



# The Truck Industry in the Middle East

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*Strategic growth opportunities in an underestimated region*

# Content

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# Executive summary

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Conventional wisdom in the truck industry is that the Middle East is mostly a budget-truck market, with a strong presence of Chinese manufacturers – but the reality is different. The Middle East is, firstly, on a far higher truck-quality standard and, more importantly, does not receive the degree of manufacturer management attention it should. Substantial potential will loom in the region for the next decade, but management needs to focus on dedicated strategies to realize the growth that it holds. The aim of this study is to put the Middle East into the spotlight, as well as provide a foundation for truck industry stakeholders to leverage its potential.

A key catalyst for the substantial sales potential is its general economic growth, in particular the economic diversification of several major markets. Furthermore, the lifting of the sanctions against Iran reopens access to this significant market for Western brands, and also allows for economic growth driven by structural underinvestment in Iran.

For decades, the market share of manufacturers in the Middle East was stable, with those from Europe and America dominating. During the past decade, Chinese manufacturers have entered as beneficiaries of the political developments and sanctions, consequently the eroding market position of Western brands. This impacts both the market and manufacturer level and creates a new competitive dynamic in the context of the overall economic upswing.

From a strategic perspective, it is critical for Western brands to rebuild their traditional position in the region and avoid falling too far behind other manufacturers, especially Chinese. Now is an outstanding time to rebuild market presence in the Middle East, as there are structural shifts that directly play to the advantage of high-quality truck manufacturers. However, dedicated strategies are necessary to leverage the growth potential, while the relatively new market entrants from China, in particular, need to revise their strategic approaches to the region. There is ample sales potential for all manufacturers; after all, maintaining status quo will not be a winning strategy.

Arthur D. Little pioneers with a study about the truck industry in the Middle East, and for the first time has created a comprehensive foundation for truck manufacturers and industry stakeholders. We are convinced that such a study supports truck industry stakeholders in leveraging significant commercial opportunities, but only those that act early and decisively can fully benefit.

**What are the reasons for the market growth in the Middle East?** The primary drivers are the lifting of sanctions against Iran and the general economic diversification of many markets in the Middle East, in an effort to reduce their dependence on the petroleum sector. All this takes place in a generally sound and favorable economic climate. Iran has substantial recovery potential and needs to invest to boost its competitiveness, which requires, among many other things, a modern truck fleet. While many countries in the Middle East live well with a largely petroleum-dependent industry, there are ongoing initiatives to diversify the economic footprint. Such initiatives also have

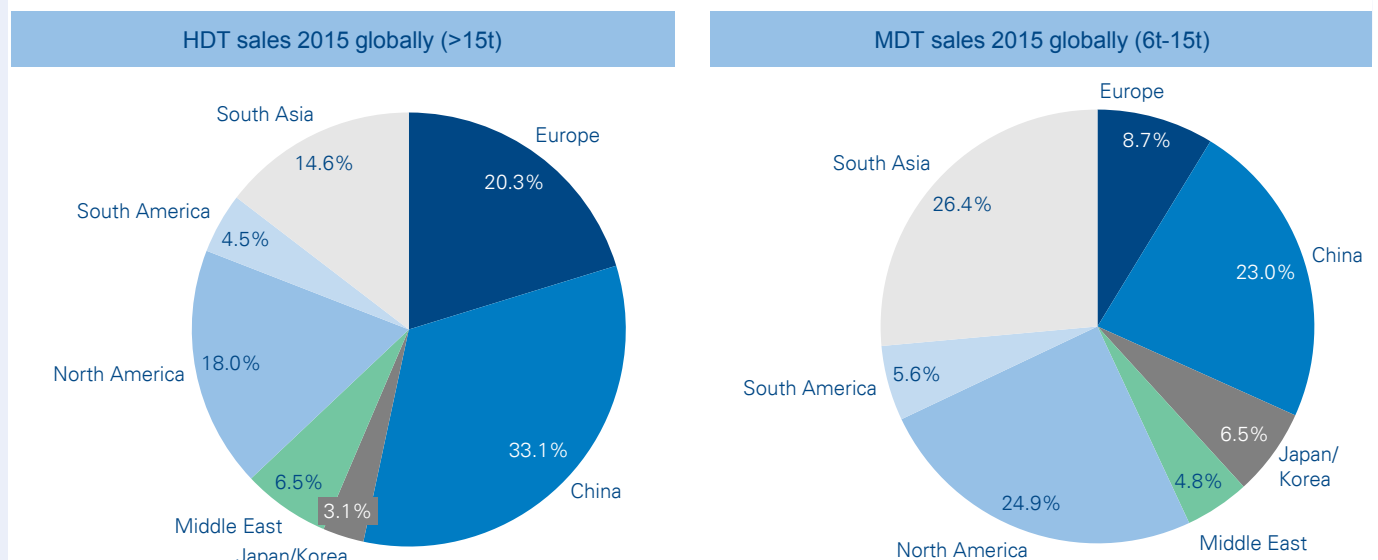
favorable implications for truck demand, as fleets need to diversify their trucks and new economic sectors require different logistical services.

**What makes the Middle East so interesting? After all, there was very little focus on the region’s truck market for a long time.** In a nutshell, what is about to happen in the Middle East in the next decade has global implications for all manufacturers, suppliers and industry stakeholders. Therefore, this study has a regional focus, but far-reaching connotations. The dynamics that will take place as a result of market changes impact truck segments, brands, customer requirements and economic development – which will change the region fundamentally. As a result of this dynamic process, opportunities as well as the need for change arise for all truck manufacturers. Why? Because the Middle Eastern market is a global melting pot of manufacturers and their respective truck concepts, all chasing business with similar truck customers that have ever-higher standards and requirements regarding their trucks. This means that high-quality Western brands will clash with basic trucks from emerging markets, especially China. However, things are not as clear-cut as they might seem in the assumption that Western brands will just drive out Chinese manufacturers. Both sides have learned from experience in other emerging markets, and adjusted their strategies and products to the Middle East. This means Chinese manufacturers have invested in product quality and sophistication, as well as service. Conversely, Western brands will need to expand their presence in the Middle East, and possibly even (re-)enter markets with high-tech trucks that are calibrated specifically to the region at price points that are still realistic.

Hence, with this study Arthur D. Little provides a foundation to understand fundamental trends and developments and their implications for truck industry stakeholders – not only within the Middle East, but globally.

**Compared to the global truck industry, what role does the Middle East play?** In a sales context, the Middle East is among the smaller regions in terms of sales volume. But the strategic implications of the shifts that are taking place are substantial, as there are ongoing fundamental

Figure 1: Truck sales in the Middle East are small compared to global truck volumes, but hold substantial potential for growth

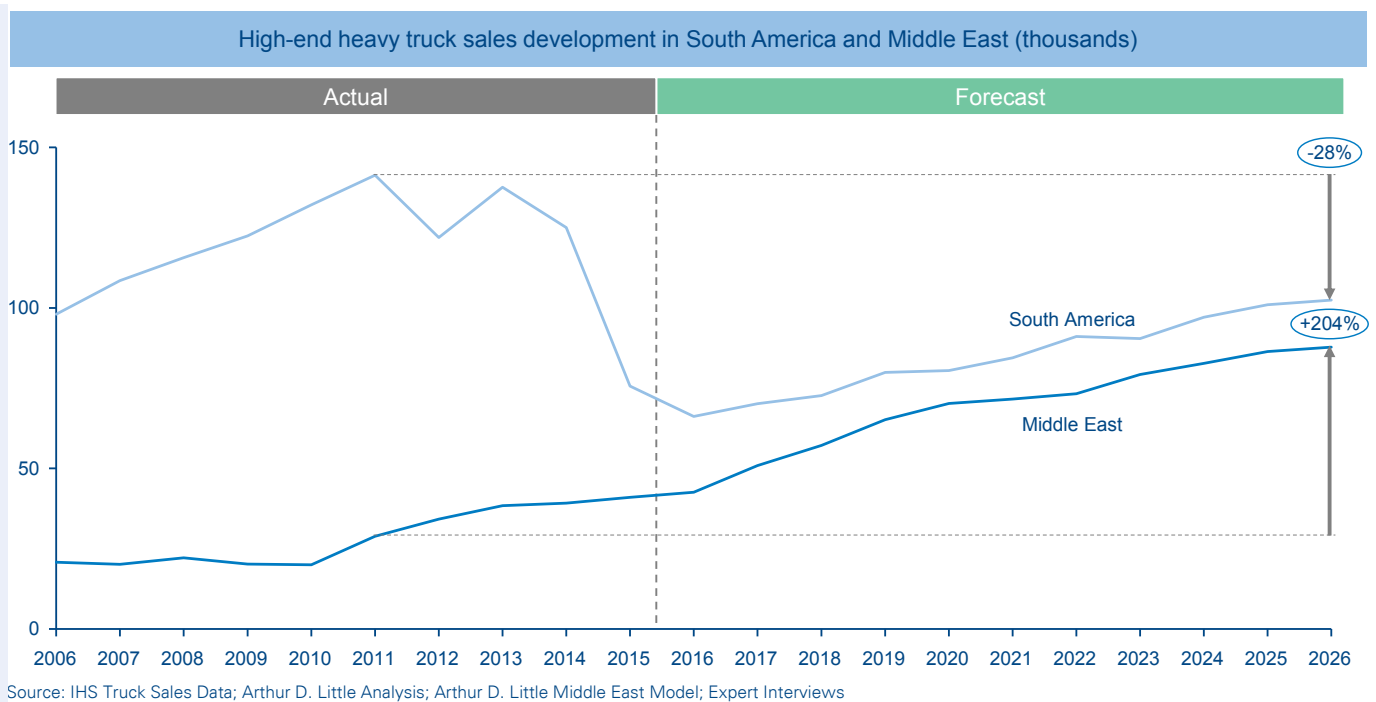


Source: IHS Truck Sales Data; Arthur D. Little Middle East Model, Arthur D. Little Analysis; Expert Interviews

changes in the market requirements from a growth, segment and customer requirements perspective.

However, the Middle East has long been the “little brother of South America” from the standpoint of Western manufacturers. Traditionally, European brands in particular were highly focused on South America as a primary overseas market. This was rightly so for a long time, as the Middle East was smaller, more volatile and more fragmented than South America. South America’s focus resulted in European manufacturers building up substantial production operations there, with truck volume that directionally assumes the peak of the market. The reality in South America is different, with structurally weaker volumes for years to come.

Figure 2: High-end HDT truck comparison – European manufacturers were betting too long on South America and neglected the Middle East, markets will be equally important in the next decade



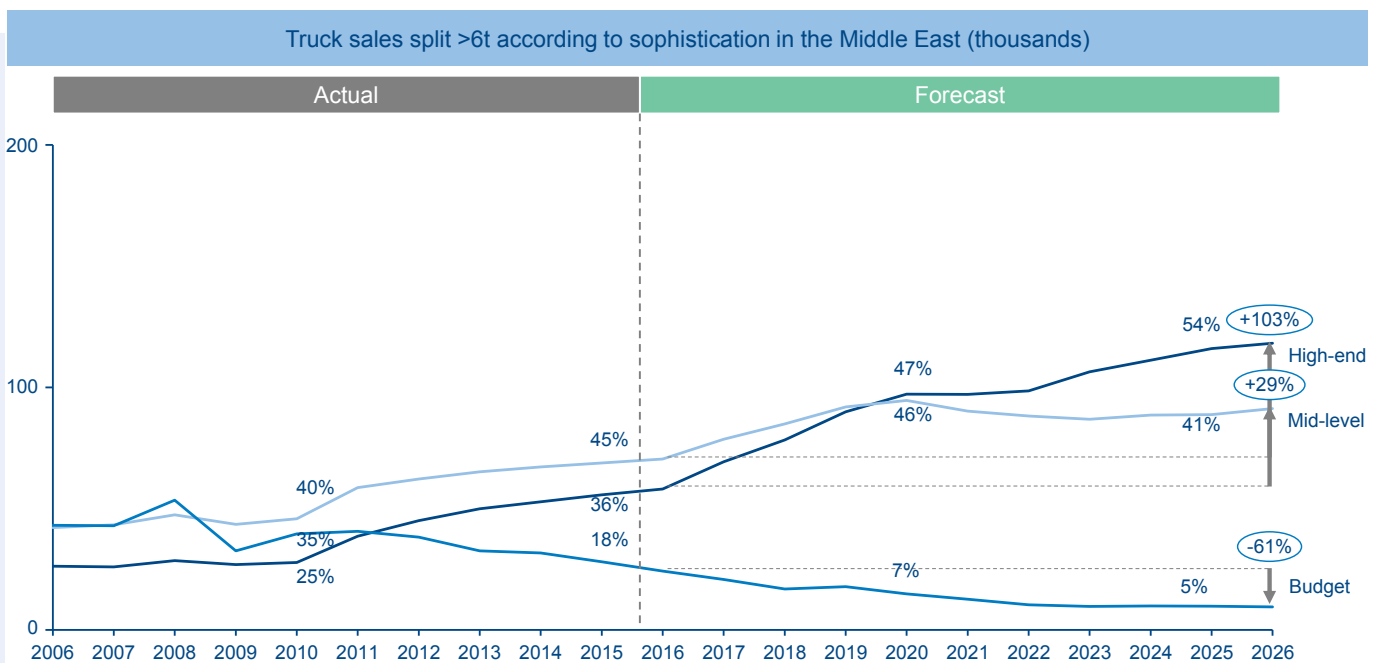
As much as South America has rightly received substantial attention and will continue to be important, the prevailing structural crisis, particularly in Brazil, and the strong growth potential in the Middle East should trigger a reassessment of priorities and regional emphasis at manufacturers. The analysis in the chart above shows how much South America’s sales will moderate in the Middle East. Manufacturers need to put more dedicated emphasis on the Middle East to leverage opportunities and even compensate for sales losses in South America.

**What does the situation in the Middle East imply for manufacturers globally?** To answer that question, Arthur D. Little developed a comprehensive framework for the Middle Eastern truck industry. We can therefore not only assess the market sizes and outlook over the coming decade, but also help the find the best market niches for truck manufacturers and their respective products and services.



**So the Middle Eastern truck market will boom – will there be any specific segment to focus on?** To be effective in any market, manufacturers need to understand the dynamics in the respective segments. As manufacturers’ truck types differ significantly on a global level, a segmentation that goes beyond just weight classes is necessary to understand real market potential. Consequently, we introduced three segmentation levels for trucks in this study. The most basic level is the so-called budget truck, which is relatively crude in every respect, built for emerging-market usage in challenging conditions. The mid-level truck segment uses higher quality, productivity and feature levels. The high-end trucks are the most sophisticated in every respect, defined by their high technical standards and productivity.

Figure 3: Sales development of trucks in the Middle East region split by the sophistication segments shows a clear growth for high-end trucks followed by mid-level trucks, the budget truck segment marginalizes



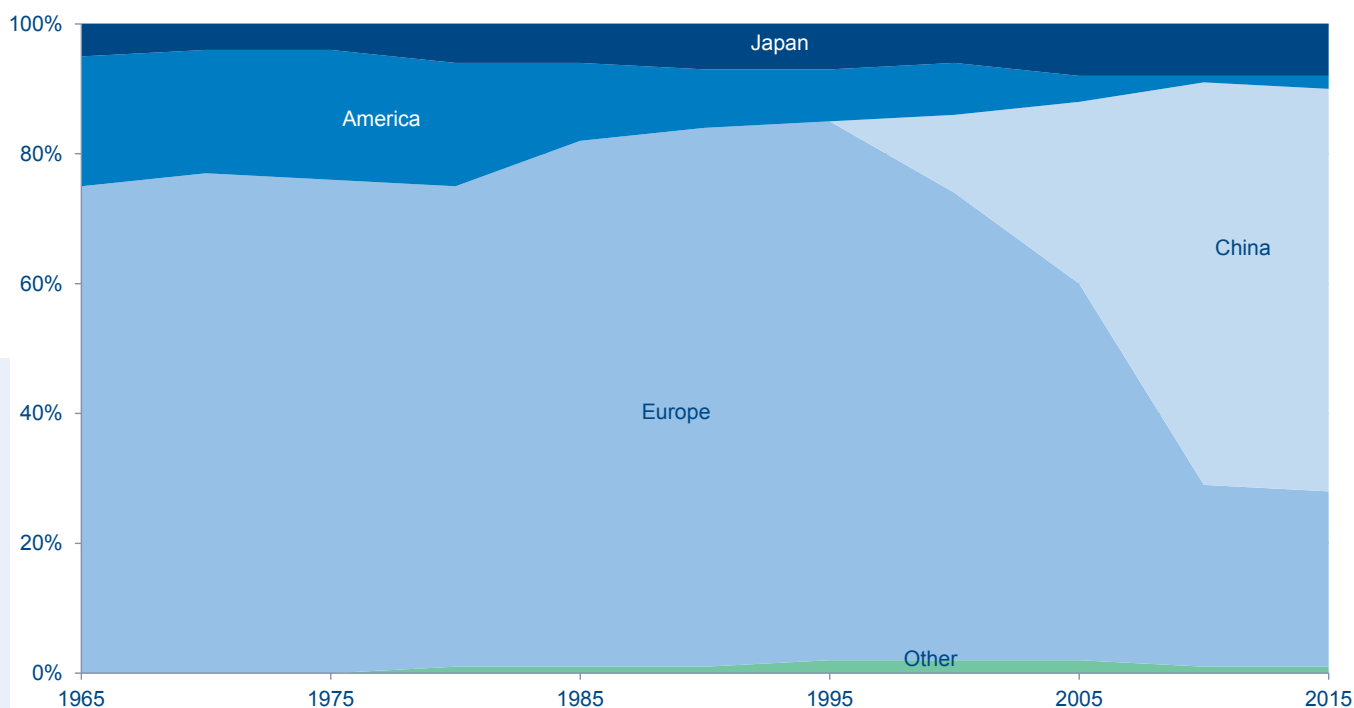
Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

A critical outcome from our analysis is that the shift to quality trucks is clearly present in the region. This is the key entry wedge for Western brands to get back to a strong position in the Middle East. However, it is important to act fast to leverage the growth opportunities. The emerging market brands, mostly Chinese, are gradually increasing the quality of their trucks and services in the region. Hence, it is a fallacy to expect these manufacturers to just leave the region as Western brands (re-) enter Middle East. They will compete with their own higher-quality trucks for similar customers to those of the Western brands. The message to manufacturers is that segment development is moving to high-end and mid-level trucks, i.e. a clear directional shift in favor of quality. However, the brand landscape will remain diversified, with brands from all regions of the world competing for business.

**How has the Middle Eastern market developed in terms of brand population?** Arthur D. Little analyzed the evolution of truck-brand origins by region and its implications for truck manufacturers. Traditionally, manufacturers from Europe and, to a lesser extent, North-America and Japan, dominated the Middle East. As political tensions in the region increased, Chinese manufacturers

came in, mostly to substitute the no-longer-present or -wanted Western brands. This impacted the manufacturer-origin mix substantially.

Figure 4: The brand origin split in the Middle East has evolved fast and shows the political implications and impact of manufacturers' movements



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

The strong growth of Chinese manufacturers in the region is not a temporary phenomenon, but more structural in nature. This is due to the fact that Chinese manufacturers are in the process of launching more sophisticated trucks that will allow them to meet more demanding market requirements. Hence, the Middle East will be a global melting pot of truck brands and concepts, ranging from less expensive mid-level Chinese trucks to high-end European trucks, with Japanese, American and increasingly other Asian brands all coming into the market. To reiterate our message, the only regional aspect of the truck market in the Middle East is the region – from a product and concept perspective, it is of global strategic importance for all manufacturers and consequently highly competitive.

**What are the operating conditions and typical use types like in Middle East?** Every region and every market has its specific challenges. As small as they may seem, manufacturers need to be aware of these requirements to calibrate their trucks and services accordingly. Therefore, considering regional specifics is essential, with analysis of the key operating conditions, fleet structure and the situation of truck drivers. The devil is often in the details, and getting this right is essential for successful operations. A key example is that the topography and climate require trucks to have a desert kit. Also, the fleet structure and haulage pattern of trucks need to be understood, in order to offer suitable service and after-sales products for operators. Finally, awareness of road safety and driver needs is equally important.

Trucks in the Middle East are relatively often used in the petroleum industry and related transport tasks, but also in construction and mining. As construction and mining are important within the

region, truck operators have specialized in supporting this sector. However, many economies in the Middle East are now in the process of reducing their dependence on the petroleum industry significantly. These economic diversification initiatives also impact the logistics industry. Truck fleets need to adapt to these changing economic requirements. This implies that, firstly, several trucks are economically obsolete, and furthermore, operators will require more road-going trucks that perform optimally in these usage patterns, and to a lesser degree petroleum industry-related trucks. Truck manufacturers need to be aware of this change, as the truck models and their calibration need to cover a more diverse market spectrum, catering to all operator types.

**What countries are most important?** The Middle East is a remove substantial region that consists of heterogeneous market sizes, with often significantly different economic footprints. From a truck market-size perspective, the largest markets in the Middle East are Iran, Saudi Arabia and Turkey. These are the dominating markets now, and expected to sustain their position in the next decade. Together, they account for almost 85% of all trucks sold in the entire region.

Of these three markets, Iran is the largest, followed by Saudi Arabia and Turkey. After the lifting of the sanctions, Iran is now accessible again to Western brands. At the same time, the opening of Iran triggers strong economic growth, which naturally drives up truck demand as well. This creates an outstanding foundation for truck sales – especially for high-quality trucks. To be competitive, operators need highly productive and reliable trucks, which triggers a boom in the higher-quality truck segments only – budget trucks are shrinking to marginalization. Western brands have had a strong presence in Iran, and are now in a position to grow again. We expect to see many brands enter into Iran in the near future.

Saudi Arabia is in the process of diversifying its economy and becoming less dependent on the petroleum sector. For truck fleets this will have implications too, in term of vehicles that are required. This will provide an additional boost for truck demand and diversify the truck types, and consequently, create need for high-end and mid-level trucks.

Turkey's more diversified economy (compared with most markets in the Middle East) has also resulted in a more diversified truck demand. Structurally, we see less change taking place in Turkey, as the market is already at a high sophistication standard. Despite current volatilities, Turkey's economy should develop favorably and continue to demand high-quality trucks.



# 1. Introduction

Why is the Middle Eastern truck industry such a fascinating place to look at now? What is about to happen there has far-reaching global implications. In a nutshell, the Middle East is a global melting pot of vastly different truck manufacturers and concepts. Traditionally, Western brands dominated new markets quickly, making inroads with high-tech products and strong financial backings. Conversely, emerging-market manufacturers, especially Chinese brands, entered markets with basic trucks and limited or no after sales and service. However, both sides have learned over the past decade. Western brands are aware of more competition and changing operator requirements. Chinese manufacturers have understood that product quality is important, and are offering more sophisticated trucks and improved service. Imagine what happens when these two clusters meet – fierce competition with implications far beyond just the Middle East. All manufacturers will need to work hard to stay in business. Despite that fact that the region will grow substantially, manufacturers that chose the wrong strategy might be forced out.

Due to our strong position in the market, Arthur D. Little is able to facilitate a better regional understanding. We have leveraged our network and spoken with experts to create a foundation to understand the Middle East better and reveal opportunities for truck manufacturers and suppliers. We also create a basis for manufacturers to understand their position.

## 1.1 Definitions and scope of the study

The focus of the study is the Middle East; we include the following countries: Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Turkey and the United Arab Emirates. We exclude Iraq and Syria due to ongoing turmoil in both countries. The majority of the study is on the regional level; however, key markets are individually covered.

This study comprises trucks with gross vehicle weights of 6t and above. We subdivide the weight range into medium and heavy trucks. Medium trucks have weights of 6t to 15t; heavy trucks have weights of >15t. Buses and trailers are not part of this study.

For a meaningful context on which to base the analysis, we needed historical and future data that would reach far enough. A time horizon of 10 years provides significant context, and ranges from 2006 to 2026. Looking 10 years into the future is important

for strategic planning purposes, and anticipates changes and opportunities for truck industry stakeholders in the Middle East.

Trucks in the region for military or humanitarian purposes are not counted in the sales volumes of the study; neither are military vehicles and other unregistered trucks.

