - In September 2015, the company showcased its products at Riga Food 2015 held at Riga, Latvia, to strengthen its presence in the European market and increase visibility

Mountain Rose Herbs, Inc.

COMPANY OVERVIEW

- ❑ Mountain Rose Herbs, Inc. manufactures and distributes natural ingredients, essential oils, organic tea, herbs, and spices [3][4][7][13]
- ❑ The company is also a supplier of cosmetic ingredients, pharmaceuticals, home goods, and others
- ❑ The company is engaged in retail trade of natural body care ingredients, gourmet spices, organic herbs, and herbal extracts



KEY STRATEGY

- ❑ Mountain Rose Herbs, Inc. focuses on showcasing products by participating in various shows, expos, and conferences across the globe in order to expand its customer base
 - In January 2015, Mountain Rose Herbs, Inc. participated in Fun with Fermentation, Oregon, U.S., for promotion of its products
 - The company sponsors and participates in various food shows and expos across the globe. Some events include Florida Herbal Conference (Florida), Women's Healing Conference (California), and Wildflower and Music Festival held at Mount Pisgah Arboretum (Oregon)

Limitations

- The study is exclusive to information available on secondary platforms such as government websites, company annual reports, press releases, media houses etc.
- Although most geographical regions are covered, the data for countries such as Somalia, Congo, Zaire, Cambodia, Afghanistan, Yemen, Maldives, Sudan, etc. has not been validated due to lack of information in secondary sources
- Certain economic and political factors have not been considered which could have affected the market dynamics in respective regions. For instances economic crises of 2007-2008 which led to slow growth in the European region, a linear growth is considered from the view point of future and present
- Certain manufacturer, despite being large scale manufacturers of gum arabic products have very limited presence in the social media and tracking such manufacturer was beyond the scopes of this study
- Consideration of organized sector only whereas countries such as India are largely driven by the sales from unorganized sector
- Conflicting set of data available

Conclusion

Gum arabic offers an immense opportunity for manufacturer and processors to capitalize with the room for value creation. Exploring new application segment of gum arabic will lead to substantial value creation. By communicating the health benefits of gum arabic as dietary fiber, manufacturers can attract a large segment of population. Current trends in the target market such as high demand of gum arabic in food and beverages industry, rising demand for powder encapsulation and coating agent for application in pharmaceutical industry represents a favorable market for the global players in the gum arabic market. This report provides the market potential of gum arabic products and various factors driving the growth of market. Market will continue to grow in the forecast period with an estimated CAGR of 5.2% and reach US\$ 476.1 Million by the end of 2025 with Asia Pacific being the most attractive market, acacia Senegal witnessing highest growth rate and food & beverages segment dominating the application segment.

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