Figure 5: All key markets in the Middle East are included in the study, covering the entire region for the first time with an in-depth analysis of the truck industry



Source: Weatherbase

## 1.2 Sophistication explanations

All truck industry stakeholders need to understand the new dynamics in the Middle East, which calls for a clear definition framework. Arthur D. Little provides this, creating a transparent and systematic approach to the topic. We have identified three truck segments that vary in volume and requirements – and most importantly, in growth outlook: budget, mid-level and high-end. It is essential for manufacturers to understand the dynamics of the segments for optimal strategic positioning.

The parameters used to determine the sophistication levels are:

- Technical sophistication of the truck
- Focus on total cost of ownership (TCO) versus list price

- Preventative maintenance and service concepts
- Overloading capability (tons over official GVW)
- Truck uptime (hours driven per day)

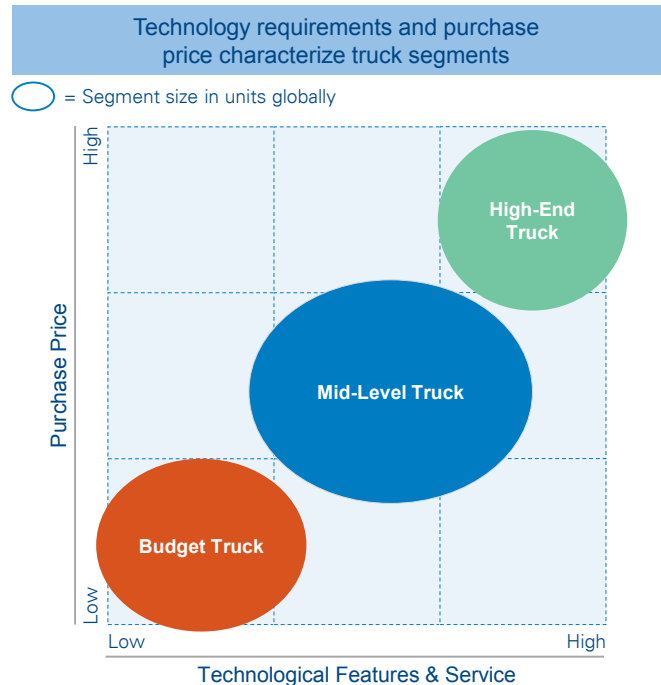
Based upon these five parameters, we group trucks into these three segments per market and predict the segment development for the next decade. The truck segments that we identify are the following:

- **High-end truck segment:**
  - Highly sophisticated truck, high purchase price (~€85k – ~€135k)
  - High productivity (hours uptime/day) and best total cost of ownership
  - Need for maintenance as necessary, at dedicated service points
  - Limited to no overloading tolerance (up to ~10% over official GVW – exceptions)
- **Mid-level truck segment:**
  - Good-quality truck with medium purchase price (~€56k - ~€75k)
  - Medium productivity and total cost of ownership
  - Regular service required at fixed mileage intervals
  - Overloading tolerance (up to ~30% over official GVW)
- **Budget-truck segment:**
  - Basic truck, proven mechanical components, low purchase price (~€28k - ~€38k)
  - Low productivity and uncompetitive total cost of ownership
  - No regular service, repair after breakdown
  - High robustness with high overloading tolerance (>50% over official GVW)

It is critical to stress that these are ABSOLUTE and not RELATIVE definitions of truck concepts, to ensure global segment consistency of every truck model. A segmentation that is not based on absolute definitions and criteria would not be applicable globally and or show structural shifts in quality levels. A direct implication of this segmentation is that certain truck concepts can disappear over time as the requirements in a market or region change. Conversely, sophistication segments that are weak or nonexistent now can emerge over time. It is important to be aware of this definition to understand why our view on the budget segment as defined is marginalizing.

The below chart visualizes and summarizes the sophistication segmentation. Here, the three truck segments are ranked according to purchase price as well as technology and service.

Figure 6: Globally, there are three prevailing truck concepts, where the technology and service requirements as well as the respective purchase price correlate strongly



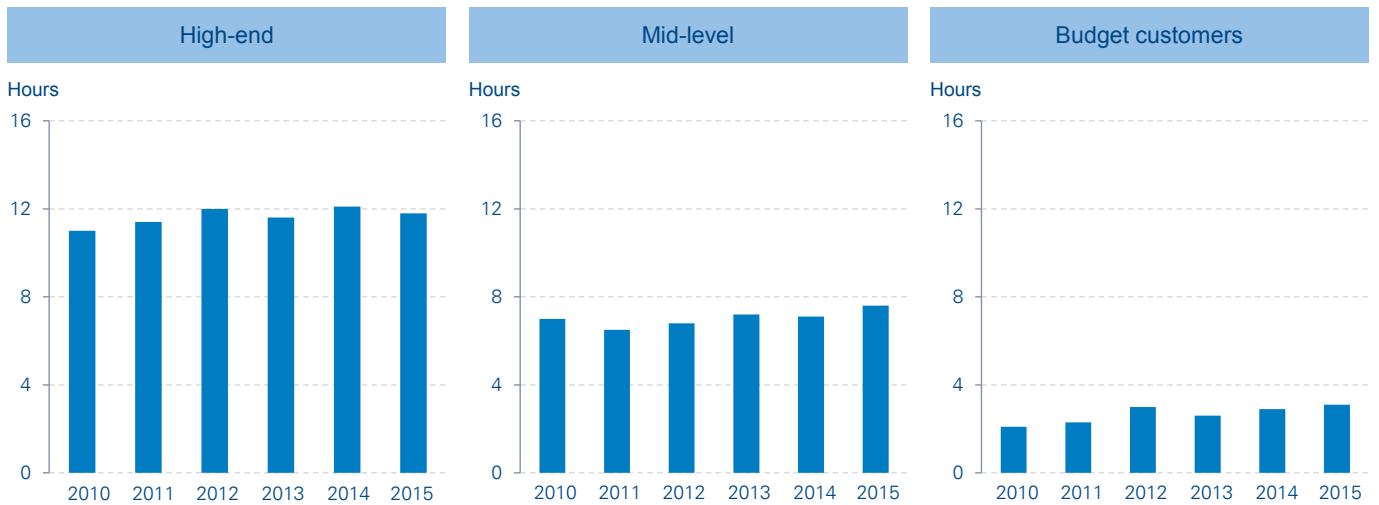
Source: Arthur D. Little Analysis, Expert Interviews

As mentioned above, in fleet operations, truck uptime is an important parameter to determine sophistication. The sophistication of trucks correlates strongly with their utilization levels, as the below chart illustrates. High-end trucks are used predominately by major fleets with high efficiency, which therefore ensure that their trucks operate on a high daily-hour basis to maximize productivity. Mid-level trucks are typically operated less intensely, as their respective owners are still in the process of optimizing usage. Budget trucks are weak in terms of daily utilization; truck operators do not drive sufficiently per day, and therefore they often struggle to be profitable.

### 1.3 Economic composition of the Middle East – regional and country analysis

Dependence on the petroleum sector is generally high in the Middle East, with few countries, such as Israel and Turkey, displaying more balanced economic footprints. The economic-wealth levels vary substantially, but for all markets the trend looks favorable, which is the foundation for increasing truck demand. The largest countries in the Middle East are Iran, Saudi Arabia and Turkey; these also dominate economically or are likely to in the future. Conversely, smaller countries often have high GDPs per capita and more diverse economic footprints.

Figure 7: Significant differences occur between customer types regarding the average truck utilization level per day



- Average daily utilization rate (up-time) is a critical measure for the productivity of trucks
- Depending on the customer sophistication level, the truck up-time per day differs significantly
- Poor infrastructure quality in developing markets reduces overall truck uptime for all customer types
- In some markets in the Middle East regions, budget trucks are also used for longer hours, especially in construction and mining

Source: Arthur D. Little Analysis; Expert Interviews

From an economic perspective, the region is, to a large degree, dependent on export of petroleum products. However, not all countries in the Middle East are equally dependent on the petroleum sector – Turkey and Israel are to a far lesser degree than Saudi Arabia and Oman.

Nevertheless, on a regional level the Middle East is dependent on this sector. Many countries have recognized this and consequently are seeking to diversify their economic footprints. These initiatives have had a knock-on effect on truck demand, as a wider economic footprint also requires different trucks to realize the diversification. This transition process offers additional sales-growth potential for truck manufacturers.

The economic diversification process is different in every country, dependent on the respective possibilities that prevail. However, in most cases we see that diversification will have implications on the truck operators, as different cargo types need to be transported. This is a critical aspect for truck operators and manufacturers, as new vehicles will be required, rendering some of the existing trucks obsolete. A good example of economic diversification measures being undertaken is the building up of aviation hubs, especially in UAE member countries. The tourism industry and the logistical hubs in several countries also bear fruit. More recently, Saudi Arabia has launched various so-called “clusters”, for instance, for the automotive, chemical and pharma industry. All of these will impact the logistical services, and consequently the truck types

in the region. They are also the main drivers of ever-higher quality demands for trucks, hence a major catalyst for the growing sophistication requirements.

Every economy in the Middle East is different in terms of sector composition and outlook. For truck industry stakeholders, it is critical to understand the economic picture, as these impact the overall truck sector and the sophistication segment. In the section below, we highlight the key economic parameters of every country included in the study:

**Egypt:** Since the revolution in January 2011, Egypt has been suffering from severe economic instability that resulted in a slowdown of GDP growth, although it recovered slightly in 2015 (+4.2% real growth rate) as foreign direct investments rebounded. As a consequence of a drop in tourism, capital flight and declining exports, the country’s international reserves have decreased by more than half since 2011. This has led to a severe dollar shortage, limiting economic activity and vital imports. The political instability also resulted in a sharp decline in truck sales, which have been recovering continuously in recent years.

**Iran:** International trade sanctions put the economy under strong pressure, as oil revenues were declining and the government was forced to cut costs. The country is characterized by relatively strong economic policies and dependence on oil and gas exports (which were suspended to a large degree), but it also has significant agricultural, industrial, and service sectors. After the lifting of the international sanctions, the government

Figure 8: Key economic parameters of the Middle East markets in the context of their truck sales (2015 actual data)

	GDP		Population in million			Sector Split in %			Truck Sales	Country Size	Import/Export in million USD			Petro-leum	Total Invest
	USD Billions	USD	Σ	Working	≤ 24	1 Agr.	2 Ind.	3 Serv.	Units	Sq. km	Import	Export	Δ	Thousand Barrels / Day	% of GDP
Egypt	330.77	3,476	91.5	29.6	43.8	14.3	39.6	46.1	6050	1,001,450	71,607	43,685	-27,921	711	14.0
Iran	387.61	4,877	79.1	27.1	33.8	9.3	38.4	52.3	69,800	1,648,195	80,362 <sup>1</sup>	102,796 <sup>1</sup>	22,434 <sup>1</sup>	3,447	n.a.
Israel	296.07	35,343	8.4	3.7	3.5	2.5	27.3	70	3,340	20,770	83,748	92,190	8,442	5.8	19.4
Jordan	37.62	5,513	7.6	2.0	4.52	3.8	29.9	66.3	3,065	89,342	22,528	14,190	-8,338	0.5	20.2
Kuwait	120.68	29,363	3.9	2.0	1.13	0.4	59.4	40.2	1,575	17,818	51,166 <sup>1</sup>	111,047 <sup>1</sup>	59,881 <sup>1</sup>	2,699	19.7
Lebanon	51.17	11,237	5.9	2.0	1.92	5.6	24.7	69.7	1,330	10,400	30,589	26,821	-3,768	0	n.a.
Oman	58.49	15,233	4.5	2.2	1.6	1.4	52	46.6	2,900	309,500	38,117 <sup>1</sup>	56,289 <sup>1</sup>	18,172 <sup>1</sup>	1,000	29.5
Qatar	185.40	76,576	2.2	1.6	0.6	0.1	58.8	41.1	3,130	11,586	59,271	92,411	33,140	2,060	n.a.
S-Arabia	653.22	20,813	31.5	12.1	12.8	2.3	46.9	50.8	20,306	2,149,690	250,506	218,024	-32,482	12,164	27.6
Turkey	733.64	9,437	78.7	28.4	33.1	8.1	27.7	64.2	35,447	783,562	221,354	200,828	-20,526	62	20.0
UAE	345.48	36,060	9.2	6.3	2.0	0.7	49.4	49.8	5,630	83,600	311,238 <sup>1</sup>	391,296 <sup>1</sup>	80,057 <sup>1</sup>	3,474	23.8

<sup>1</sup> Data from 2014 (2015 not yet available)

Source: IMF, CIA World Factbook, U.S. Energy Information Administration, IHS Truck Sales Data Saudi Arabia, Arthur D. Little Middle East Model; Arthur D. Little Analysis

hopes to attract more foreign direct investment, which should lead to a higher GDP growth rate and boost truck sales in the next decade.

**Israel:** The country is marked by a technologically advanced free-market economy, whose leading export products are cut diamonds, high-technology equipment and pharmaceuticals. During the last decade Israel showed a stable growth rate of roughly 5% a year, only interrupted by a short recession during the economic crisis in 2008. However, due to decreased international and domestic demand as well as lower investments, which have primarily been caused by the uncertain security situation, GDP growth is slowing down, having amounted to 2.6% in 2015.

**Jordan:** Following a strong growth phase before the economic crisis, Jordan's economy is stagnating and the real GDP growth has been below 3% in recent years (2015: 2.5%). The economic slowdown has largely been caused by regional turmoil, which influenced tourism and trade with several local partners. Still, the number of truck sales increased slightly over the last decade due to vehicle replacement and the fleet formation process.

**Kuwait:** Kuwait has a geographically small but wealthy economy dominated by strong oil production, which contributes more than half of the country's GDP and is planned to increase to 4 million barrels per day until 2020. The initiative of the government to

diversify the economy and attract more investments has not yet succeeded due to the uncertain political situation. Hence, the country's GDP growth rate in 2015 only accounted for 0.9%, and truck sales are stagnating.

**Lebanon:** The Lebanese government follows a liberal trade policy and does not restrict foreign investment. However, the investment conditions are difficult due to red tape, corruption, tariffs and weak intellectual property rights. The main growth sectors of the service-focused country are banking and tourism. As a consequence of the Syrian conflict and the influx of more than 1 million refugees, Lebanon's internal tensions have increased. This led to a drop in truck sales in the last years, especially in 2013 and 2014, and a significant slowdown of the economic growth rate (2015: 1%).

**Oman:** Due to Oman's high dependence on oil production, which contributes nearly half of the country's GDP, the government is enforcing diversification, industrialization and privatization in order to reduce the oil sector's dominance. The main growth targets of the government's strategy are tourism and gas-based industries. The economic crisis in 2008 substantially hit the economy and led to a reduction in the number of truck sales, which still has not reached the pre-crisis level. In recent years the low oil price has set the economy under pressure, and the GDP growth rate is forecast to fall to under 2% in the upcoming years.

**Qatar:** Qatar is mainly driven by its oil and gas production enabling a stable growth rate over the last years, which has recently been influenced by the low oil price. Still, Qatar was able to prevent a budget deficit in 2015, but it projects a deficit of 6% of GDP in 2016. Besides the oil sector, the country is experiencing growth in manufacturing, construction and financial services. The World Cup 2022 is pushing large infrastructure projects such as a metro system, a new port, roads and sports-related infrastructure.

**Saudi Arabia:** The country's economy is primarily dependent on the petroleum sector. However, the country is in the process of diversifying the economy and reducing its dependence on oil. The GDP growth rate has been stable in recent years (3.4% in 2015), and truck sales have doubled in the last decade. Saudi Arabia plans to cut capital spending in the future and reduce the deficit with the introduction of value-added tax and a reduction of subsidies.

**Turkey:** The country experienced years of strong economic growth in the beginning of the millennium and after the economic crisis. The traditional agriculture sector still accounts for one-quarter of employment, while industry and services are increasingly important drivers of the economy. Starting in 2014, high interest rates and lack of consumer demand slowed down the growth. The current political instabilities after the attempted coup might reduce foreign investments in the country and hence further decrease economic growth, which has already declined in the last years.

**United Arab Emirates:** The country's openness towards foreign investments encourages companies to invest in the United Arab Emirates and consequently create economic diversification, which has reduced the portion of oil and gas

output to one-quarter of GDP. The economic crisis in 2008 also hit the economy, and the number of truck sales plummeted by more than 80%. Despite a recovery it is still at half of the pre-crisis level. Economic diversification, increased private sector employment and improved education will characterize the future activities of the government.

### 1.4 Key parameters for truck sales in the Middle East

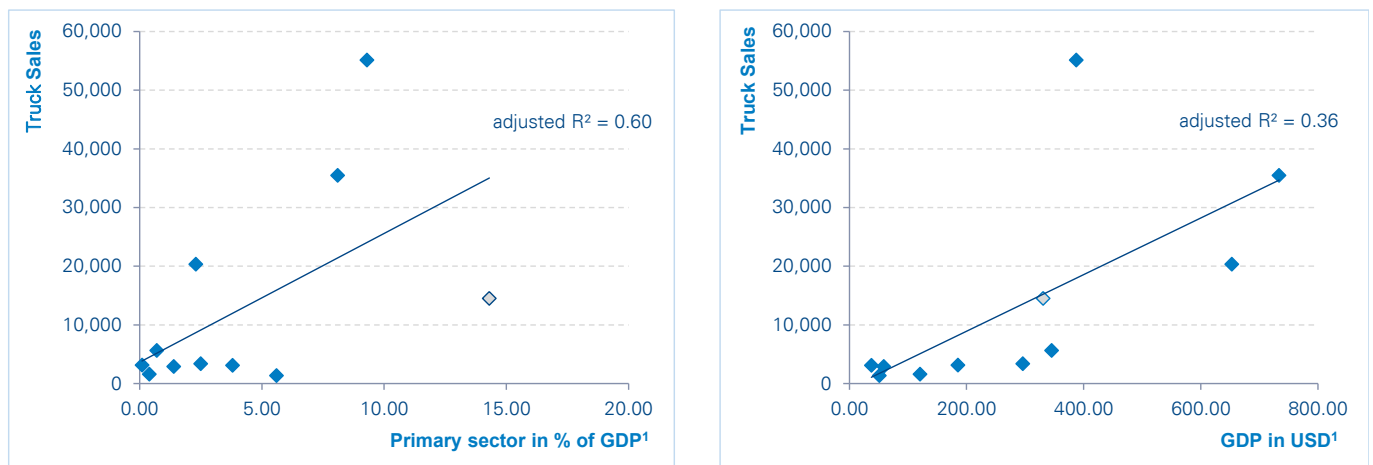
The main drivers of truck sales for Middle Eastern markets are the percentage growth of the primary sector as well as the country's GDP. The economic outlook for all countries in the Middle East is positive, with the largest countries directionally also featuring the stronger growth increase – an excellent foundation for truck demand.

Truck sales in the Middle East are influenced by several economic and political factors, which diverge sharply from country to country, reflecting the respective economic footprint. But on a regional level, there are two major drivers behind the number of truck sales in a country and the economic parameters.

Conducting various statistical analysis, what emerged is that the GDP and the percentage of the primary sector are the more relevant parameters when it comes to the dependence of truck sales.

This result illustrates clearly that not only is the overall economic development of a country in the Middle East a relevant factor that influences the level of truck sales, but the sector split is also of high importance. A strong economic performance and large

Figure 9: Analysis of truck sales in the Middle East and key economic parameters (2015)



<sup>1</sup> Due to the political and economic instability, which significantly reduces the statistical relevance, Egypt has not been taken into account in the model. In the graphs Egypt's values are illustrated in slight gray.

Source: Arthur D. Little Analysis and Estimations, IMF, IHS Truck Sales Data Saudi Arabia, CIA World Factbook

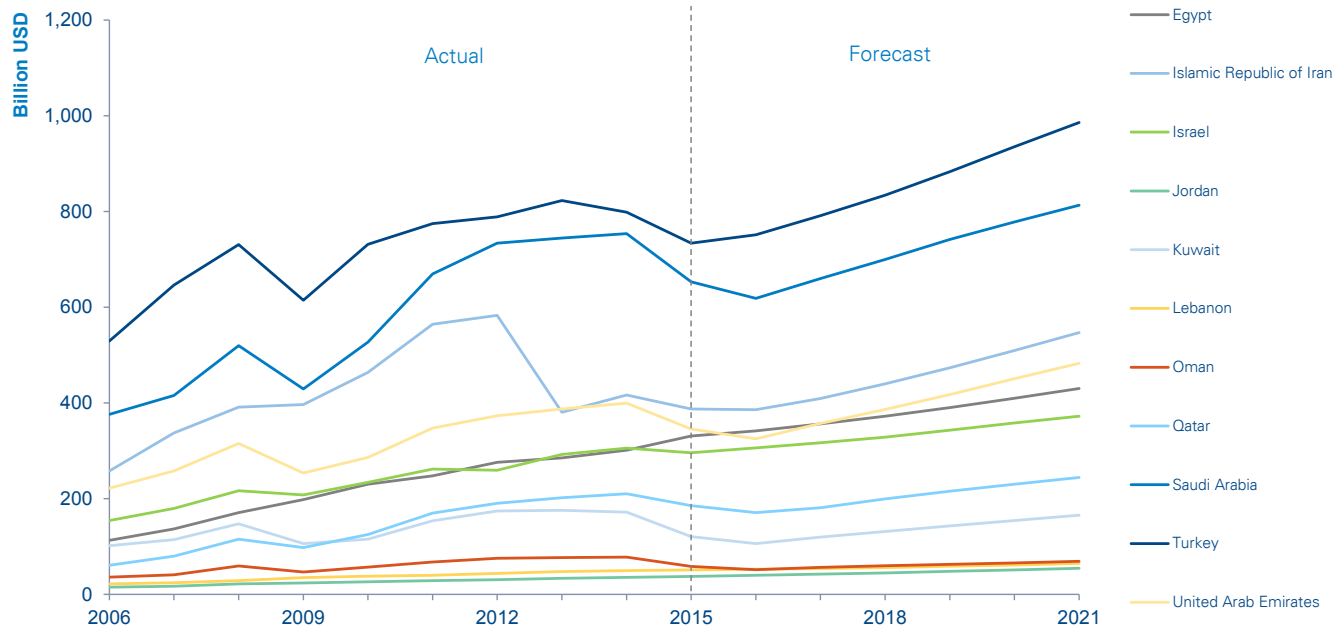
investments are not only boosting the GDP, but also increasing the demand for trucks, as they are needed for the realization of related projects. Especially in countries whose industries are strongly focused on agriculture, this need is further intensified by the relatively high necessity of trucks for activities in the primary sector.

The GDP developments for the countries in the Middle East reflect the volatilities in the region. Often the swings in the economic cycle are influenced by not only political developments, but also economic events. Also evident from the

analysis are the range of country wealth and the sizes of the economies. The largest three economies are Turkey, Saudi Arabia and Iran, and their economies are all set to grow notably until the end of the decade.

Directionally, the economic outlook is favorable for the Middle East, with the largest economies also increasing their GDP strongly in the next years. This underlines our thesis that truck demand will increase notably as well, and substantiates our view that there is a big shift towards truck quality.

Figure 10: GDP development for key markets in the Middle East



Source: IMF, Arthur D. Little Analysis and Estimations (Data from 2015)



# 2. The Middle East in the context of the global truck industry

The global truck industry is in a volatile state, generally characterized by growth that is moderating in emerging markets and stable in industrialized markets. Demand for heavy trucks is on a generally higher level than that for medium trucks, but also shows higher volatility levels. Arthur D. Little integrated its view on the Middle East to place the region into a global context. Sales within the Middle East are small on a global scale, but nevertheless of strategic significance for all truck manufacturers. Taking this view is important for manufacturers to set priorities and targets for their operations. We do not believe it has been the case to the extent that is necessary for market success regionally or globally.

The chart below puts the Middle Eastern medium and heavy truck markets into a global sales context. In the heavy segment, the Middle East market accounts for only 6.5% of global truck sales, and in the medium segment, 4.8%. This market, especially the growth potential it bears, needs to be captured in a systematic manner in order for manufacturers to leverage opportunities to the fullest.

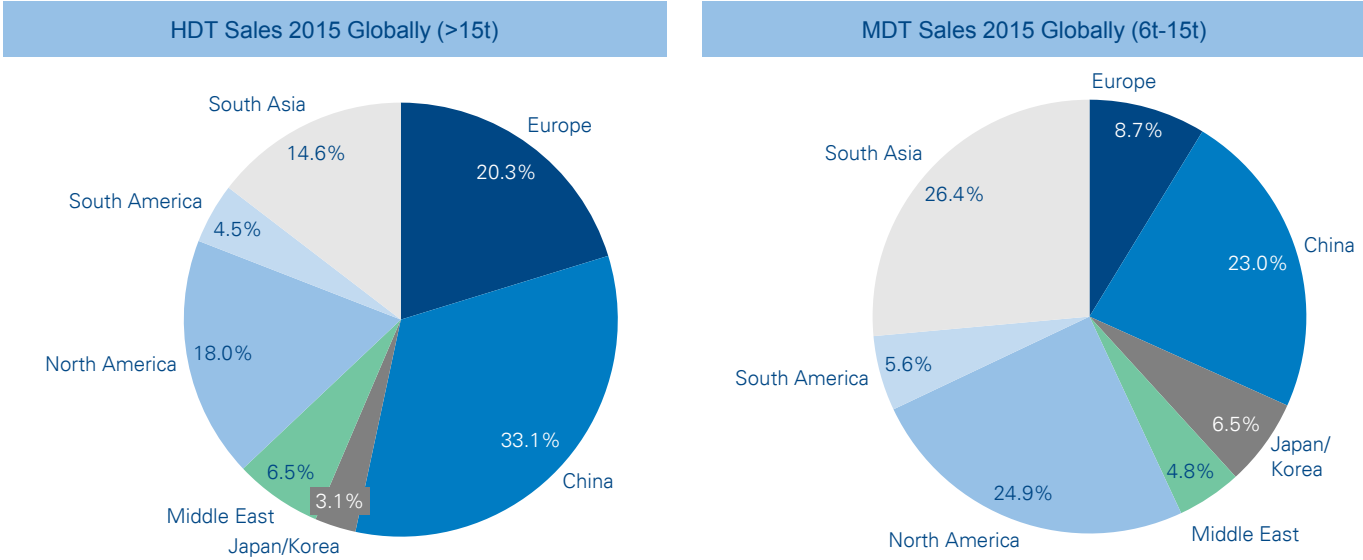
The demand for trucks in the Middle East is generally increasing, mainly for two reasons – firstly the significantly improved

political situation with Iran, and secondly the economic diversification of many petroleum-dependent countries. This trend will occur over the next decade, and have additional upside possibilities as Syria and Iraq stabilize. The potential in the Middle East is substantial, and will gain in importance from a truck sales and sophistication perspective and provide opportunities for Western brands and other manufacturers of high-level trucks.

### Global truck industry developments

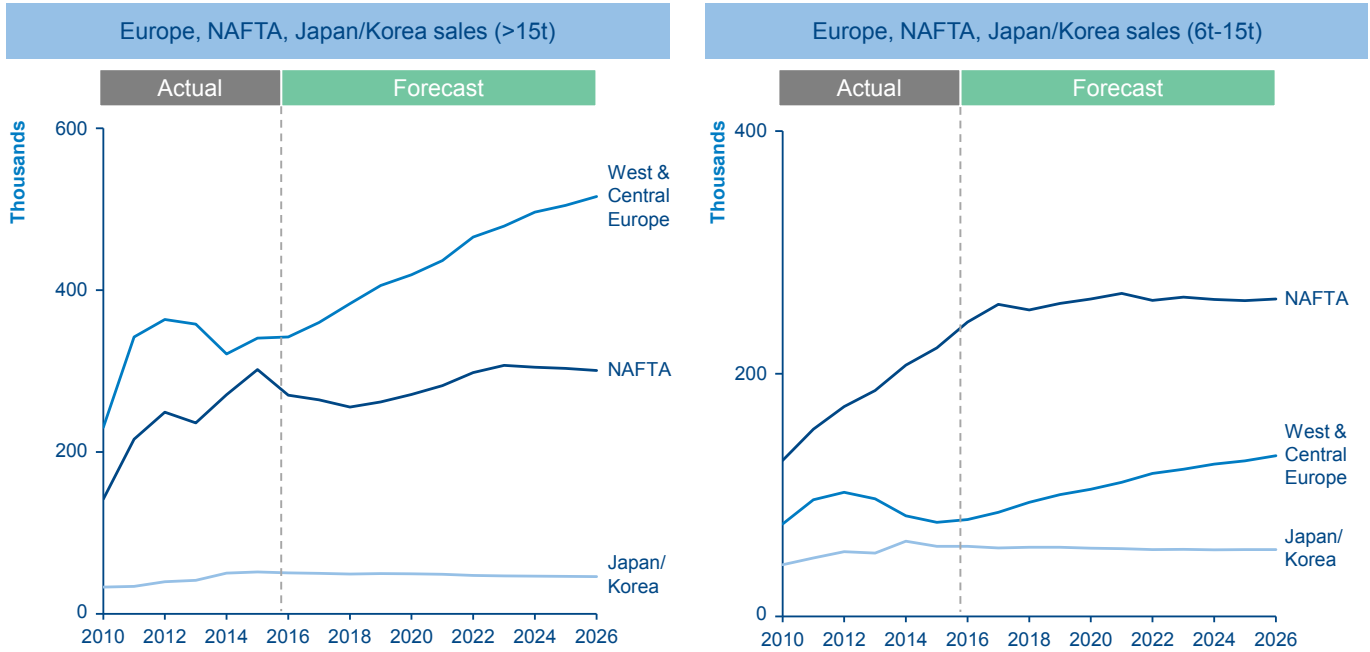
Within the industrialized markets, there are clear trends and developments for medium and heavy trucks. The overall growth trend for heavy trucks is stronger than that for medium trucks. Also, the overall market size for heavy trucks is much larger than for medium trucks, two thirds are accounted for by heavy trucks, and one third of the global sales by medium trucks. Here, Europe has the most extreme segment split of the three industrialized regions; both NAFTA and Japan/Korea have more even medium and heavy splits. These splits reflect the transportation pattern in the respective countries; Europe requires trucks for longer and regional haulage, and for NAFTA truck transportation is more evenly distributed between the two levels of haulage. In Japan/Korea, medium trucks are still the

Figure 11: Truck sales in the Middle East are small compared to global truck volumes, but hold substantial potential for growth



Source: IHS Truck Sales Data; Arthur D. Little Middle East Model, Arthur D. Little Analysis; Expert Interviews

Figure 12: Within the industrialized markets, the main growth area is with European heavy trucks, NAFTA and Japan/Korea are directionally stagnating



Source: IHS Truck Sales Data; Arthur D. Little Analysis

dominating segment due to lack of operating space, which puts heavy trucks at a disadvantage.

In each of the three regions, the respective domestic manufacturers dominate the two segments. Directionally, the strongest growth for heavy trucks in these three regions is expected in Europe. This is attributed to the market recovery potential, and also the ongoing boom in the Central and Eastern European markets. In the medium segment, Europe will keep recovering and grow to new high levels due to more pressure for environmental compliance from regional distribution trucks. NAFTA will stabilize without additional volume growth with both heavy and medium trucks. In the short term, the market cool-off phase in the heavy segment does not impact medium trucks significantly, as the medium segment has had no recovery peak, but grown more steadily in the past years. In Japan/Korea, the market shows little volatilities compared with Europe and NAFTA. As medium trucks are the primary segment in the market, the ongoing efficiency gains at operators and a steady economic environment have resulted in a slight demand decline over time.

Within the emerging-market and new-growth countries, the expected developments are different to industrialized markets. Firstly, China is cooling off considerably and will remain on a structurally more sustainable level than it was on during the subsidy-fueled peak in 2010. To a lesser degree than in the heavy truck segment, the Chinese medium truck demand will also stabilize on a lower level after its cool-off phase finishes at

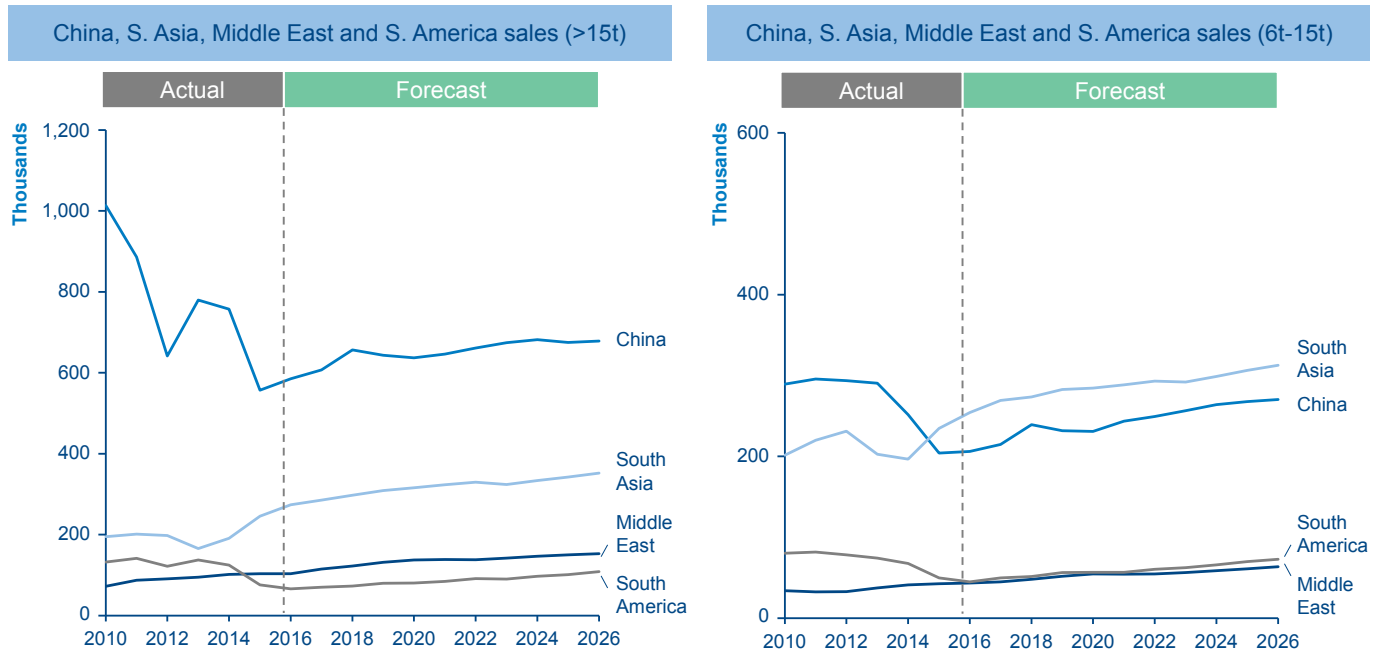
the end of this decade. As manufacturers have not expected the reduced levels, overcapacity is still a challenge for Chinese manufacturers, driving prices down for ever-more sophisticated trucks.

In contrast to China, India is growing in both medium and heavy trucks due to stronger economic growth developments. The market increase is compounded by improving road infrastructure developments. This has positive implications for truck demand, especially for heavy truck manufacturers making investments into higher-quality trucks that are financially attractive for fleets, as they can use the higher productivity on the roads. Both the increase in more sophisticated trucks and the improving road infrastructure have resulted in a more efficient road transport sector.

Other South Asian markets are developing favorably; ASEAN is increasing, particularly driven by Indonesian growth. The smaller markets in ASEAN are also growing, driven by economic development and investment programs. This makes ASEAN an attractive region for manufacturers, especially for those with more robust product offerings. High-end trucks still remain a niche at this stage, but with the overall market and operator development, they will be a coming segment in the mid-term. ASEAN needs to be addressed with specific products to leverage the opportunities.

South America is currently impacted by the significant economic crisis in Brazil, which is expected to prevail for a

Figure 13: Within the transitioning markets, China's cooling off whilst India is growing, whilst Middle East and South America race for third place



Source: IHS Truck Sales Data; Arthur D. Little Middle East Model; Arthur D. Little Analysis

somewhat longer time. However, other larger markets such as Argentina, Chile, Colombia and Peru are also declining in market demand. Structurally, South America is not expected to recover to peak levels in the foreseeable future. While a presence in South America is strategically important due to the absolute sales volume and conceptual similarities between the trucks (hence less adaptation costs), manufacturers still need to critically look at the size of their operations and industrial footprints in the context of the new market realities, reduced pricing and intensified competition. The comparison with the market developments and expectations for the Middle East is interesting. Therefore, Arthur D. Little contrasted the two regions and derived implications for truck industry stakeholders.

### 2.1 South America versus the Middle East – Time to reassess priorities?

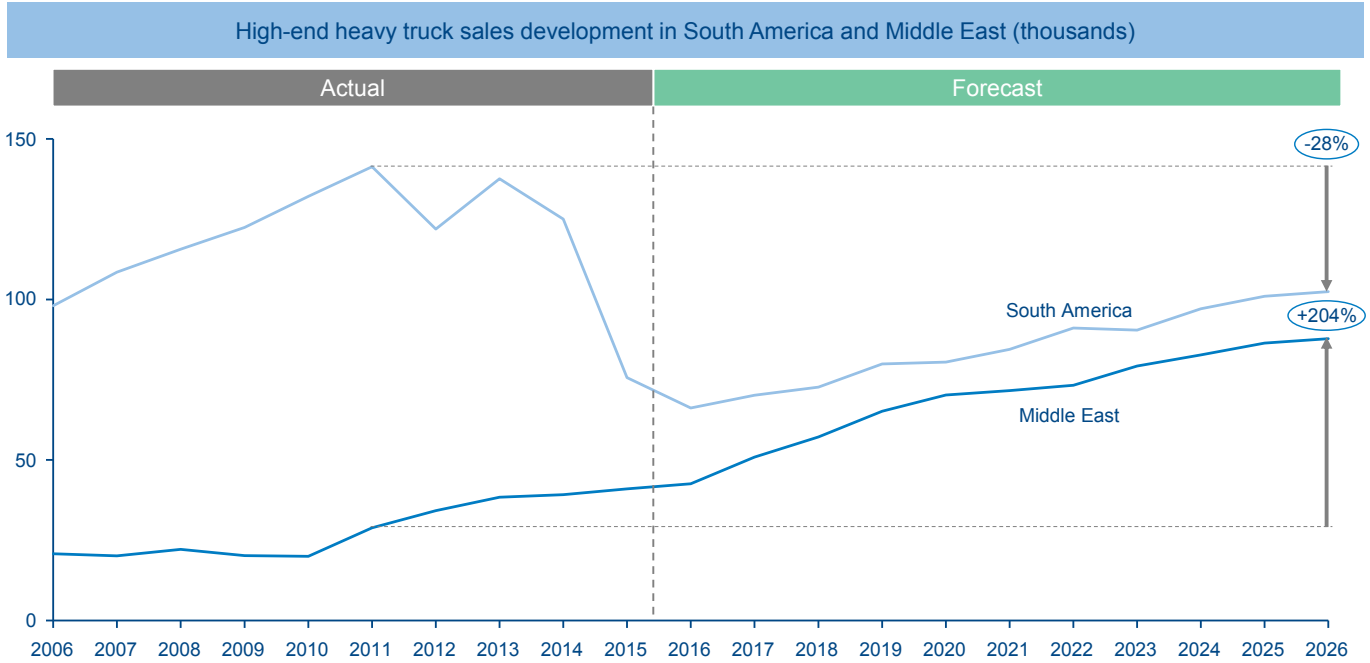
**The Middle East versus South America: Due to growth in South America over the past decade (mainly driven by Brazil) and the structural weakening of the Middle East, manufacturers have built up strong sales and industrial presences in South America. While a focus on South America was the best choice, manufacturers have over-exposed themselves to the region and now face challenges from the structurally lower demand.**

**Equally, manufacturers have not adequately focused on the Middle East, where significant growth potential is present. Consequently, a fundamental readjustment that reflects the strategic importance of the two regions is necessary.**

From a strategic perspective, Western truck manufacturers were primarily focused on South America as a key region outside of Europe due to sophistication similarities (South America has a significant high-end market) and a European manufacturer legacy presence since the 1950s. Western manufacturers also have a legacy presence in the Middle East. Political turmoil and legislative barriers in the Middle East have, however, shifted priorities at manufacturers to focus heavily on South America – and for a long time that made perfect sense. However, the ongoing economic crisis in South America, in particular Brazil, triggers the question of to what degree the manufacturer’s current industrial structure between South America and the Middle East are still adequate. The truck demand in South America will be on a structurally lower level and, in contrast, in the Middle East on a significantly higher level.

Truck sales continuously increased in South America for over a decade, driven by both stronger economic fundamentals and truck-specific subsidies (the most significant being Brazil’s Finame, the governmental subsidy program), as well as economic investment programs. Manufacturers expanded

Figure 14: High-end HDT truck comparison – European manufacturers were betting too long on South America and neglected the Middle East, markets will be equally important in the next decade



Source: IHS Truck Sales Data; Arthur D. Little Analysis; Arthur D. Little Middle East Model; Expert Interviews

their presence in the region with stronger truck production and increasing vertical integration levels. Examples are numerous: Daimler Truck, Volvo and Scania, as well as newer brands such as, Iveco and Daf, have widened their presence. As the economic growth lost steam and the truck subsidy programs were terminated, the truck market declined significantly. Manufacturers did not foresee the market development, and they were not prepared for such a strong downturn. This created a structural challenge for manufacturers and requires a longer-term commitment to the region before it will recover again.

Below, the chart shows the fallacy that many European truck manufacturers could fall into, beginning with an all-time high in South America compared with a historical low in the Middle East, and setting their priorities in accordance with historical truck sales rather than the new market realities.

In the Middle East, the market declined as South America boomed. This has shifted the attention of truck manufacturer management to South America, while leaving the Middle East largely aside. While it was correct from a sales perspective to prioritize South America over the Middle East for a longer period, a reassessment of priorities is necessary to avoid forgoing substantial sales and profit potential for European brands. As the analysis above shows clearly, both regions will be almost equally important from a sales perspective in the next decade.

As a result of the market decline and the resulting overcapacities in South America, manufacturers had to find short-term

solutions. They have started to export trucks from their South American plants towards the Middle East, in particular Turkey. As customer and climatic market requirements are directionally similar between South America and the Middle East, there are few changes that manufacturers have to make to their trucks. This is a temporary solution to use excess capacity. The long distances from South America to markets in the Middle East increase delivery times; therefore, this could only be a short term. The higher cost base, especially in Brazil, also has a negative margin impact. As markets in the Middle East will grow, neither the South American capacities, cost structure nor logistics are long-term options. From this standpoint, manufacturers need to question their existing production allocations between South America and the Middle East critically.

Arthur D. Little expects that due to economic diversification initiatives in many markets in the Middle East, manufacturers will get attractive conditions in which to build factories. The major challenge for a factory build-up is the supplier infrastructure in the region. However, as we also expect automotive manufacturers to create more local plants, suppliers will inherently create production capacity.

Consequently, it is imperative that factory capacity in South America be adjusted, while for many manufacturers factory space should be allocated in Middle East.

### 3. Trucking in the Middle East: A general profile of the climate, geography, truck drivers, road safety and fleet structure

**Operating realities:** The operating conditions in the Middle East are challenging for operators, drivers and trucks. In particular, distances and operating conditions (heat and dust), as well as road safety and driver qualifications, are challenges, compounded by some of the oldest truck populations of any region. Operators need to use trucks that can withstand this environment on a regular basis, and this calls for quality trucks and services.

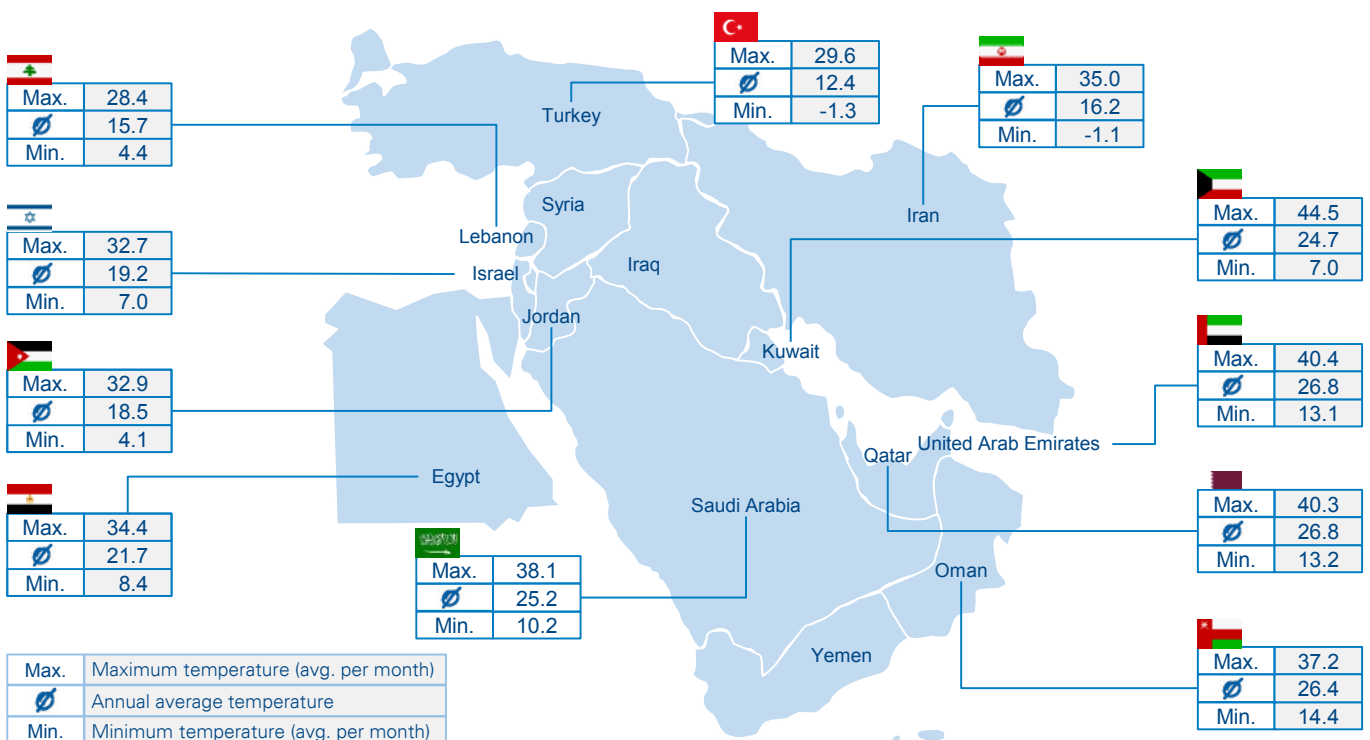
Trucks, like most other industrial equipment, need to be calibrated to the operating conditions. Therefore, it is necessary for truck operators and manufacturers to understand the conditions and operating environment. This section highlights the most important conditions that trucks in the Middle East face. As the devil is in the details, trucks need to be adjusted to the specifics of the market and operating conditions to be profitable for the operator. Here, as in many other aspects, the sophistication split comes into play. The higher the sophistication level of a truck, the higher the calibration level to the respective operating environment.

#### 3.1 Climate

The Middle East is among the hottest and driest regions globally. Temperatures are high all year round, though with significant cool-offs at night. This poses stress for the truck and its driver, and therefore trucks have to be calibrated to meet these challenging operating conditions. Examples of specific truck adjustments are cooling systems, especially in trucks traveling through the desert and those that transport heavy cargo. A further technical adaptation is the so-called desert kit, which is necessary to protect the truck against sand. This involves, in particular, bearings and filtration systems. It also requires stronger air-conditioning units.

However, not all trucks feature these technical adaptations to prepare for the operating conditions in the Middle East. There is a strong segment dependent adjustment. High-end trucks are equipped with these features, or at least can have them optionally. Trucks in the mid-level segment only have partial adaptation for the climate; budget trucks do not have them at all. This impacts the performance and longevity of trucks.

Figure 15: The climate in the Middle East region is challenging for trucks to operate given the severe thermal challenges



Source: Weatherbase

As a result of the high operating temperatures, service needs are also higher. Compared with trucks in Europe or America, those in the Middle East typically need service after 65–75% of the mileage covered. Without regular oil changes, in particular, damage can be high in the powertrain area. Manufacturers of higher-quality trucks therefore equip their trucks with on-board service-monitoring systems to ensure no breakdowns or unnecessary wear and tear occur.

Due to the climatic conditions, reliability is essential for operators, drivers and cargo. A breakdown can have severe implications due to the heat and sizes of many countries, which makes regular service a priority for operators and drivers. Manufacturers of high-end trucks have improved their road-side assistance, but breakdowns still often result in substantial losses for operators and even impact driver safety.

### 3.2 Geography and topography

Geography and topography have notable implications for trucks operated in the Middle East. This is due to the driving profile, the

distance and the topography that has to be covered, as well as the technical protection that a truck needs against the operating environment.

Distances are long in several Middle Eastern countries, which characterizes the mileage and uptime of trucks. Truck operating profiles vary depending on the markets; in some markets trucks hardly cross borders (e.g. Israel), while in other markets truck fleets specialize in haulage across the region (Jordan, Saudi Arabia and Turkey).

From a geographical perspective, the key challenges for trucks in the Middle East are the long distances they need to cover, together with the mountainous areas. Roads are also challenging in several markets due to their age and poor maintenance, which poses additional stress for the truck, driver and cargo.

Also, topography impacts the truck requirements and attributes. While several roads are flat, there are mountainous areas where trucks need to be adequately equipped in powertrain terms to operate efficiently.

Figure 16: From a geographical and topographical perspective, Middle East poses several challenges for trucks (2015)

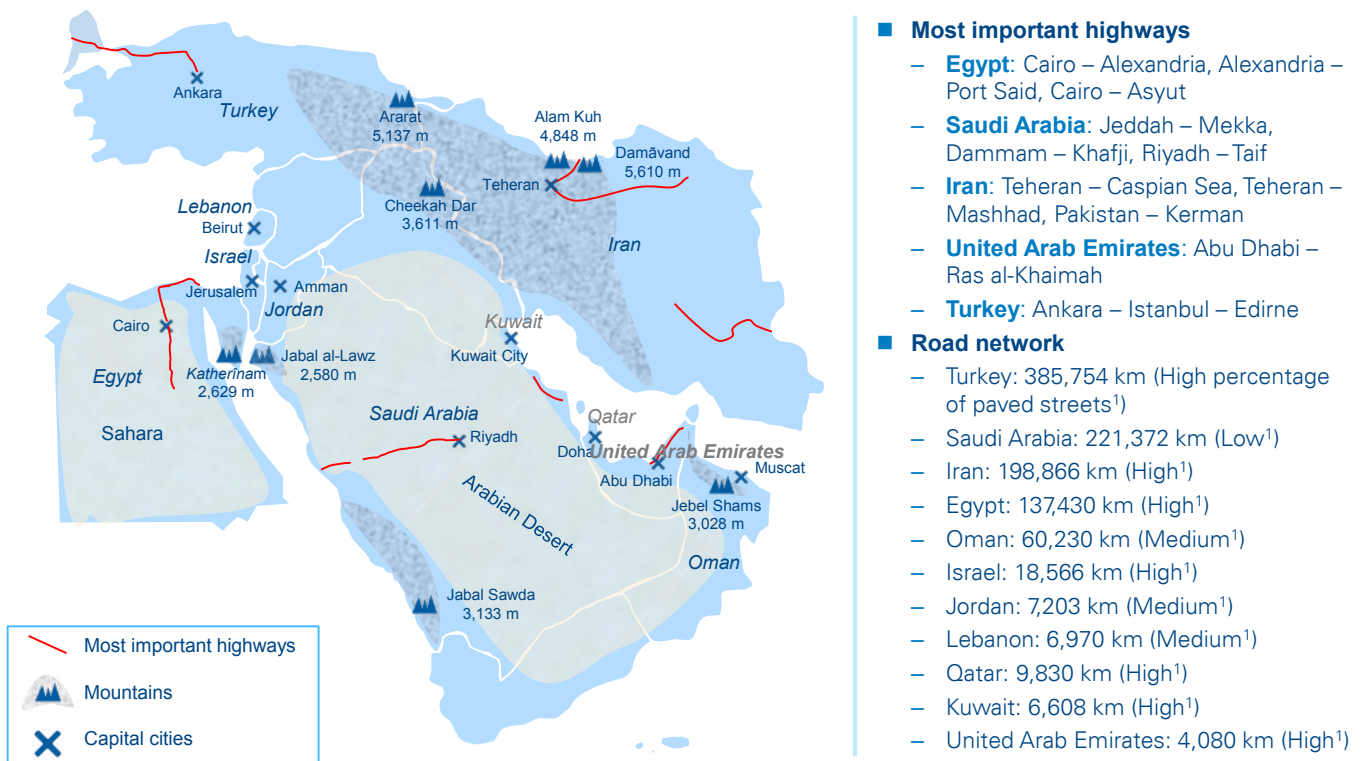
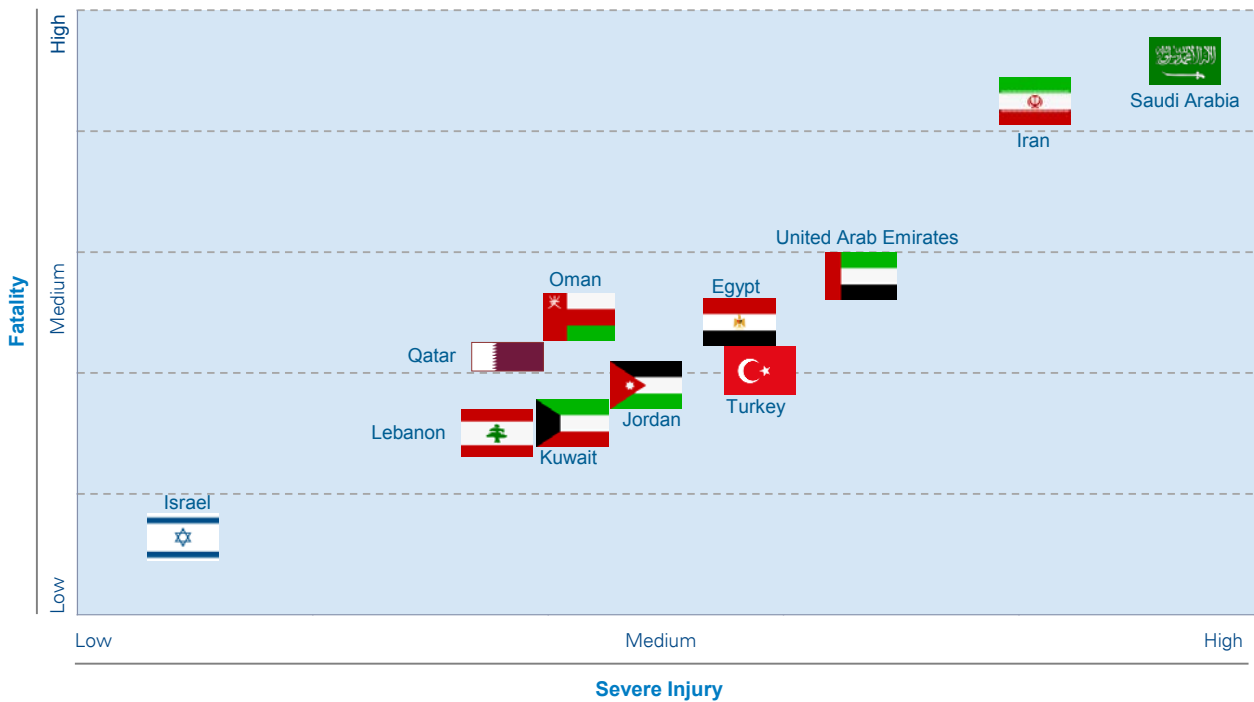




Figure 17: Road accident rates in relative terms above the global average level, for fatalities and severe injuries (2015)



Source: Arthur D. Little Analysis, Expert Interviews

### 3.3 Road safety

Traffic accident rates are high, and trucks are regularly involved in accidents. Several factors contribute to the high accident rate, especially poor driving behavior from road users. The above chart shows how high traffic deaths and severe accidents are in these Middle Eastern countries compared to the global average.

The analysis reflects that often poor driver qualification, in conjunction with fatigue, causes severe road accidents. This is a structural problem that shows the lack of both enforced regulation and safety focus across truck fleets. Of course, there are differences between markets, but the general road-safety level is not satisfactory. Here, the expert estimations of road deaths and severe injuries above the global average are plotted. All markets are above average, with particularly high numbers in Saudi Arabia and Iran.

High-end trucks are available with several safety features, such as stability control, driver protection and impact-absorbing devices. However, given the price sensitivity in the region and the fact that there is no legislative pressure or insurance incentive for operators, the take-rate of safety features is very low. Even for high-end trucks, many safety features are not even on offer in the Middle East. In the mid-level and budget segments, safety features are partially or not at all available.

A further factor that often contributes to injury levels is the fact that most trucks have elevated ground clearance. In particular,

traffic accidents with cars often result in severe injuries or fatalities because of this.

Without legislative pressure, even Western brands will not succeed in increasing the safety features in their trucks. We expect more countries to take actions to improve road safety, especially on the reduction of driving speed, an area in which early progress has already been made.

### 3.4 Truck driver qualification levels and implications

Qualified drivers who operate their trucks in reliable, safe and economic ways are critical for every transport company. This implies finding the right drivers and giving them training and, ideally, incentives.

Unlike in some other markets, driving a truck is not considered a profession; instead, truck drivers are considered a less-qualified labor-group commodity, and consequently they receive low wages and are poorly trained. Truck drivers are seen as a cost factor that fleets try to minimize, regardless of the longer-term effects on the trucks and operation. As fuel prices are low in most markets in the Middle East, the fuel consumption is not of equally high concern as for fleets in Europe or NAFTA.

In the Middle East, truck drivers are often immigrant workers with limited truck driving experience and no additional truck-driving qualifications. Most come from Pakistan or India as guest workers in the Middle East, particularly in markets with higher wealth levels such as the UAE and Saudi Arabia.

There are markets and applications in which truck drivers are well qualified and remain with fleets for long periods, such as Israel, Turkey and Jordan. Also, in the petroleum sector truck operators are investing into drivers for safety and productivity reasons, but these are exceptions. The situation of truck drivers is compounded by the fact that in many markets in the Middle East, there is no monitoring of driving hours; hence, often drivers are pushed to their limits. This impacts truck productivity and road safety. In some cases, driver hours are indirectly controlled via the stamping of their freight documents, but generally, enforcement levels tend to be weak in most markets.

What are the implications for manufacturers? For the more sophisticated truck manufacturers, this means truck cabin equipment is generally not of importance. Trucks need to be easy to operate so drivers do not require training. Trucks also need to be built robust, as they are driven harder compared to trucks in Europe or America.

It is unlikely that the situation with truck drivers will change notably in the near future. They will largely remain a low-skilled labor group that competes against itself on price. Fleets, however, will provide more sophisticated trucks for drivers to work with. Clearly, the better the truck is, the higher the productivity of the truck driver and, hence, the mileage that can be covered. This is also a foundation for the truck sophistication levels to increase.

With the high temperatures, it is all the more striking that sometimes even new trucks are not equipped with air-conditioning units. This is a significant drawback from a safety and productivity perspective. Most large fleets typically have trucks with air-conditioning units; in countries such as Israel and Turkey, new trucks are commonly equipped with air-conditioning units for safety reasons. However, within the truck population in the Middle East, almost half of trucks have no functioning air-conditioning units.

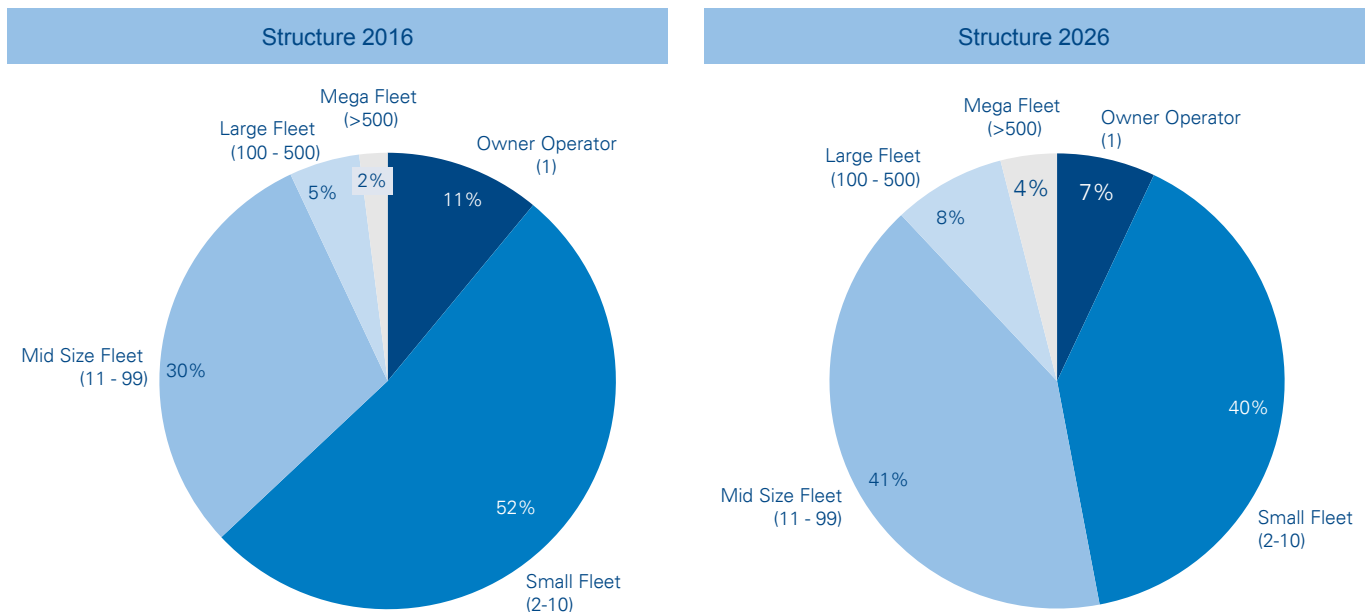
**3.5 Truck fleets**

Truck fleets in the Middle East vary substantially in the sizes of the trucks they operate. There are different truck fleets per country, with varying degrees of specialization regarding the cargo that they carry, as well as the geographic scope within which they are active. Some fleets are generalist cargo transport companies; others specialize in specific sectors or cargo types.

Truck companies also vary per country. In Israel, Turkey, Jordan and Lebanon, the economic structure is more diversified than in highly petroleum-dependent countries such as Saudi Arabia. This is also reflected in the truck types and customer needs.

The chart shows both the structure of truck operators in the Middle East for 2016 and the expectation for 2026. The underlying trend within the next 10 years is an ongoing consolidation process, which increases the number of larger fleets and reduces the smaller truck operator population.

**Figure 18: Truck operators in the Middle East have a heterogeneous structure**



Source: Arthur D. Little Analysis, Expert Interviews

The fleet structure in the Middle East has the following implications for truck manufacturers:

- Large and mega-fleets require account managers to be optimally served with both products and services. This customer group is important, as it provides both market share and service revenue for manufacturers. Typically, these fleets only consider high-end trucks and buy services as well. However, these fleets are demanding regarding both truck features and service quality.
- Mid-size fleets are important volume generators for manufacturers, but can be served via sales and service points. The order size for trucks is much more fragmented compared with large and mega-fleets. The smaller order size strengthens the negotiation position of truck manufacturers on the truck price, but also requires more sales staff for lower sales volume. In this segment, truck sophistication is much more heterogeneous. The majority are mid-level trucks (55%), followed by high-end (30%) and budget trucks (15%). This segment is important for all truck sophistication levels; hence, competition is higher.
- Small fleets and owner-operators are the most diverse regarding truck types and degrees of cargo specialization. Typically, small fleets with high specialization degrees are high-end and mid-level truck customers. The generalist haulage companies are budget-truck oriented. Competition in many markets is high. A success factor for manufacturers

is to have clear go-to-market strategies in this segment, and to be focused on specific customer types within small fleets and owner-operators.

The fleet structure per market varies as well, reflecting the economic footprint of the country. In several markets in the Middle East, there are no mega-fleets due to the market size. Conversely, countries such as Saudi Arabia, Turkey and Jordan have relatively higher shares of large and mega-fleets. This implies that dedicated go-to-market strategies are necessary for manufacturers to be successful. The critical aspect of manufacturer success is an in-depth market analysis that breaks down the local customer structure and their requirements for trucks and related services. Without such an analysis, sustainable market success cannot be safeguarded. Therefore, manufacturers need to define key customer groups and approach these with dedicated strategies. This involves both product and service solutions, as well as a target group-specific sales force. To be effective in the market, manufacturers need to identify target groups that match their product features best.

The profitability levels of truck fleets are critical for manufacturers to understand. These vary depending on the market, fleet size and typical cargo type that is transported. Directionally, the profit levels are low in the highly competitive segment, such as general distribution and retail. Specialized fleets that offer more services can get better pricing. The large specialized transport companies that focus on the petroleum industry realize above-average profitability.

# 4. Region, market and segments

Arthur D. Little created a framework to map the market sizes and development in Middle Eastern countries. The demand outlook is favorable, driven by good overall economic performances and additional catalysts such as the opening of Iran and economic diversification programs. Consequently, the demand for trucks will increase notably in the next decade, which will create growth opportunities for manufacturers. Heavy truck sales will increase by 48% to 153,000, and mediums by 46% to 64,000, by 2026. This growth potential is significant and requires manufacturers to put more emphasis on the region to leverage these opportunities systematically.

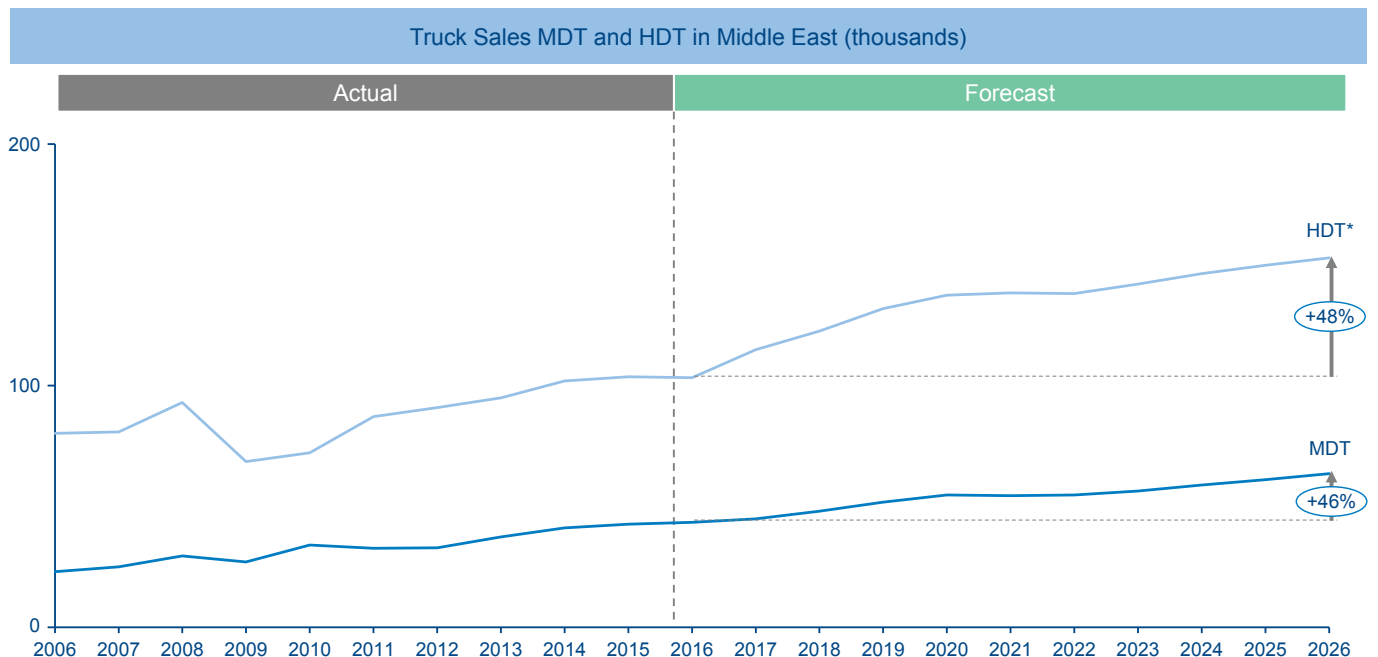
The Middle East region as a whole has many more truck sales than are currently documented or accounted for, due to the fact that it is challenging to obtain industry and market information. Arthur D. Little's analysis shows that the total market was good for more than 150,000 medium and heavy trucks in 2015. For the next decade, Arthur D. Little expects substantial growth, as the market will peak at about 220,000 units in 2026. Key driving

factors are replacement demand, economic advancement and, in particular, diversification of the economic footprints of many countries. A further contributor is higher private consumption levels, which trigger more truck activity. Furthermore, growing affluence has created a market for generally more diverse logistics. These economic factors are driving the sales levels in the region up significantly. Based on 2016 sales, total additional truck demand amounts to almost 70,000 units, out of which 50,000 (48%) are heavy trucks and 20,000 (46%) are medium trucks.

The short-term sales growth is mainly driven by the economic opening of Iran. This has direct and, more importantly, indirect effects on truck demand, due to the economic progress. The low oil price has negative short-term implications on truck needs, especially with the OPEC member countries of the Middle East.

In the medium term, truck sales are driven by economic growth and diversification of countries that are highly dependent on oil. This will be a foundation for truck-fleet creation.

Figure 19: Sales development of trucks in the Middle East Region shows that the market growth is primarily in HDT, with MDT accounting for less growth



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

In the longer term, truck demand will benefit from this growth and diversification. Nonetheless, the region is still volatile, and individual markets could be strongly affected by this. For investments, the respective country stability is a critical factor; hence, governments need to ensure that manufacturers are comfortable with making financial commitments.

Within the Middle East, market sizes vary substantially. The below chart illustrates the importance of specific markets, as they account for the bulk of the sales volume. These markets are: Iran, Turkey and Saudi Arabia, to which 85% of all medium- and heavy truck sales in 2015 have been attributed. Over the coming decade, the pecking order of the markets will not change substantially. By 2026, we expect even more volume to be allocated to the top three markets as their share increases from over 80% to almost 85% – while sales grow on an absolute basis.

#### 4.1 Sophistication split in the Middle East

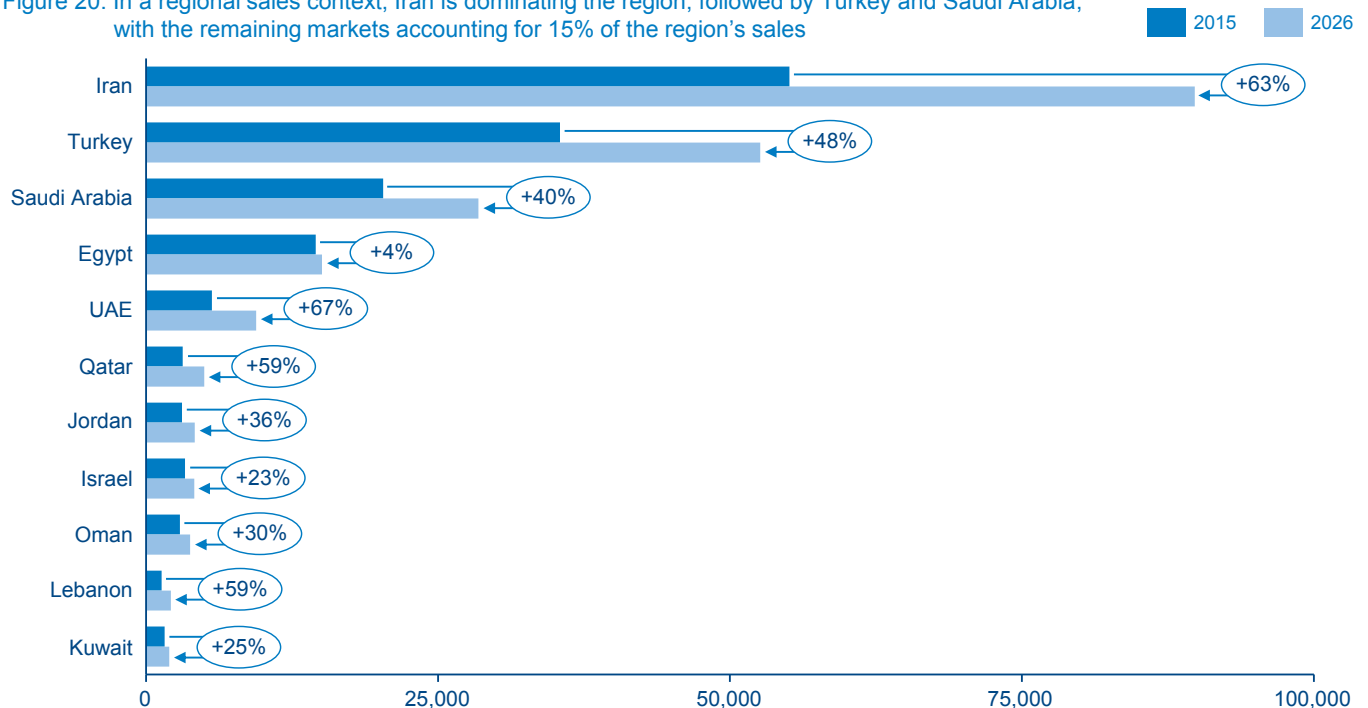
In contrast to what many industry stakeholders expect, the Middle East has over-proportional growth potential for high-end trucks. Mid-level trucks are also expected to have this development, whereas budget trucks are set to decline in all markets. This shift is due to the fact that truck fleets require more productive trucks and are willing to invest accordingly. Consequently, manufacturers need to enter or expand their product ranges in the Middle East with quality products to participate in the expanding segments.

The truck sophistication mix is transforming, reflecting the fleet changes and economic developments in the countries. In this section, the analysis is on a regional level, being a composition of the individual markets in the Middle East. There are significant variations between countries when it comes to sophistication splits.

Regionally, truck sophistication will change substantially. In 2010, the budget segment had a strong market position, close to the mid-level segment, with 35% of sales versus 40%, respectively. In the context of the market developments in the Middle East, demand for more productive and reliable trucks will increase structurally, creating requirements for mid-level and high-end trucks, while budget trucks decline in importance and only play a role in emerging markets. By 2025, we expect that they will only account for 5% of sales. Mid-level trucks will account for 41%, while 54% will be high-end trucks. We expect a substantial change in the Middle East, offering growth potential to both Asian and Western manufacturers.

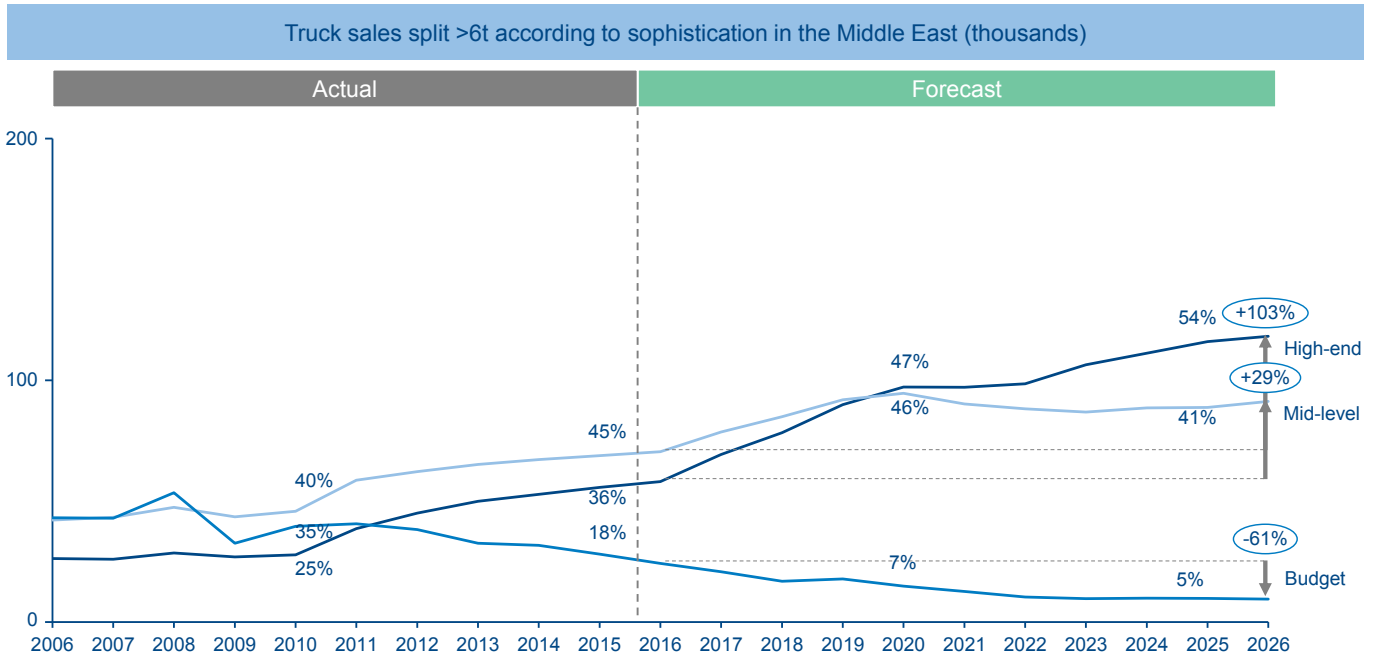
Our analysis of the required trucks shows that it is inevitable for transport operators to buy higher-quality trucks, as reliable transport services carried out by efficient trucks are the best way for transport operators to differentiate. This development is reflected in the sophistication split in the Middle East and creates segment specific opportunities. Directionally, high-end trucks are growing strongly, followed by mid-level trucks, and budget trucks will decline over the next decade.

Figure 20: In a regional sales context, Iran is dominating the region, followed by Turkey and Saudi Arabia, with the remaining markets accounting for 15% of the region's sales



Source: IHS Truck Sales Data Saudi Arabia, Arthur D. Little Middle East Model; Arthur D. Little Analysis, Expert Interviews

Figure 21: Sales development of trucks in the Middle East region split by the sophistication segments shows a clear growth for high-end trucks followed by mid-level trucks, budget marginalizes



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

There are two reasons budget truck sales are declining in the Middle East. Firstly, many manufacturers that currently sell budget trucks are launching new trucks in the mid-level segment. Secondly, budget trucks are not an effective solution for many truck operations, and the price difference is small compared with mid-level trucks – the additional investment is worthwhile. Budget trucks are not cost-effective for haulage operation in the region. The main reasons are the low reliability, high operating cost and uncompetitive number of years in operation before they need to be replaced. It is only in niche applications such as small construction activities and refuse collection that budget trucks are still a sound economic proposition.

In contrast to the decline of budget trucks, mid-level trucks are expected to grow in the next decade, from 2016 – another 29% by 2026. This development is both demand and supply driven. On the supply side, manufacturers that once provided budget trucks have developed and now provide mid-level trucks. On the demand side, fleets are gaining in importance, and therefore most require efficient and reliable trucks, while not all can or want to invest in high-end trucks.

The biggest sales growth in the Middle East, in both relative and absolute terms, will take place in the high-end segment. The main driver behind this development is the increasing fleet formation process and the rising standards that truck fleets require. Arthur D. Little expects that by 2020, high-end trucks will outsell not only budget trucks, but also mid-level trucks. Fleets that operate in highly time-critical areas or transport-sensitive

cargo need reliable and highly productive trucks. These fleets have the available funds to invest and carry out preventative maintenance on their trucks.

On a more granular level, the sophistication split between medium and heavy trucks shows the respective developments clearly.

**Medium truck sophistication**

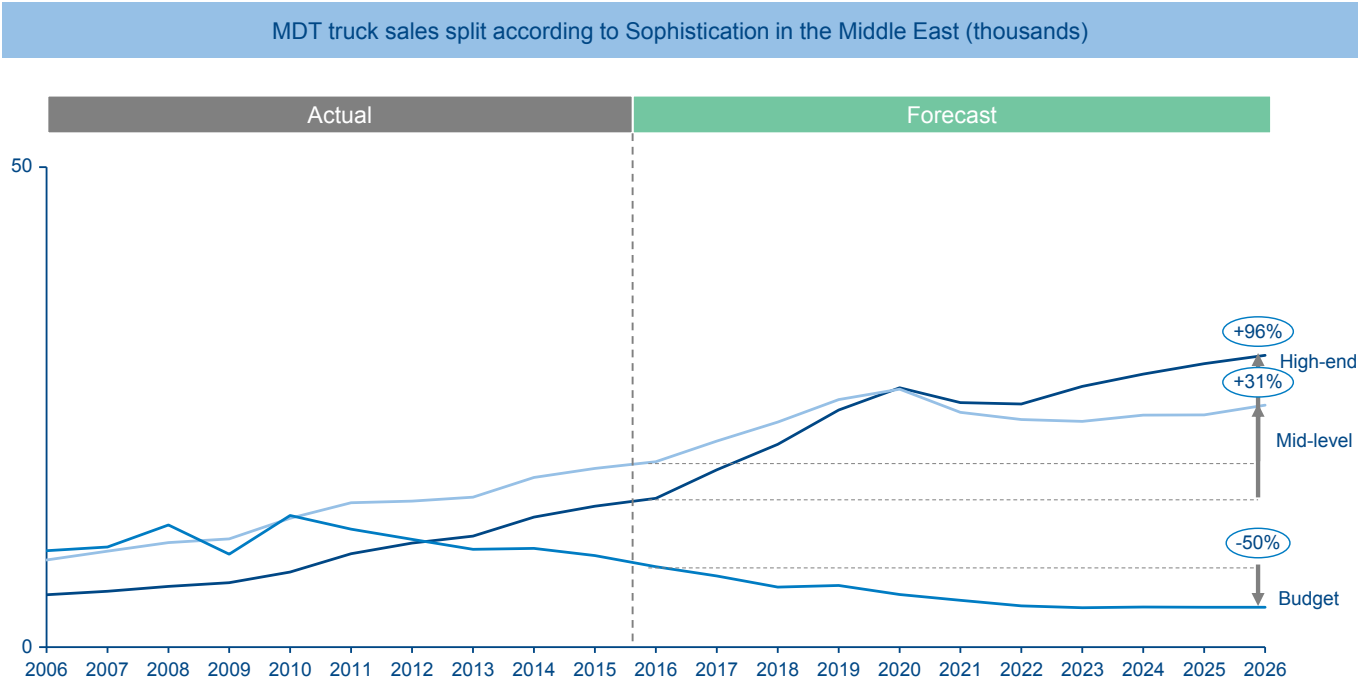
In the medium segment, high-end trucks show the strongest growth potential, almost doubling the segment’s sales volume from 2015 by 2026. Hence, the sales potential is significant, offering opportunities for manufacturers that are currently not present. Mid-level trucks will also increase, growing by one third over the next 10 years. For mid-level trucks, the main growth will take place until 2020; afterwards, this segment will directionally stagnate due to ongoing shifts into the high-end segment. The budget segment will continue its decline, halving its sales in the next decade. There are few niche applications in the medium segment for budget trucks, in which regular replacement is necessary due to high operational stress, such as refuse collection or construction trucks. This niche is not a growing or lucrative segment for manufacturers, and therefore served by price-competitive manufacturers only.

**Heavy truck sophistication**

For the heavy truck market, trends in the sophistication segments are similar to medium trucks, but the respective segment trends amplify themselves in a more extreme



Figure 22: MDT sales in the Middle East region show a clear growth trend in the market and are driven by higher quality trucks

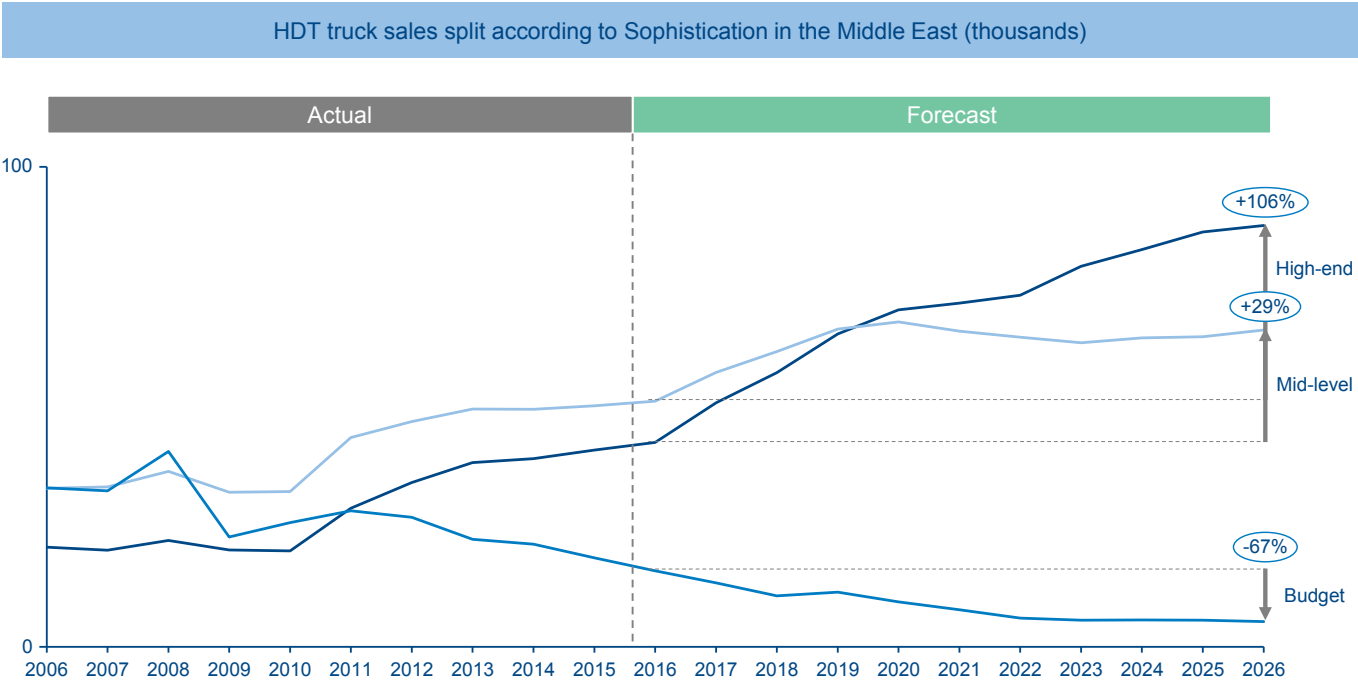


Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

way. High-end trucks will grow by 106% from 2016 to 2026, making them the mainstream truck segment in the Middle East. Conversely, the mid-level segment will increase more moderately, by 29%. Here, there will also be stagnation after 2020 due to the ongoing shift to quality trucks. For the budget

segment, the decline will be substantial, at 67%. This is due to the fact that almost all transport operators cannot compete in the Middle East with budget trucks. The requirements for reliability and operating costs leave only niche applications for budget trucks.

Figure 23: HDT sales shows a clear growth trend driven by trucks from in the high-end and mid-level segment



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

For manufacturers, it is critical to focus on the growth segments and related services. For Western brands this implies focus on adaptation of trucks and optimizing sales and service channels. For manufacturers from Asia, most notably China, this implies ongoing product investment to be able to offer relevant products and services. We also expect that within the mid-level segment, services will be more important as differentiation criteria.

## 4.2 Manufacturer origin

While there is little chance for budget trucks to be of any relevance in the next decade due to their operational costs and limited life spans, this does not mean the manufacturers of budget trucks will all leave the region again. In contrast, the Chinese manufacturers that dominated the budget segment in particular have developed trucks in the mid-level segment. Hence, the overall brand structure in the Middle East will stay largely the same, whereas the sophistication segments will converge over time and directly shift to high-quality trucks. Manufacturers need to prepare for more competitors with this level of truck sophistication. In the ongoing tension field between price and quality, manufacturers need to ensure they sustain sound margin levels.

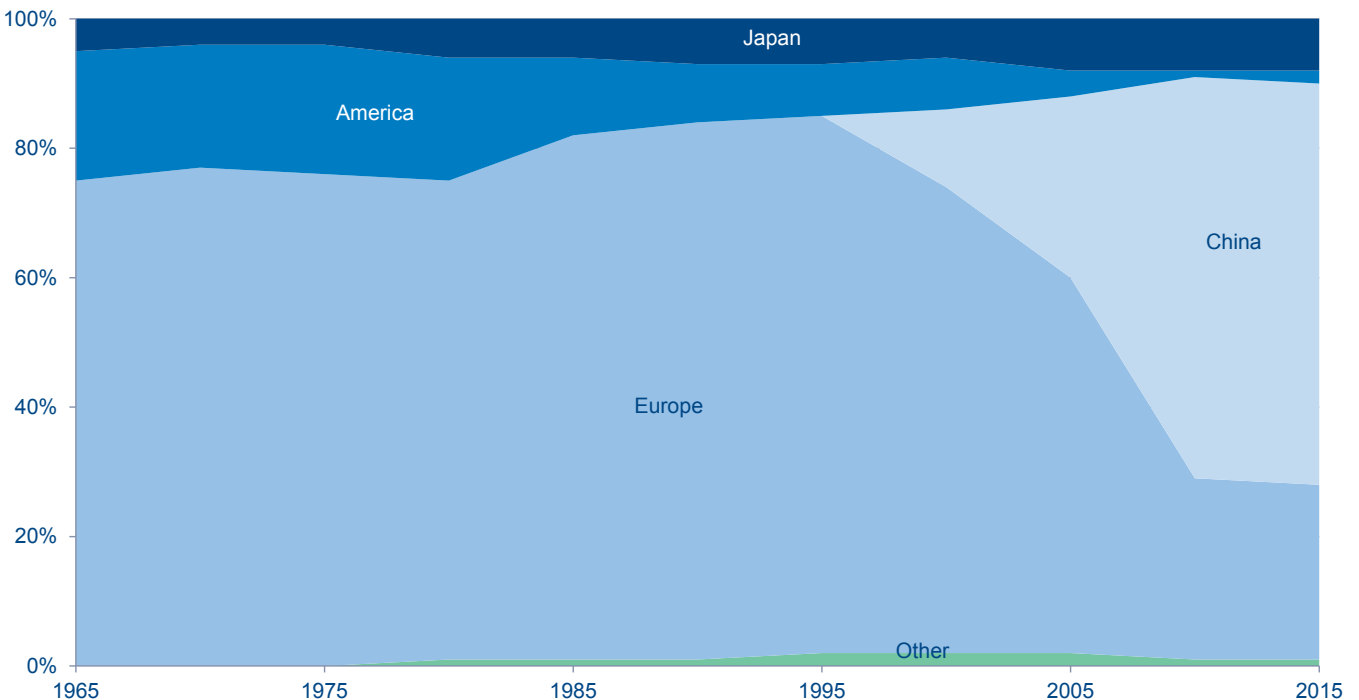
The Middle East is a diverse region, especially in terms of markets and operator structure. This has shaped the segment

requirements for trucks considerably. Arthur D. Little's analysis shows that it is a heterogeneous mix of truck sophistication segments that has developed over the past 10 to 15 years. Interestingly, looking back further, a different structure emerges. From the 1970s to the 2000s, the trucks in the heavy segment were almost all from European and American manufacturers. In the medium segment, some European and mostly Japanese truck brands dominated. Consequently, the sophistication footprint was homogenous. With the market entry of trucks from other manufacturers, most notably the Asian emerging-market brands, the picture has changed.

The Middle East was dominated by European and American manufacturers for a long time. As the region became more politically unstable, the market share of American trucks started to erode in the mid-1990s. With a lagged effect, the market share of European manufacturers declined as well. At the same time, Chinese manufacturers started to aggressively take shares in the region. Japanese manufacturers, which are mostly active in the medium segment, have managed to defend their market share against Chinese brands. Japanese brands sold more heavy trucks as a result, and therefore sustained their position in the region.

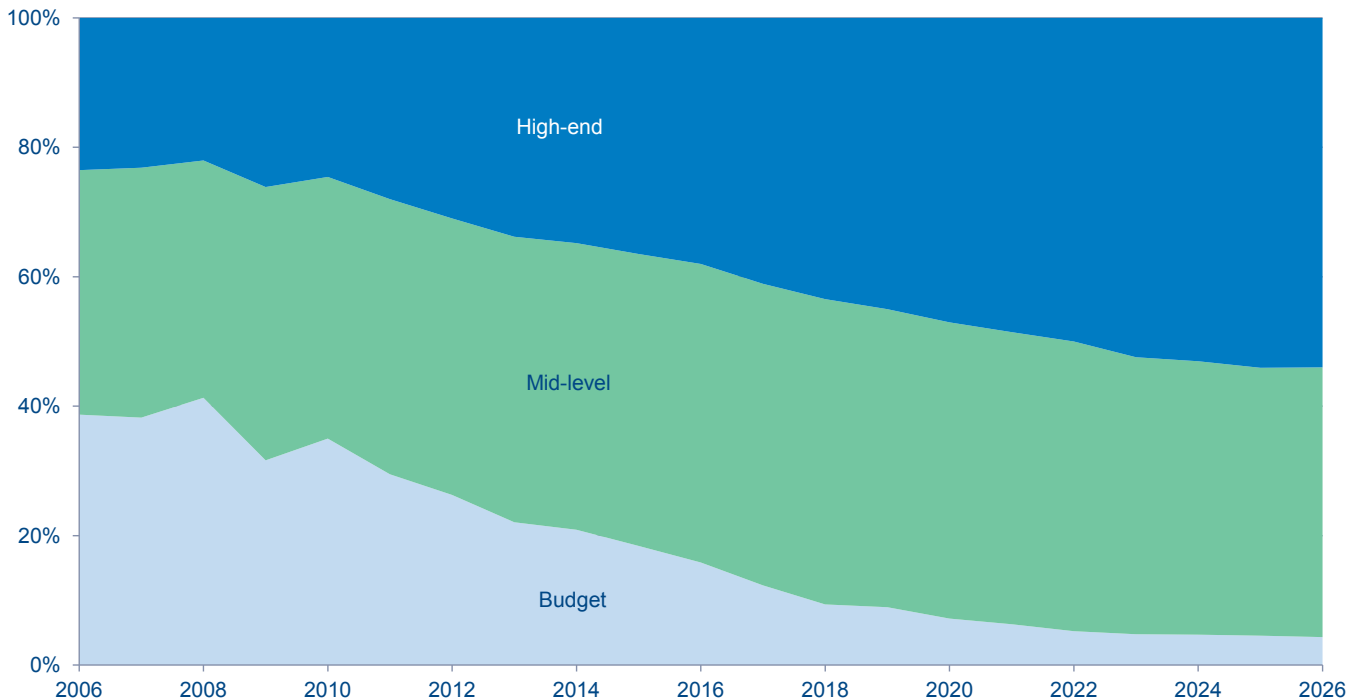
The analysis of brand origin cannot be detached from truck sophistication, which started to become evident on a wider scale with the entry of Chinese manufacturers. Consequently, budget trucks obtained a large market share. In many markets, the fast withdrawal of Western brands and the entry of Chinese

Figure 24: The brand origin split in the Middle East has evolved fast and shows the political implications and impact of manufacturers' movements



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

Figure 25: The truck sophistication levels will increase in the Middle East region, where mid-level and high-end trucks are set to dominate the market in the coming decade



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

brands inherently pushed budget trucks into the Middle East, as it was the only truck segment that Chinese brands offered at the time. Trucks on that sophistication level were new to the region. The initial reaction was positive due to the low purchase price, but the drawbacks in the operations were evident as well – in particular, low reliability and spare-part constraints.

This shift is now, and in the decade to come, the former trend will be reversed. Arthur D. Little expects that the quality of trucks in the Middle East will increase substantially, aligning with traditional truck sophistication levels again.

The significant increase of mid-level and high-end trucks is driven by two underlying developments. Firstly, fleets require more sophisticated trucks, with higher productivity and reliability. Secondly, truck manufacturers in China and India have launched higher-quality trucks themselves, hence they are inherently contributing to the transitioning effect of their customers. The budget segment is therefore going to be marginal by the middle of the next decade.

In the above chart, the impact on the economic cycle is clearly visible, too. During the financial crisis in 2009 buying behavior changed, and in 2010, there was a cascade in all segments that gave preference to less sophisticated trucks. This, however, had only a temporary distorting effect.

### 4.3 Operator specific truck sophistication

In the Middle East, budget truck sales increased strongly and gained substantial market share. While significant political and legislative reasons behind this (partially) forced a shift in markets from Western to Asian brands, there were also economic reasons behind the transition. Budget trucks are the most cost-efficient trucks to purchase. In markets that suffered economically, this is still an important factor for operators with limited capital to buy trucks.

However, the analysis we conducted shows clearly that budget trucks are, from a holistic perspective, not cheap to operate, but actually the costliest. Conversely, high-end trucks are, despite their high purchase price, overall the most cost-efficient for the operator if the truck is regularly and adequately serviced. This is also highlighted in the below chart, where the three truck sophistication levels are ranked.

The framework ranks the three truck sophistication levels according to various parameters from an operator perspective. A key take-away is that high-end trucks are the most competitive overall product, only constrained by the high purchase price and service needs. Hence, operators that have poor utilization will struggle to earn money with high-end trucks. As an intermediate product solution, mid-level trucks come into the picture. This

Figure 26: A holistic view on the three truck sophistication levels shows that there is a strong rationale to operate high-end trucks, despite their high purchase price they are most efficient overall

Ranking criteria	Budget truck	Mid-level truck	High-end truck
Purchase price	●	◐	◑
Fuel efficiency	○	◐	●
Service costs	◐	◐	◐
Service infrastructure	◐	◐	◐
Spare part availability	○	◐	◐
Resale value	○	◐	◐
Customization	○	◐	●
Productive years in fleet operation	○	◐	●
<b>Total price</b>	○	◐	◐

Source: Arthur D. Little Analysis, Expert Interviews

concept is aimed at operators that are price sensitive, but still need reliable trucks with total-cost-of-ownership focus. Budget trucks are attractive from a purchasing-price perspective, but have high operational costs. Therefore, fleets also struggle to make money with these truck types. For niche applications in construction, budget trucks can make sense, but not on a larger scale.

4.4 Truck pricing

Pricing will remain a challenge despite the general increase in truck sophistication levels. This is due to the highly competitive dynamics and the range of truck manufacturers in the region. The variation of truck pricing is high; hence, this section shows directional pricing for the majority of trucks, excluding specific deviations for countries. High-end pricing and, to a lesser degree, mid-level truck pricing, spread more due to the higher customization degree of trucks.

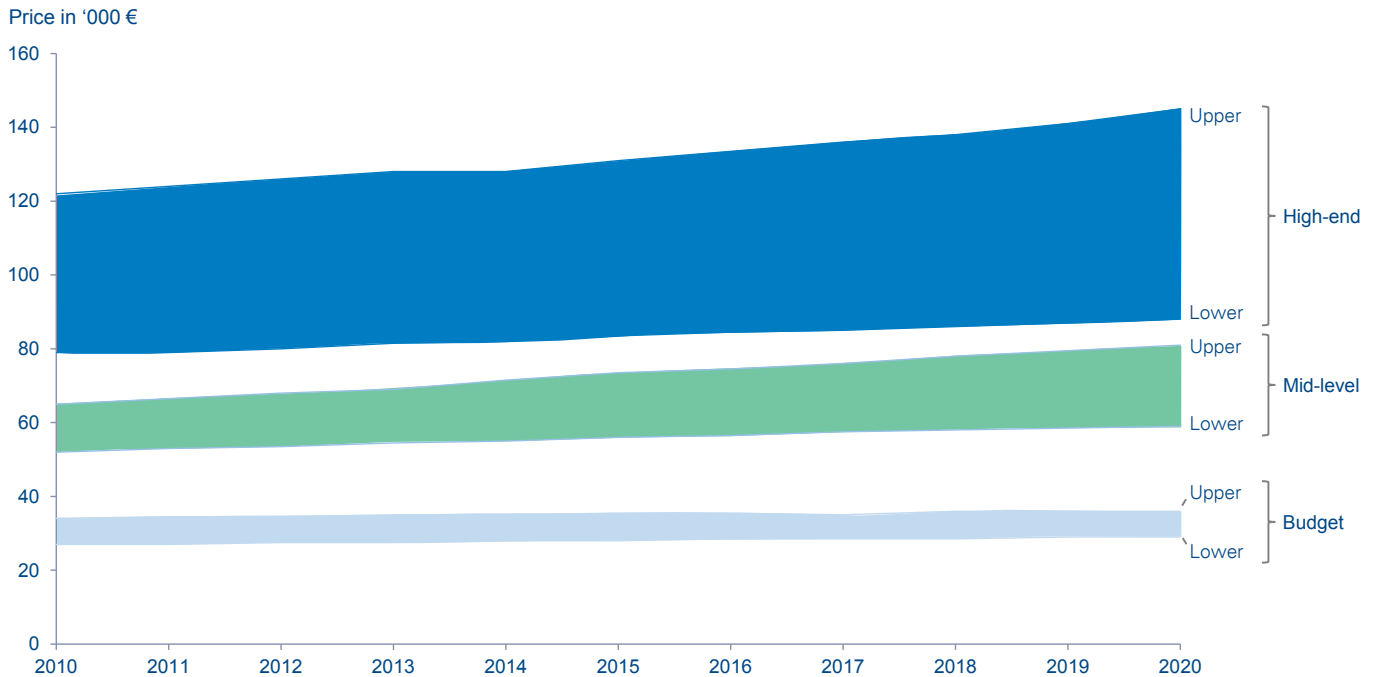
Truck prices are strategically important for manufacturers and other industry stakeholders, but difficult to obtain reliable information on. In the truck industry, the actual price is also subject to a range of factors: Market state, truck type and configuration, competitors and order size, as well as potential trade-ins. In the pricing analysis, we focus on the heavy truck segment only, covering 2010 to 2020. Based on interviews, we

determined average prices in every sophistication segment, as well as the upper and lower pricing boundary, as shown in the below chart. With that approach, we cover the majority of all heavy trucks sold in each sophistication segment.

Our analysis of heavy truck prices in the Middle East shows diverging trends, depending on the truck sophistication level. The main outcome of the analysis is that there are substantial opportunities for trucks of higher sophistication levels to realize greater transaction prices. High-end truck prices will increase even more than mid-level truck pricing over the coming years. In contrast, the pricing for budget trucks will remain difficult and largely stagnant.

Especially for high-end trucks, the order size explains why, in the below chart, the “upper” price band is significantly above the “lower” price band. In the Middle East, the degree of customization and off-road suitability of trucks is higher than in most other regions – such configurations increase prices. The lower price band includes trucks that are ordered in large quantities at fleets. For manufacturers in this segment, this has several implications. Firstly, the revenue opportunities are still significant and, in conjunction with the increasing market share of top-end trucks, the business prospects are also considerable. Secondly, given the good pricing and the required customization degree, the development or adaptation of purpose-built trucks is a winning strategy.

Figure 27: The average price and corresponding price range varies significantly per sophistication segment in the Middle East – high-end truck show most potential for price increase



Source: Arthur D. Little Analysis and Estimations, Expert Interviews

For mid-level trucks, the average pricing is lower, as well as the price range on the upper and lower boundaries. This is generally due to reduced technical maturity compared with high-end trucks, and therefore means less productivity for the operator. Trucks in the mid-level segment have fewer configuration options as well, making them less specialized for transport operations. This is another reason for the lower spread in the price range compared with high-end trucks. Furthermore, the price increase until 2020 will be lower compared with that of high-end trucks, due to lower differentiation and a reduced customization possibility. This trend fortifies the attractiveness of the top-end segment; manufacturers in the mid-level segment are set to benefit from the structural developments. In contrast, mid-level manufacturers should consider offering as much variation and customization, to increase the value proposition of their products and position themselves at the higher end of the price segment.

The budget segment features the least possibilities for adjustment and customization of trucks. Our analysis found that budget trucks are off-the-shelf and compete on purchasing price. Customization is limited to axle configuration and selected cabin types. This is also why the price increase for budget trucks is only mildly increasing. The fact that in sales-volume terms the budget segment will be marginalized also contributes to this development. Manufacturers of budget trucks have no technical or commercial influence for operators to pay more

for these trucks. The segment is therefore only attractive for manufacturers that have no technical differentiation features. For other manufacturers, the segment is not attractive and commercially viable in the longer term.

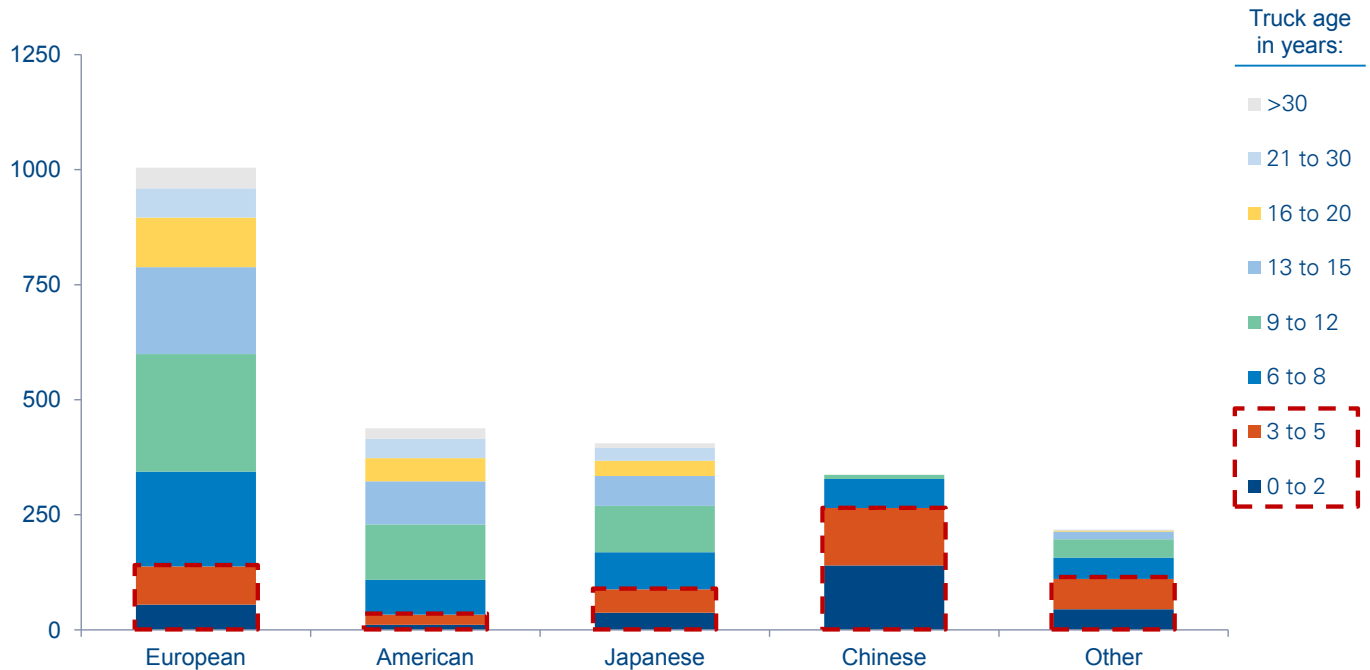
#### 4.5 Truck population in the Middle East

The origins of trucks and their respective age composition highlights that Chinese brands have entered more recently into the Middle East. In contrast, Western brands entered much earlier, but faced setbacks. However, the legacy footprint of Western brands becomes clear in our analysis and shows the strong potential these brands have. Also, the general age level of trucks is high, showing the looming replacement need, especially with larger professional fleets.

Truck population has a revealing structure in the Middle East, from both an age and a brand origin perspective. In the analysis of the population composition, there is a substantial difference per truck brand origin, but also in the overall age structure of the trucks.

A high-level analysis shows that the age of trucks is generally old, compared with other regions of the world. Trucks from the 1970s and 1980s are still in operation, especially in the economically weaker countries. Together with Africa and the

Figure 28: Per brand origin, the truck population and typical age structure of trucks varies significantly, reflecting the market and sales dynamics (for medium and heavy trucks)



Source: Arthur D. Little Analysis, Arthur D. Little Middle East Model; Expert Interviews

Caribbean, the Middle East has among the highest populations of trucks that are 15 years and older.

European trucks dominate the Middle East truck population at almost 45%, followed at quite a distance by American (20%) and Japanese trucks (17%). More than 80% come from the Triad region. Between these three regions, the respective age composition is similar. This is not the case for Chinese and Indian trucks. Together these account for 15% of the truck population, which is significant given their relatively recent market entry. Consequently, their age structure is different as they are, with few exceptions, over 10 years old. Manufacturers from other markets, such as Korea and Russia, are in the "others" section. Here, the older trucks are of Russian origin and mostly heavy trucks. In contrast, the newer vehicles come from Korea and are medium-duty trucks.

Typically, the older trucks are with small fleets or independent drivers. They are used for regional transportation or general-cargo types. Often, these are truck tractors or construction trucks with elevated ground clearance that can drive off-road or in poor road conditions. Around 60% of these trucks were originally imported from Europe and North America; the other 40% have operated in the region since their start of their service.

In the table above, the split of truck origin by population age reveals significant differences in the Middle East. Recent European, Japanese and American truck sales have been

significantly weaker compared to Chinese brands and even Indian trucks – the red box groups the trucks into the age bracket between zero and five years. The more recent entry of Chinese trucks into the Middle East highlights this. The analysis also shows that Chinese trucks have limited operating life, as Chinese trucks that are more than twelve years old are not part of the truck population, due to the more recent market entry of these manufacturers.

The analysis of regional requirements shows that Western brands have potential to catch up, as the current truck age structure reveals. Hence, the current truck population situation amplifies two points:

- The structural change in brand origin composition as a result of sudden market entries from Chinese brands.
- Truck quality per brand origin varies and reflects the sophistication structure of the manufacturers. Chinese brands – mostly budget trucks – have shorter life spans compared with high-end Western trucks.

A further implication of the truck population composition of Western brands is the service revenue potential that the current truck population represents. As the majority (51%) of trucks from European brands are in the age bracket of between 5 and 12 years, the service requirements are high, while operators still benefit in productivity terms from regular and professional service. Manufacturers need to develop affordable, tailor-made service solutions for these customers.



The truck populations in Iraq and Syria are not factored into this analysis. In Iraq, the population of trucks is around 200,000 units, and in Syria, 90,000 units. The ages of these trucks are old and the replacement demand significant – around 80% should have been replaced already. Once both countries have stabilized, we envisage a further substantial demand boom for trucks due to investment programs for the economy as well as the high truck modernization need.

#### 4.6 Implications and actions for manufacturers

The truck market in the Middle East is growing in both size and sophistication level. The two most significant catalysts that increase the attractiveness of the Middle East are the general economic diversification in most countries and the lifting of sanctions against Iran. This is an outstanding foundation for a market expansion of Western brands. As Western brands dominated the Middle East for decades, they have a strong starting position in building on their legacy. These manufacturers need to act fast in order to avoid losing too much ground to lower-cost Chinese and Indian manufacturers. Especially now, as manufacturers from China are launching more sophisticated trucks and improving their service offerings, Western brands need to make stronger inroads into the Middle East to avoid missing substantial growth opportunities.

The truck brands from China are developing strongly and have potential with mid-level trucks and service products. The latter point is especially critical for Chinese brands, and they need to be able to deliver trucks on a sufficient quality and productivity level to serve fleets and provide the required services for these trucks. Then these manufacturers will continue to have a strong position in the market directly – however, in the lower segments rather than the higher ones.

For Western brands, this structural co-existence with manufacturers from China and India implies that truck pricing will remain under pressure. Conversely, for Chinese and Indian truck manufacturers, quality and after-sales will remain a focus point. Both manufacturing clusters will continue to challenge each other respectively. The primary winners of this dynamic are the truck fleets, having access to technologically leading products at competitive prices with good after-sales and support.

What are the concrete strategic implications for truck industry stakeholders, and suitable actions for manufacturers to improve their positions in the region or specific markets? These are diverse and largely depend on the position of the manufacturer and the market it is present in. In particular, it depends on the segment composition of the company's product portfolio – i.e. is the manufacturer only in a single segment, or are several sophistication segments present? Detailed, manufacturer specific actions are always contingent on the respective

company and need to be analyzed and discussed on a case-by-case basis.

There are several actions that high-end manufacturers could take to enhance their positions in the region.

For high-end manufacturers in the market:

- Continuously invest in sales and after-sales improvement, to ensure optimal truck performance and, consequently, sales growth
- Identify key customers and transport applications and design dedicated product and service solutions

For a new market entry of a high-end manufacturer:

- Fine tune trucks to operating conditions and key customers' usage patterns
- Optimize a local sourcing strategy – select between CBU or SKD/CKD
- Lean market entry strategies – together with a local partner
- Offer competitive service products, financing and after-sales, as well as mobility and connectivity products

Mid-level manufacturers also have several levers to break into the Middle East market or strengthen their positions:

- Leverage the advantageous position they have regarding truck price and operating costs – which adds to the business case for operators
- Ongoing product refinement is necessary to remain competitive
- Expand and improve service network and quality
- Proactively address existing budget-truck buyers with the TCO argument

Budget-truck manufacturers need to:

- Obtain technologies and change sourcing of key components to diversify into mid-level trucks
- Invest more strongly in sales and after-sales channels
- Consider M&A strategies to build the required capabilities to offer mid-level trucks

Budget trucks will continue to be a difficult segment, as the market is fundamentally breaking away in the region.

Manufacturers that are dependent on the budget segment are especially at risk and need to act. Manufacturers that cover the full range of truck segments, from high-end over mid-level to budget, can shift technology and hence always have a suitable truck for every market. For these manufacturers, technology and product management are important. Manufacturers that are only present in the budget segment do not have that option.

# 5. Country section – Iran, Saudi Arabia and Turkey

The Middle East is diverse from a market perspective. The major markets are Iran, Saudi Arabia and Turkey, which account together for just over 80% of the region's sales. With the opening of Iran, significant demand for quality trucks begins, which manufacturers can best leverage with the local manufacturing entities, Iran Khodro Diesel and Saipa Diesel. Saudi Arabia's needs will increase by one-third over the next decade; key drivers are reduction of petroleum-industry dependence and general economic diversification. For Turkey, the industry standard is already among the highest of all markets in the Middle East, and demand will grow due to increasing fleet standards and requirements. Turkey's truck production base is also among the largest in the region, but domestic Turkish truck

manufacturers are not in business anymore. Also, the roles of trading houses and local industrial conglomerates are important and can be leveraged to facilitate market entry.

Not all markets are currently stable – most notably Iraq and Syria. These two countries are not included in the study. However, with the expected stabilization and consequent opening of these markets, there are further significant benefits to the overall region in sales and sophistication growth potential.

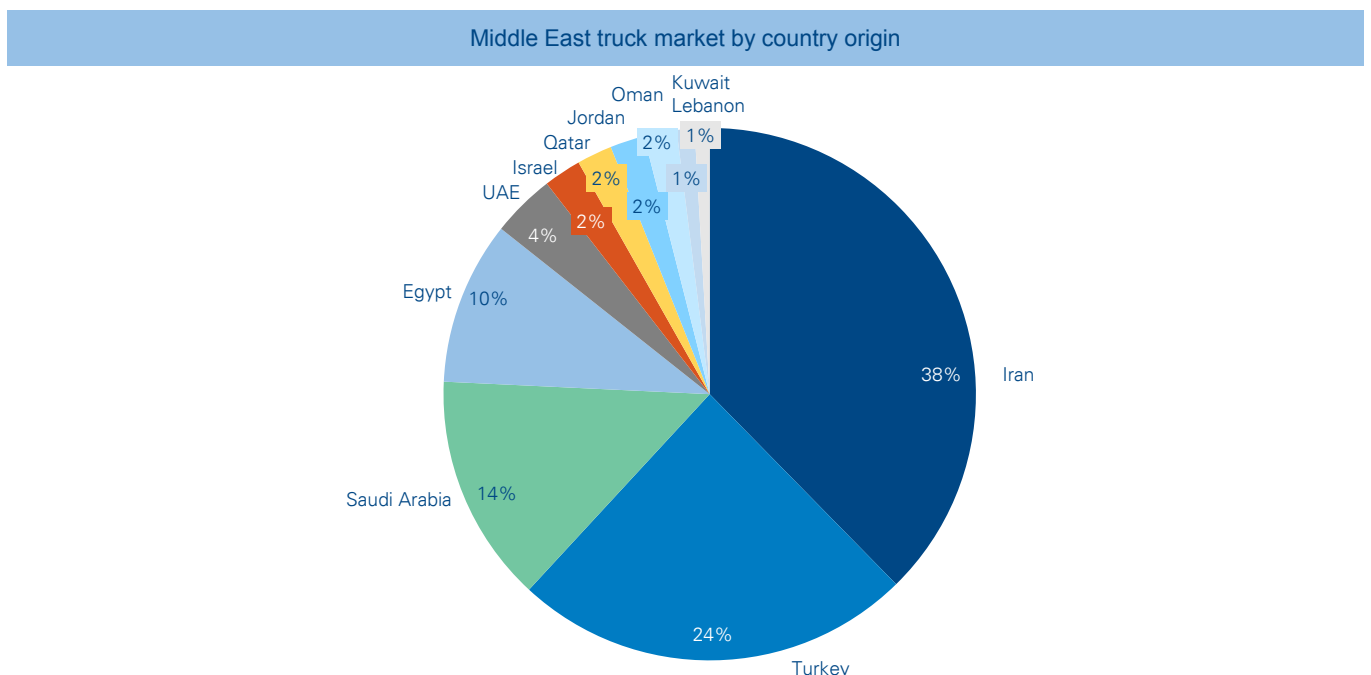
The region's importance as a production location will increase. Iran, Saudi Arabia and Turkey have or are in the process of setting up local production infrastructure.

For every market in the Middle East, the market size and sophistication split vary and the growth potential and brand landscape are vastly different. Several markets have substantial possibility for manufacturers, especially these three largest markets in the Middle East. They are not only critical in sales-volume terms, but also sophistication, as the high-end truck share will strongly increase within the next decade. It is

important for every manufacturer to participate in the growth of these markets and offer suitable products.

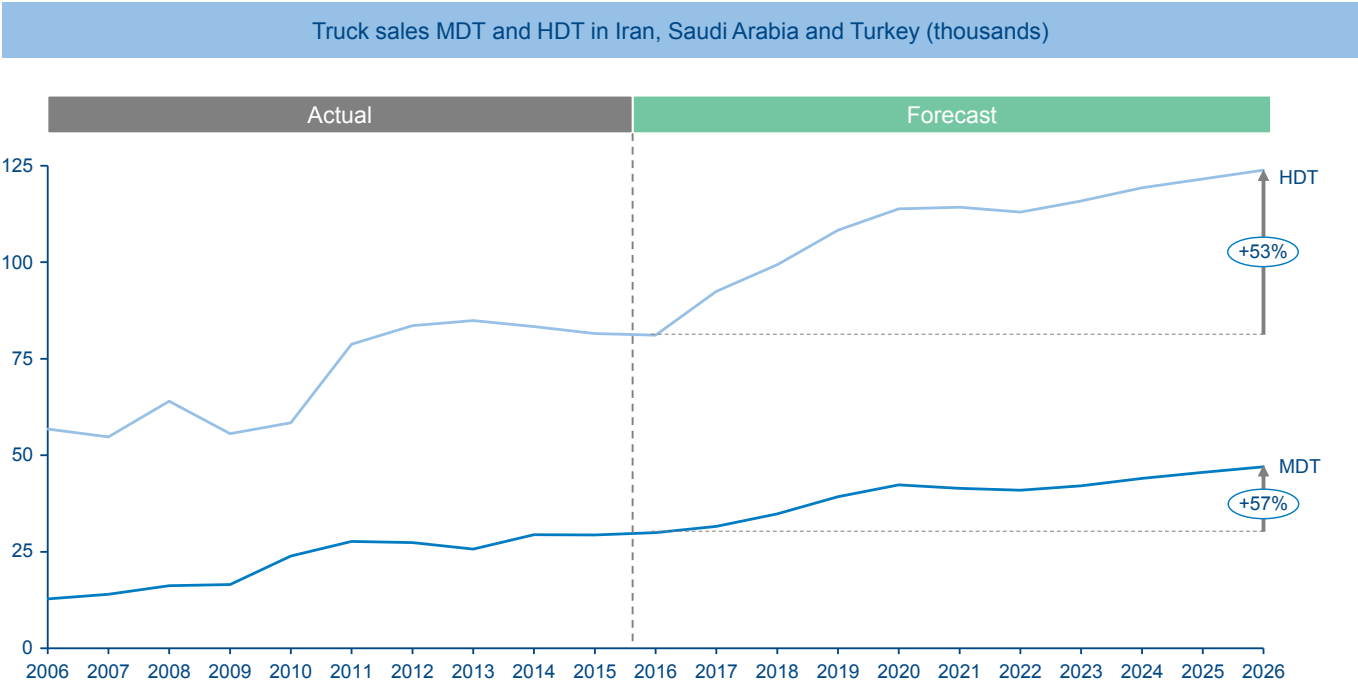
Arthur D. Little has analyzed the three most critical markets in the Middle East in more detail, highlighting the segment-specific opportunities and risks for manufacturers and industry stakeholders. Combined, the three markets account for more

Figure 29: The three largest truck markets in the Middle East are Iran, Turkey and Saudi Arabia



Source: IHS Truck Sales Data Saudi Arabia, Arthur D. Little Middle East Model, Arthur D. Little Analysis, Expert Interviews

Figure 30: Sales development for trucks in Iran, Saudi Arabia and Turkey has substantial growth potential in the next decade

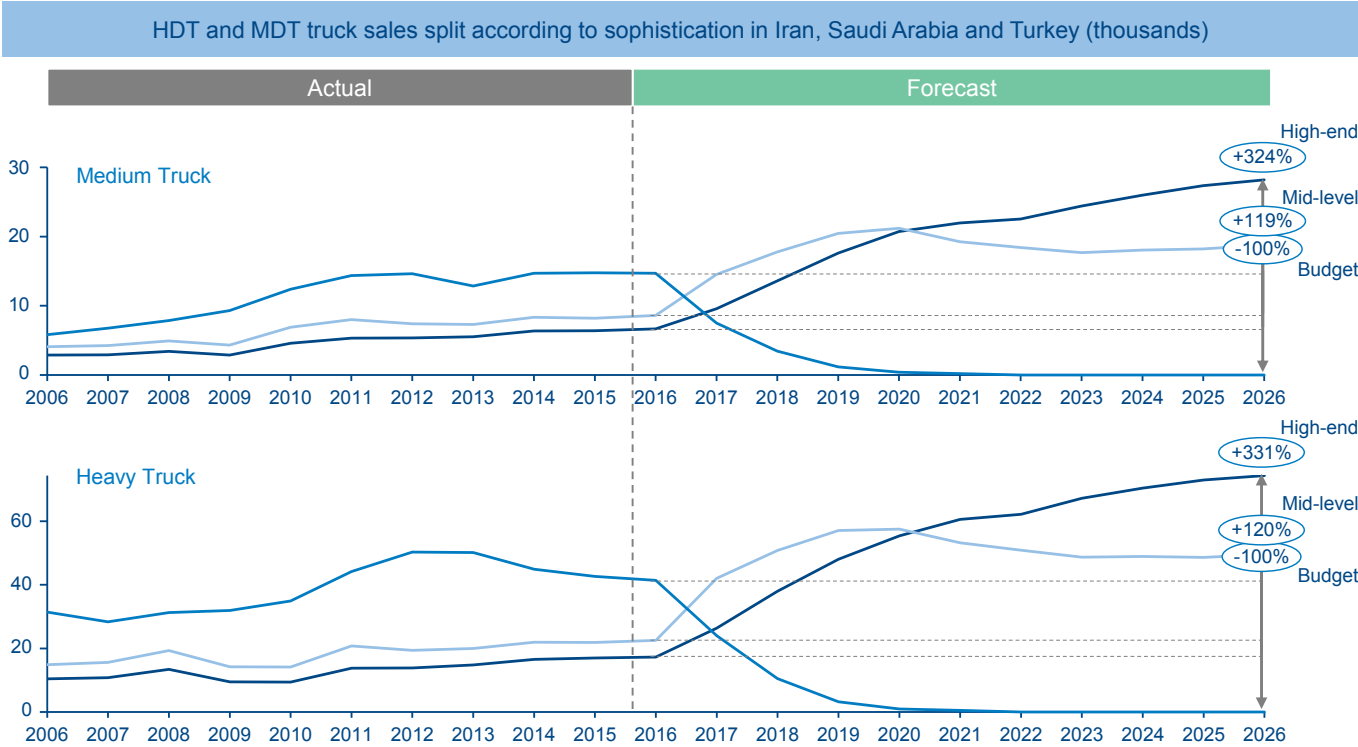


Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

than 80% of the total sales volume and are expected to grow in sales numbers as well as sophistication level.

Aside from Iran, Saudi Arabia and Turkey, Egypt, with 10% of sales, is the only other large market in the region. The remaining seven countries are minor, but profitability levels can vary there.

Figure 31: Heavy and medium sales growth in Iran, Saudi Arabia and Turkey is driven by market recovery and a quality increase of trucks



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

Iran is the dominating market and will continue to increase in sales importance, and require truck quality even more. In order to increase the competitiveness of Iran and boost the economy, an efficient transport system is critical and needs to be equipped with reliable trucks.

Combined, the three markets will increase significantly in the next years, due to the economic recovery in Iran and ongoing investment and truck-renewal programs in Turkey and Saudi Arabia. Towards the middle of the next decade, the demand will continue to increase. Heavy trucks will dominate the sales and outsell medium trucks by almost double.

As the underlying trends are directionally similar, the truck sophistication levels develop comparably. In these markets, high-end trucks will dominate market growth due to operator demand for productive and reliable trucks, as well as their increasing awareness that high-end trucks are more effective vehicles and make the most financial sense in the long term. This is not to say that price is not an issue – price pressure is present in all segments, and negotiations do focus on it. But operators understand the benefits of quality trucks, and we expect that ever fewer will downgrade to lower quality levels just to save on purchasing price. Those that do will struggle to remain competitive in the long term.

As the chart above shows, the sophistication developments of the medium and heavy segments are almost identical, as the same trend comes into effect. Heavy trucks display marginally stronger development in the segments split, compared with medium trucks. Interestingly, the mid-level segment will

increase in the next years over-proportionally, while high-end trucks will take more time to increase. However, despite the fact that high-end trucks are a bit slow off the mark, ultimately they will dominate in these markets. Allowing for the economic recovery process (for operators to finance these trucks), and for manufacturers to be fully established in the market in terms of sales and service as well as installation of an industrial structure, the advancement of this market will take time. However, the implication is clear for industry stakeholders – quality pays off and wins.

5.1 Iran

Iran was among the biggest truck markets in the Middle East. With the lifting of the sanctions, Iran has substantial growth potential and will be the single-largest truck market in the Middle East. The Iranian economy has significant recovery potential and is expected to grow significantly in the coming years. This has positive implications for truck demand as well as truck sophistication requirements.

Before the sanctions were put in place, European manufacturers dominated the Iranian market. Following the sanctions and the resulting lack of trucks from Europe, Chinese trucks filled the gap. Now, some of China’s leading truck manufacturers are in the region, particularly Beiqi Foton, CNHTC, Torch Group, FAW and Dongfeng.

Demand for trucks in Iran has declined as a result of the sanctions and, consequently, the reduced economic activity.

Figure 32: Iran – geography and economic parameters (2014)

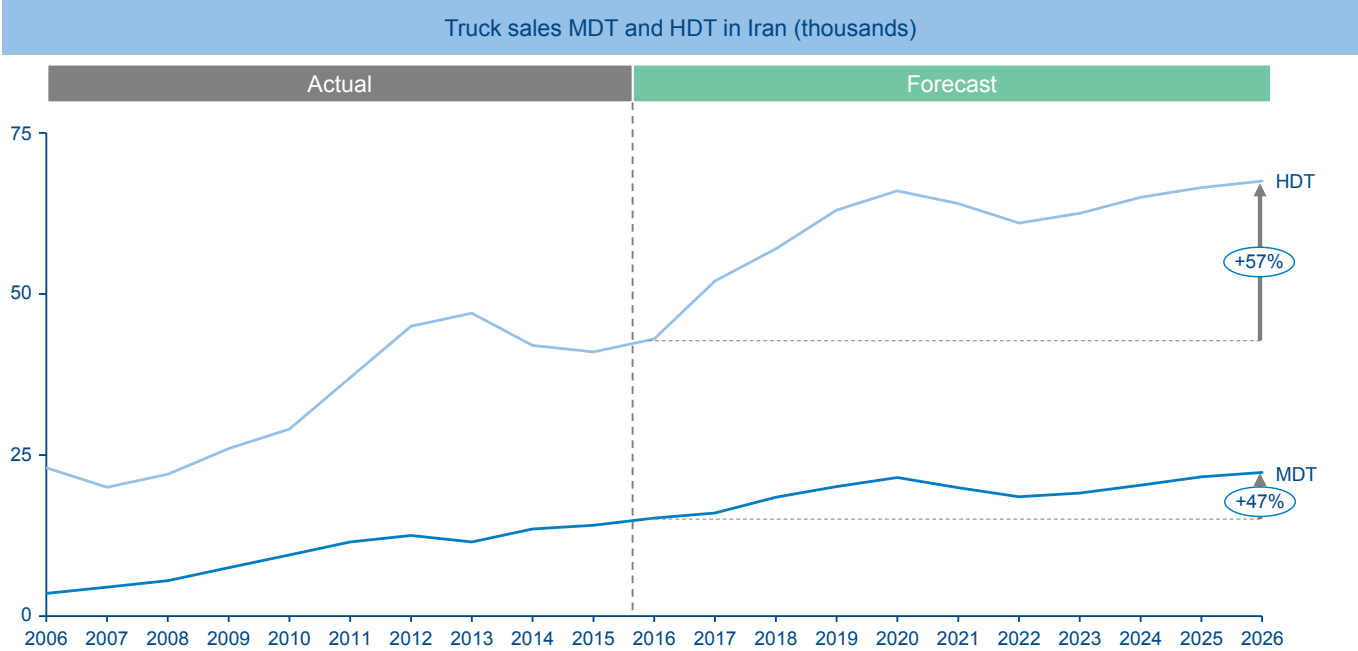


Source: CIA World Factbook, World Bank



	<ul style="list-style-type: none"> <li>■ <b>Population:</b> 79.1 mn</li> <li>■ <b>Country size:</b> 1,648,195 sq km</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>GDP:</b> 387.61 bn USD</li> <li>■ <b>GDP / capita:</b> 4,877 USD</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Import</b></li> <li>- 80,362 mn USD (2014)</li> <li>- Partners: UAE 39.6%, China 22.4%, South Korea 4.7%, Turkey 4.6%</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Export</b></li> <li>- 102,796 mn USD (2014)</li> <li>- Partners: China 22.2%, India 9.9%, Turkey 8.4%, Japan 4.5%</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Most important routes</b></li> <li>- Tehran – Caspian Sea, Tehran – Mashhad, Tehran – Isfahan, Tehran – Tabriz, Pakistan – Kerman</li> </ul>

Figure 33: Sales development for trucks in Iran has substantial growth potential in the next decade as the market recovers from the sanctions

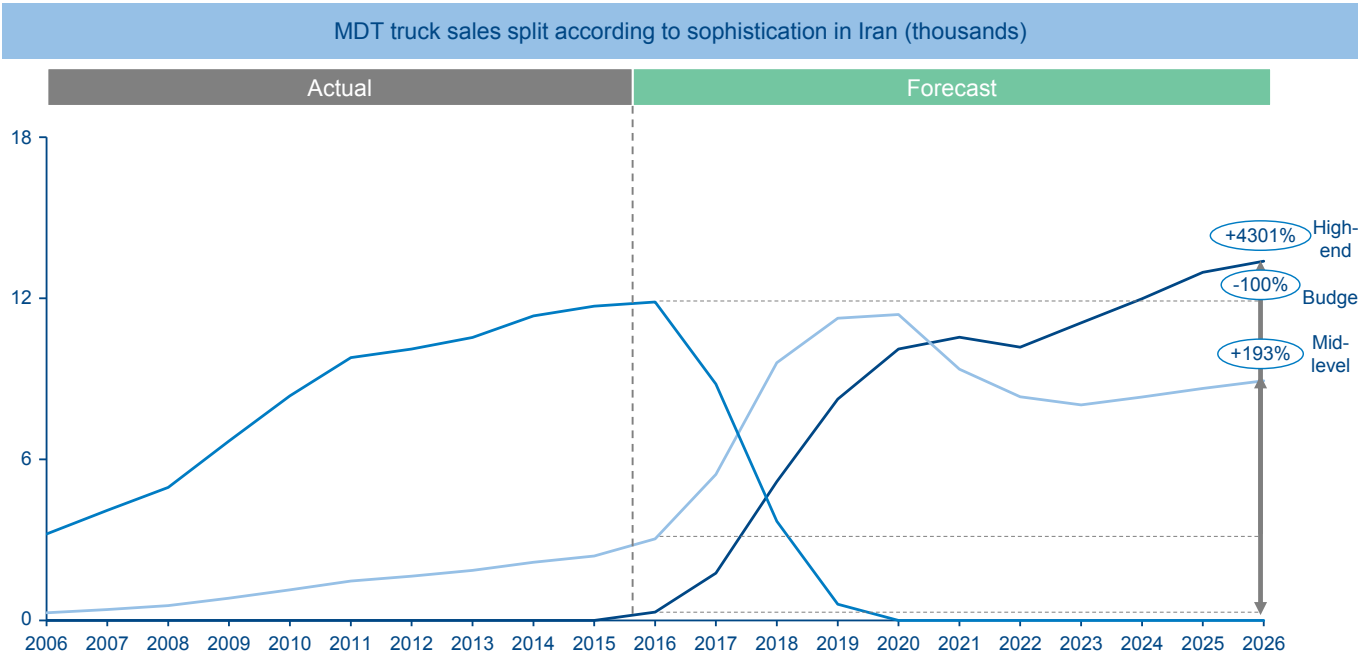


Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis

Due to these constraints during the sanctions, the replacement demand for trucks in Iran is now substantial, which will drive truck sales up in the next years. It is planned to replace around 120,000 old trucks alone, which nurtures our hypothesis that truck replacement demand is significant. After several years

of increase, the market will enter into a cool-off phase at the beginning of the new decade, before further growth sets in. However, not only truck volume, but also sophistication of trucks, will increase considerably as a result of the recovery.

Figure 34: medium truck sales per sophistication segment vary considerably but show the strategic importance to offer higher quality trucks



Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis

As more sophisticated trucks are now available again in Iran and fleets have the resources to invest in quality trucks, market growth is taking place for mid-level and high-end trucks. Budget trucks are declining due to their lack of operational performance and reliability. However, this development does not mean that traditional budget truck manufacturers are exiting the market. In fact, several budget truck manufacturers from China are now providing mid-level trucks; therefore, they are able to compete in Iran as they meet the new market requirements. Western manufacturers need to be aware of the changing competitive landscape and derive strategies to compete with Asian trucks – in particular Chinese brands.

The sophistication segment analysis for medium trucks reflects the impact of the sanctions on the Iranian market. During the sanctions, Chinese trucks were largely assembled in Iran locally; these were budget trucks, as the Chinese brands initially had no other product type on offer. As the Chinese manufacturers developed mid-level trucks, these were introduced in Iran and gradually increased their market share, even during the sanctions. With the opening of Iran and the significant demand for quality trucks by fleet, the market for mid-level and high-end trucks will now return at a fast pace.

Manufacturers that (re-)enter Iran need to meet the increasing quality requirements of the market. For both medium and heavy truck manufacturers, budget trucks are not a viable strategic option; instead, mid-level and high-end trucks need to be launched.

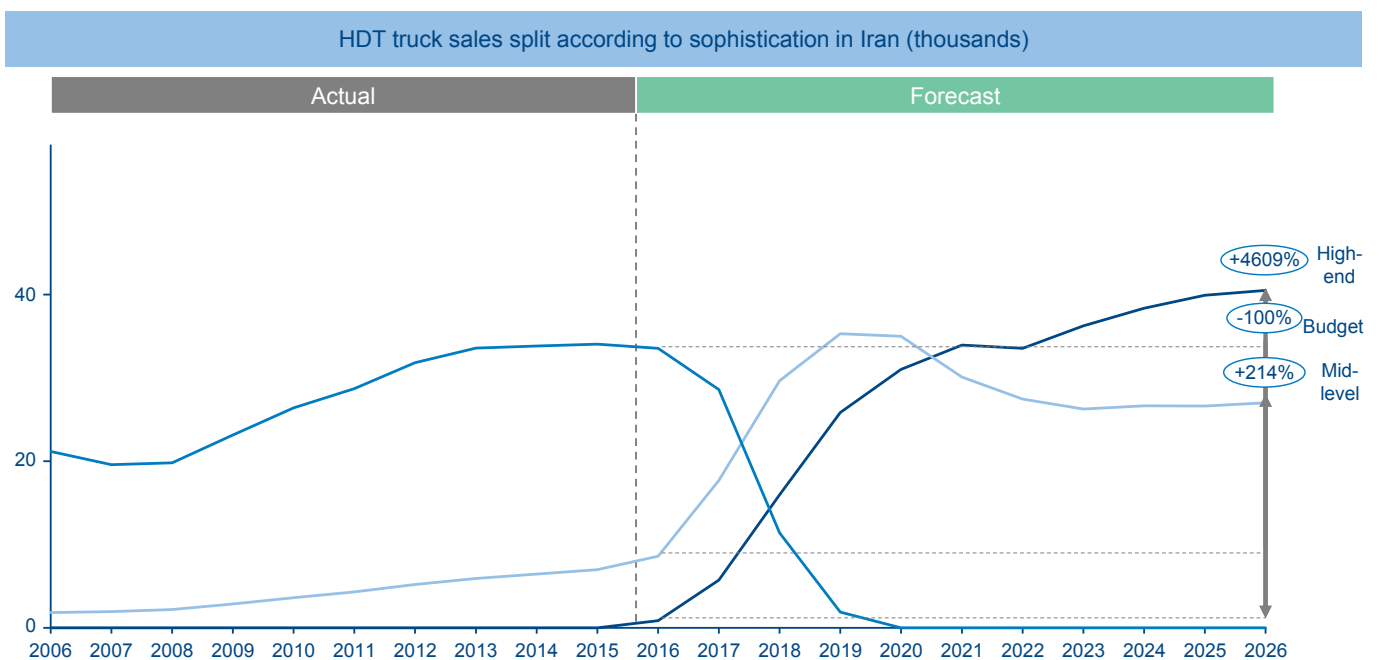
There are clear signs that prove our theory that truck sophistication will increase over-proportionally to general market growth.

However, as a result of the strong Chinese truck presence in Iran during the crisis, there has been a structural impact on the truck landscape. Chinese manufacturers will largely remain in the market and compete with Western brands, initially in the mid-level segment. They will not leave the market, but instead be confronted with more sophisticated European trucks, as well as the fact that the local market favors European products – especially now that they have a choice again. We believe it would be a fallacy to assume that Chinese manufacturers will leave Iran just because of the strong decline of the budget market; conversely, they will face strong competition in product and product sympathy terms from Europe.

The strategic implication of this competitive reality is that Western brands need to compete against Chinese brands mainly on product quality, pricing their trucks at premiums that are justified in productivity terms. Conversely, Chinese trucks will compete on price, but the technological gap with Western brands will reduce over time. Therefore, Arthur D. Little expects Iran to become a market with numerous truck brands of different origins. In these markets, manufacturers can compete successfully if two things are considered in the business plan:

1. Segment focus: Define a clear segment and target group in the market and develop a product offering with a clear USP for them.

**Figure 35: Heavy truck sales growth in Iran is driven by market recovery and a quality increase of trucks, which inherently favors Western Brands**



Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis



2. Volume: Set realistic sales targets despite the significant overall market size.

Both are critical for manufacturers' long-term market success. The main risk for manufacturers in such markets is that competitors have overestimated their sales potential and will start to compete on price. This has happened in markets with similar manufacturer structures and reduced the profitability of the market. Maintaining pricing discipline is therefore important and in the interest of all stakeholders.

### **Iranian local manufacturer infrastructure**

Traditionally, leading European manufacturers cooperated with Iranian manufacturing companies, as it was necessary for foreign producers to have their products assembled locally. With the lifting of the sanctions, many Western brands revived their industrial ties with local brands to offer their trucks in the market again.

There are three local manufacturing entities: Iran Khodro Diesel, Saipa Diesel and Bahman Group, which build and assemble pick-up trucks, trucks and buses for the local market.

For example, for Iran Khodro Diesel, Daimler Trucks was a longstanding cooperation partner until the sanctions came into effect. While conventional trucks were still produced (the WH1924 and WH2624), newer trucks from China filled the gap in its product range. CNHTC plays an especially important role for Iran Khodro Diesel, offering the Howo series, among others. Another Chinese manufacturer is Shaanxi Trucks, present in the market with heavy trucks. Daimler Trucks is currently localizing the Actros and Axor range together with Iran Khodro Diesel, competing with the Chinese truck brands for capacity.

As a further example, the primary partner for Saipa Diesel is Volvo Global Truck. Prior to the sanctions, Volvo was the sole brand with which it cooperated. During the sanctions, Dongfeng (with which Volvo Truck has a China JV) was still present in Iran via Saipa Diesel. Another Chinese manufacturer the company works with is Foton, primarily on medium trucks. Volvo was quick off the mark to bring state-of-the-art trucks into Iran after the sanctions were lifted, together with Saipa Diesel. Among others, the Volvo FH 4x2 and the Volvo FMX 6x4 are now available. In the medium truck segment, the Renault D-Series, also a modern European distribution truck, is available. Arthur D. Little takes the fact that these modern products are back as evidence that the Iranian truck market has not lost its need and willingness to invest in high-quality and productive trucks.

The Bahman Group produces the FAW J6 heavy tractor largely via its Bahman Diesel Company, but also works with Isuzu for the local medium- (NQR Series) and heavy- (FVR Series) truck

market. Bahman Group has other business units that are not related to the automotive or commercial-vehicle industry.

Saipa Diesel, Iran Khodro Diesel and Bahman Group have both increased the quality of the trucks they produce. Quality-control measures have been implemented for the production process. This is necessary to remain competitive in the market and ensure truck functionality in operations. The local Iranian manufacturers are now on comparable quality levels. But these manufacturers still face challenges, especially in terms of productivity.

The three manufacturers have expanded the sales process and dealer numbers. Iran Khodro Diesel, Saipa Diesel and Bahman Diesel Co use external companies or different business units of their parent companies for sales and distribution. They have dense networks of sales points. This fortifies their market positions and ensures closer customer relations. Sales staff also receive training to advise customers. This was necessary, among other things, to cope with the increasing product complexity.

Service and after-sales are increasingly important for the buyers as well, especially for those in the mid-level and high-end segments. All three Iranian manufacturing companies have improved their after-sales and service. In particular, spare-part availability is better and the service process has improved. Regular training of mechanics is ongoing as well, to ensure best practice in the service process. For the high-end trucks that are coming back into the market, service and after-sales are even more critical.

Saipa Diesel also exports some trucks to the African and Central Asian markets, but its primary market remains Iran. Arthur D. Little does not expect Saipa Diesel, Iran Khodro Diesel or the Bahman Group to create strong export businesses, as this would directionally conflict with the interests of their cooperation partners. Exceptions might be small and unstable markets close to Iran.

A case in point is Iraq. The Iraqi market has already received several trucks assembled by both Saipa Diesel and Iran Khodro Diesel. Due to the market and requirement proximity to Iran, substantial additional potential lies here. Therefore, a strong foothold with the manufacturers in Iran is strategically important.

Many global truck manufacturers are currently investigating opportunities in Iran and suitable entry strategies. In many cases, this also involves shifting some value creation into Iran to lower price points and reduce the logistic complexity. Furthermore, manufacturers need to launch local service infrastructures to adequately support their trucks and ensure uptime is safeguarded. This typically also requires local

partner companies that provide critical market insight and understanding.

5.2 Saudi Arabia

Currently, Saudi Arabia is, to a large degree, dependent on the petroleum sector for its economic prosperity. There are no other significant economic pillars on which the country can rely at this stage. Consequently, the main drivers of truck demand are activities around the petroleum industry and national transport of generalist cargo.

The recent decline in oil price has had an adverse impact on truck demand, though Saudi Arabia has ongoing strong sales potential longer term, not least based on the expected higher oil price in the future.

A major driver for truck demand in the next decade is the economic diversification that Saudi Arabia has announced. The so-called "Automotive Cluster" is an important initiative, as this diversification will also have a knock-on effect on truck demand with respect to vehicle configurations and usage types. Currently, the majority of heavy trucks in Saudi Arabia are used in the petroleum sector. The truck-type variation opens up opportunities for manufacturers, especially those that offer high-end, long-distance trucks with focus on general cargo usage. A further implication for the expected changes as a result of the diversification is that manufacturers should proactively reassess

their current sales and service networks and adjust the structure to accommodate different uses of trucks.

Heavy trucks remain the dominating sales segment in Saudi Arabia, as they are mainly used for longer-distance and petroleum-related transport tasks, whereas medium trucks are used for regional transportation.

In the medium and heavy truck segment, the sophistication split develops similarly, as the same fundamental trends and developments are impacting truck demand. The mid-level truck segment will dominate until the end of this decade. The top-end segment was always strong as well, and will lead in the next decade, due to an ongoing demand for higher-quality trucks at fleets. Reliable and effective trucks are a differentiating factor for truck operators, and therefore demand for them keeps increasing. In contrast, budget trucks consequently are declining and will phase out of the market.

For manufacturers, the strategic implication of this development on the product side is to offer higher-quality trucks. Unlike other markets, Saudi Arabia has had a more diverse brand structure, with manufacturers from both Asia and the West. Chinese brands play a lesser role in this market, but they are entering into Saudi Arabia. However, Western brands and Japanese/Korean manufacturers account for more than 85% of the market.

The implication of this market structure is favorable for Western manufacturers, as they are operating with fewer competitors

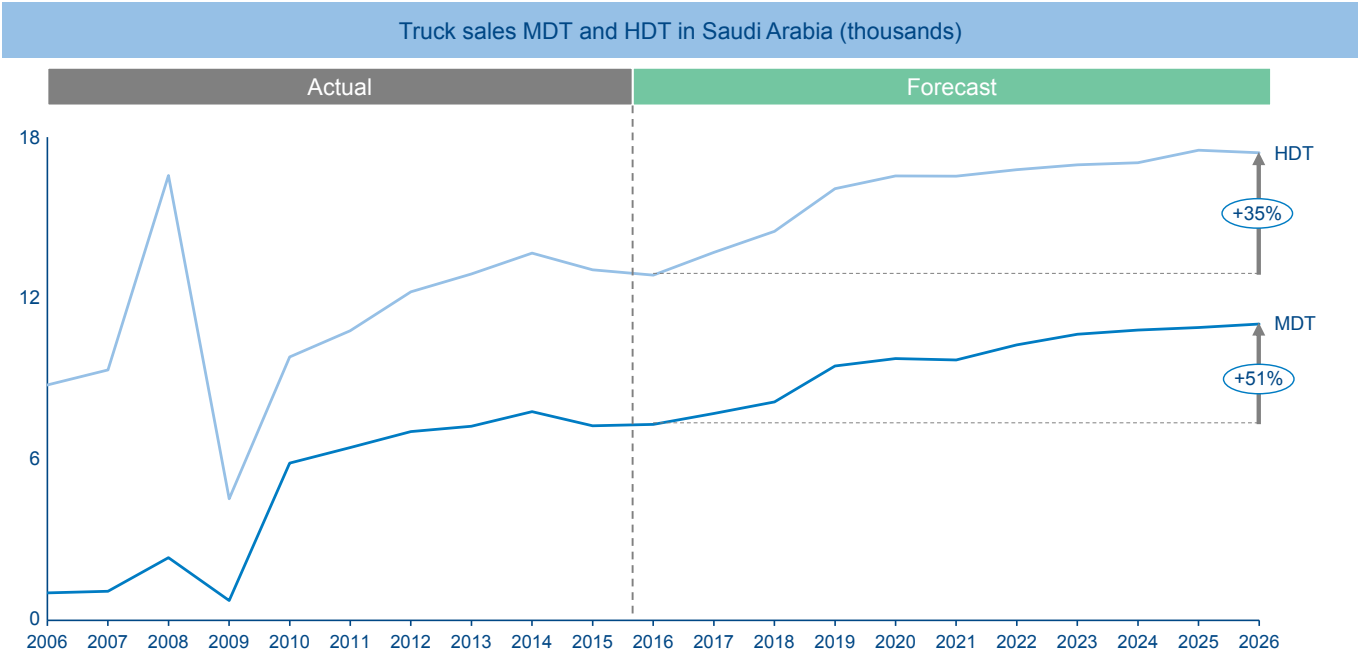
Figure 36: Saudi Arabia – geography and economic parameters (2015)



Source: CIA World Factbook, World Bank, IMF

	<ul style="list-style-type: none"> <li>■ <b>Population:</b> 31.5 mn</li> <li>■ <b>Country size:</b> 2,149,690 sq km</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>GDP:</b> 653.22 bn USD</li> <li>■ <b>GDP / capita:</b> 20,813 USD</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Import</b></li> <li>- 250,506 mn USD (2015)</li> <li>- Partners: China 13.9%, US 12.6%, Germany 7.1%, South Korea 6.1%</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Export</b></li> <li>- 218,024 mn USD (2015)</li> <li>- Partners: China 13.1%, Japan 10.9%, US 9.6%, India 9.6%</li> </ul>
	<ul style="list-style-type: none"> <li>■ <b>Most important routes</b></li> <li>- Jeddah – Mekka, Dammam – Khafji, Riyadh – Taif – Jeddah</li> </ul>

Figure 37: Sales development for trucks in Saudi Arabia will recover to peak sales levels through the next decade



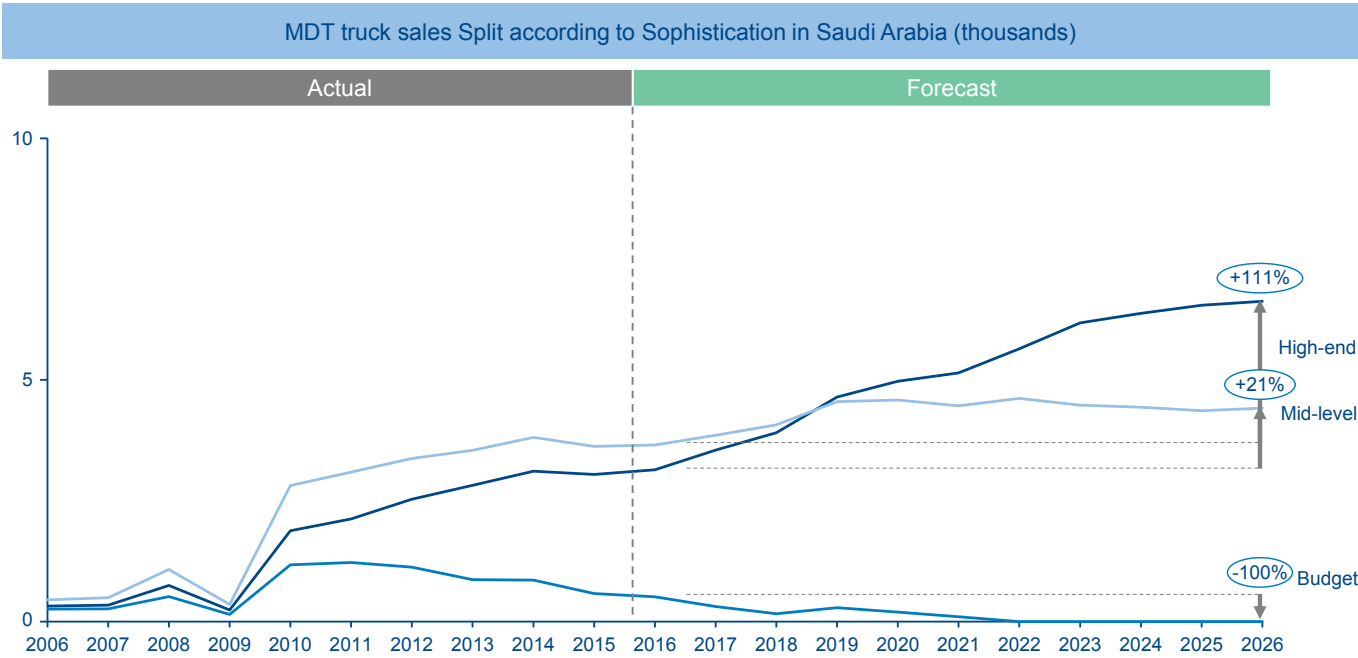
Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

than in most other markets in the Middle East. It is critical for these manufacturers to keep the position; this is best realized with a quality product offering.

Conversely, manufacturers that are considering market entry into Saudi Arabia need to enter with mid-level or high-end trucks

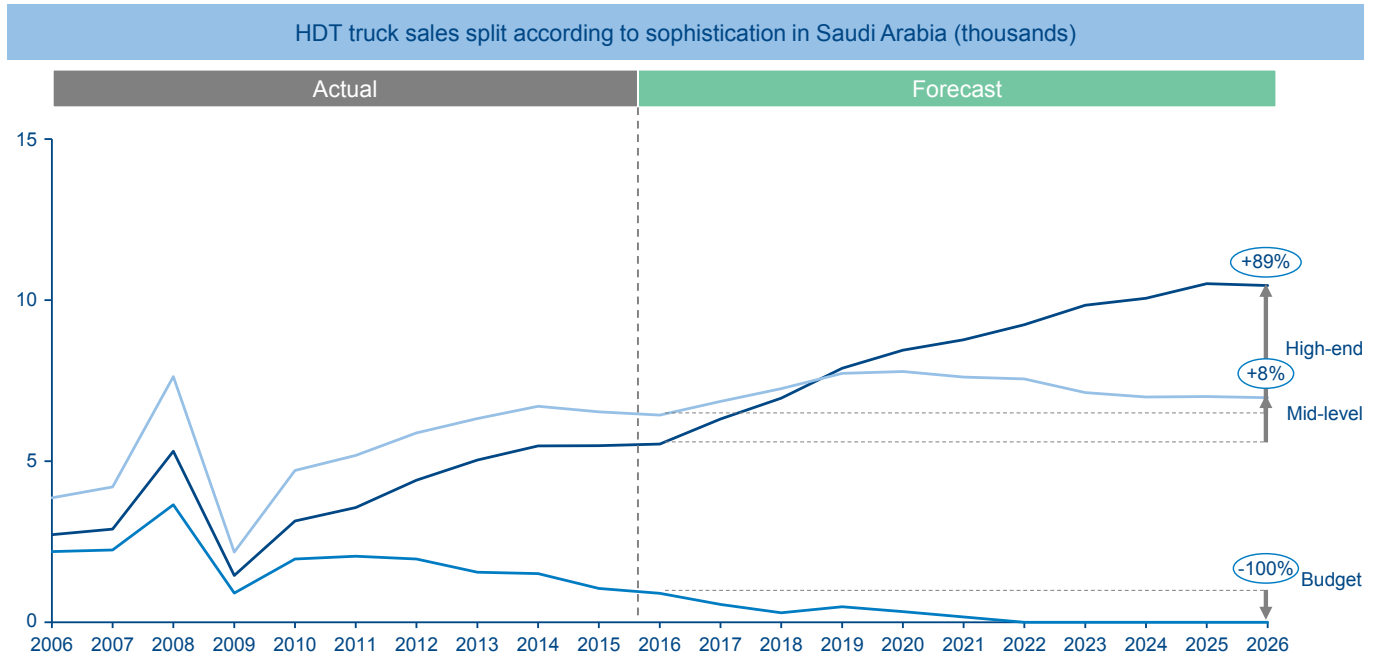
and have the necessary sales and service infrastructure in place. Considering the overall volume of the Saudi Arabian market and the incremental investment, as well as the prevailing standards, there are not likely to be too many new market entrants.

Figure 38: Medium truck sales are transitioning to high quality levels, with mid-level and high-end accounting for a similar share



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

Figure 39: Heavy truck sales are characterized by a shift towards more sophisticated trucks, but in volume terms peak levels will not be reached by next decade



Source: IHS Truck Sales Data Saudi Arabia; Arthur D. Little Middle East Model; Arthur D. Little Analysis

**Saudi Arabia’s automotive cluster initiative**

In an effort to reduce the economic dependence on oil, Saudi Arabia is in the process of initiating several economic diversification programs. These are referred to as so-called “clusters” and encompass five sectors in total: biotech and pharma, plastic and packaging, mineral and metal processing, industrials and the automotive industry.

Saudi Arabia offers several financial benefits and infrastructure incentives for manufacturers to increase or build industrial structures. Both car and commercial vehicle manufacturers would benefit from these support measures.

Manufacturers with strong market share (the top three per segment) would save on logistics costs if they had local presence. At the moment, Isuzu is the only manufacturer that has a local assembly operation. Saudi Arabia has a favorable geographic position and could therefore be an interesting export location. However, it is important to also have suppliers that are locally available to avoid long and complex import processes. For suppliers of energy-intense parts, Saudi Arabia offers low energy costs and therefore structural cost advantages.

**5.3 Turkey**

Turkey’s current political turmoil will not change the importance of the economy within the region in the grand scheme of things. The strategic importance of local truck production is not likely to

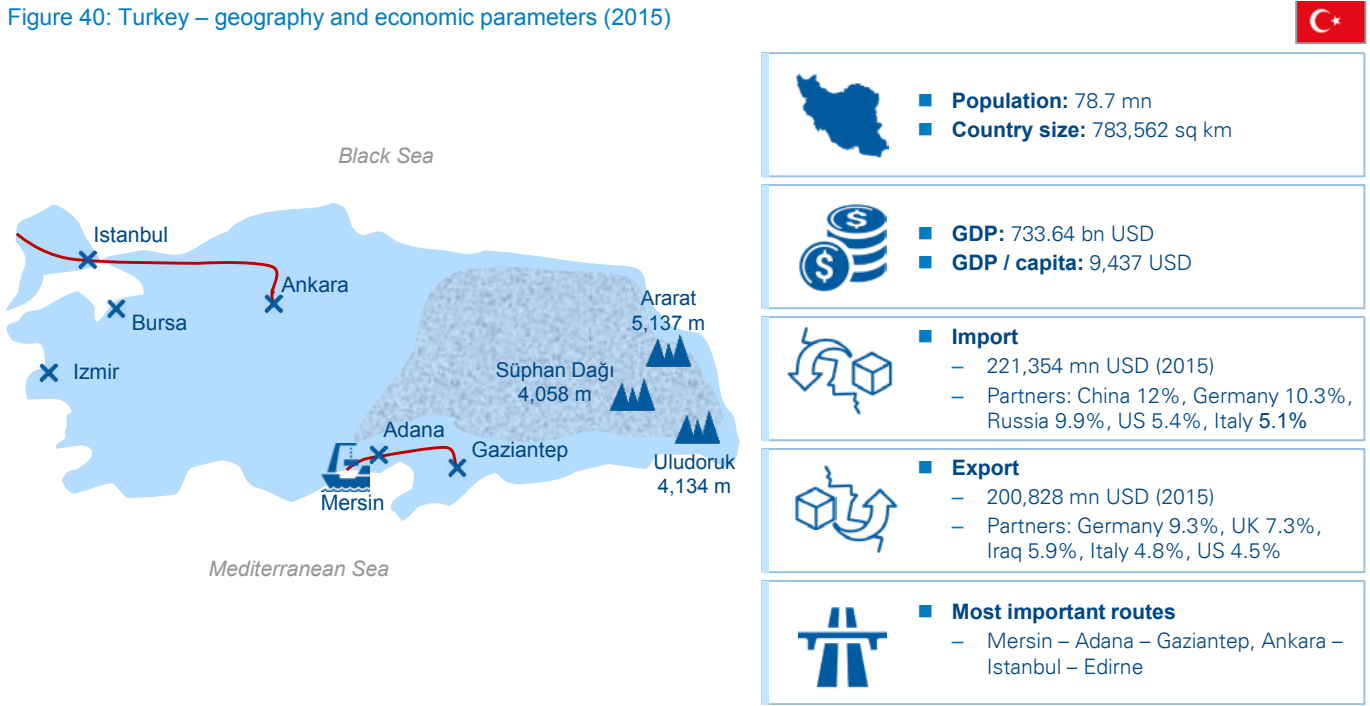
change any time soon either. But the current developments do impact the truck industry, as they do the entire economy.

Out of the three major markets in the Middle East – Iran, Saudi Arabia and Turkey – Turkey has a much more balanced economic footprint. This also impacts the truck industry and the scope of requirements of different operator types regarding their trucks. Trucks are generally long distance and operate in national and regional distribution. The main sectors are construction, agriculture, general cargo and heavy distribution.

In 2016, the introduction of Euro 6 had a negative effect on the market, compounded by political instabilities. However, truck demand will return to new high levels, driven by economic growth and ongoing truck replacement demand.

Heavy trucks are expected to grow in the next decade to a new high level. Truck-fleet formation and more regional distribution by Turkish operators is a key driver of market growth. A further development that drives truck sales is replacement demand due to advanced truck age and ongoing fleet professionalization and modernization. The market will increase by over 50% within the next 10 years as a result. The medium truck segment has significantly smaller volume than the heavy segment, but that growth potential is even higher as a result of more regional distribution transport, and especially strong demand for replacement of old trucks. Operator consolidation in regional haulage is a basis for the large demand increase.

Figure 40: Turkey – geography and economic parameters (2015)



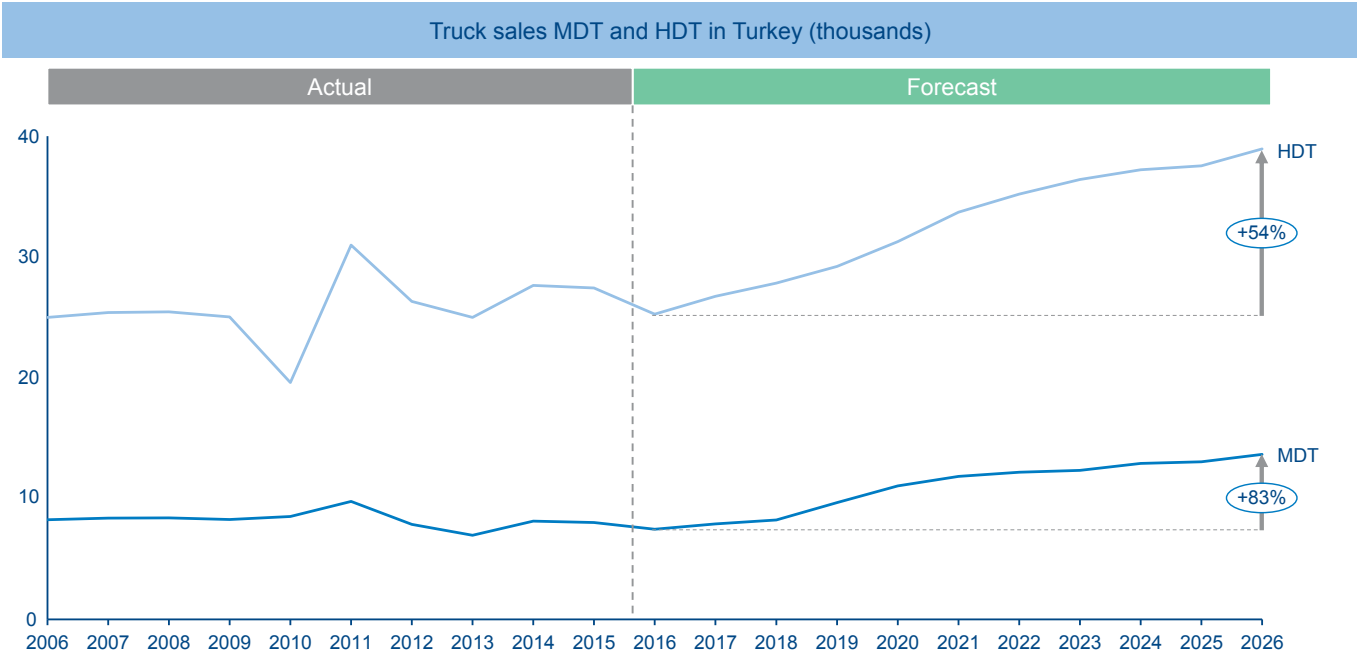
Source: CIA World Factbook, World Bank, IMF

Medium truck sales will increase strongly over the next decade. In sales-volume terms, high-end trucks are driving the demand up, followed by mid-level trucks. Truck operators in Turkey need reliable and sophisticated trucks, and therefore these truck types account for all the segment growth. At the same time the budget segment is phasing out, so consequently the current producers of budget trucks have to shift their offerings to mid-

level trucks (such as Ford-Otosan) or go out of business (such as BMC and Askam).

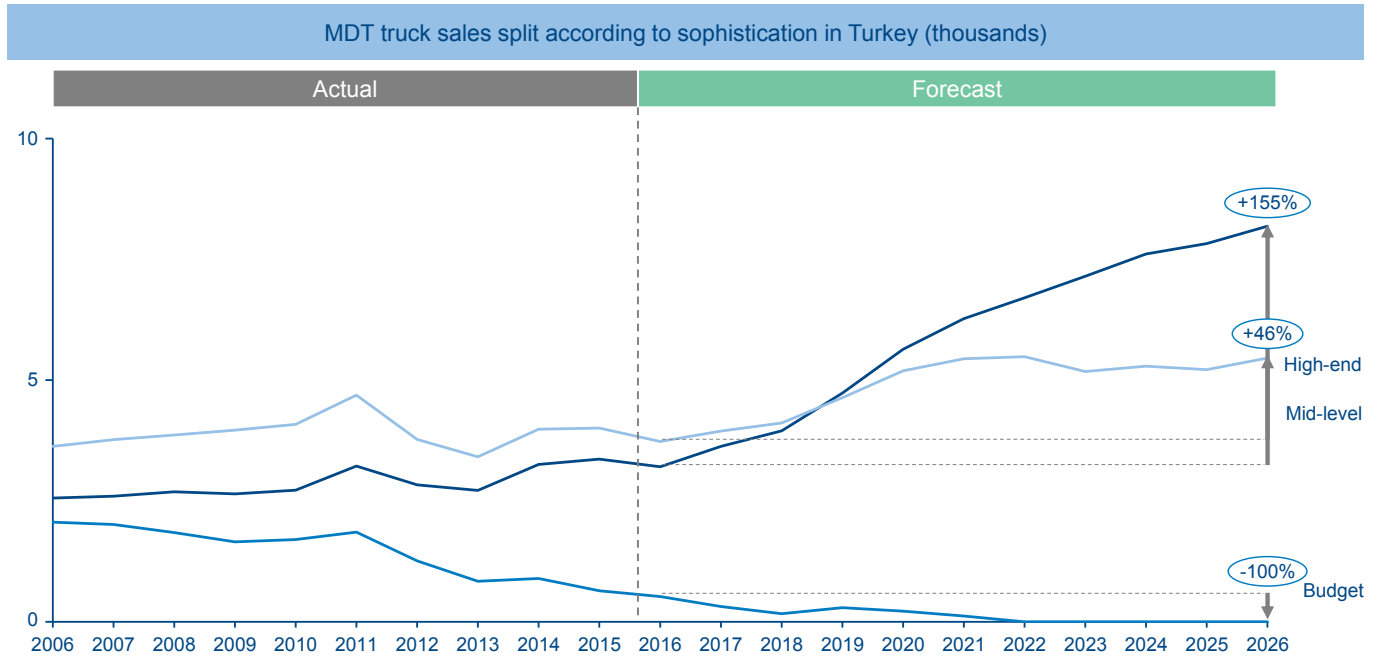
The heavy segment dominates the Turkish truck market. The shift to higher sophistication is ongoing. However, unlike other Middle Eastern markets, Turkey has always had a large share of sophisticated trucks. Other manufacturers, such as Ford Otosan, are now present in the mid-level segment, having left the budget

Figure 41: Sales development for trucks in Turkey are increasing due to a developing economy and an aging truck population



Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis

Figure 42: Medium truck sales are increasing to higher quality trucks, with mid-level and high-end accounting for growth, whilst budget trucks are phasing out



Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis

segment behind. Mercedes-Benz has had a strong presence in Turkey and, together with other European manufacturers, sells high-end trucks.

Overall, the market developments in the medium- and heavy-truck segments are positive, with strong growth potential in the coming decade for higher-quality trucks. This development is a solid foundation for growth for manufacturers in Turkey.

The implication for manufacturers is to focus on quality trucks and related services to succeed in Turkey’s truck market. The range of products that can be sold in Turkey is broader than in most Middle Eastern markets; hence, manufacturers need to define the range of offerings in order to be effective. Most manufacturers focus on the tractor-unit market, which accounts for the majority of the heavy truck sales, especially with fleets. Another important segment for heavy trucks is agriculture transport (mostly four axles), in which fewer manufacturers compete. With the introduction of Euro 6 in 2016, the trucks in Turkey are identical with the ones in Europe. The directional convergence of market requirements with ever-fewer adaptations facilitates business in Turkey for European truck manufacturers.

**Turkish Truck Industry**

More than any other Middle Eastern market, Turkey has a significant automotive sector with local production and engineering facilities. This is a stand-out characteristic that

only Iran can also feature, albeit on a much smaller scale at this stage. In Turkey, foreign manufacturers cooperate with local industrial conglomerates for local production purposes. Examples are Ford Otosan and Isuzu Anadolu.

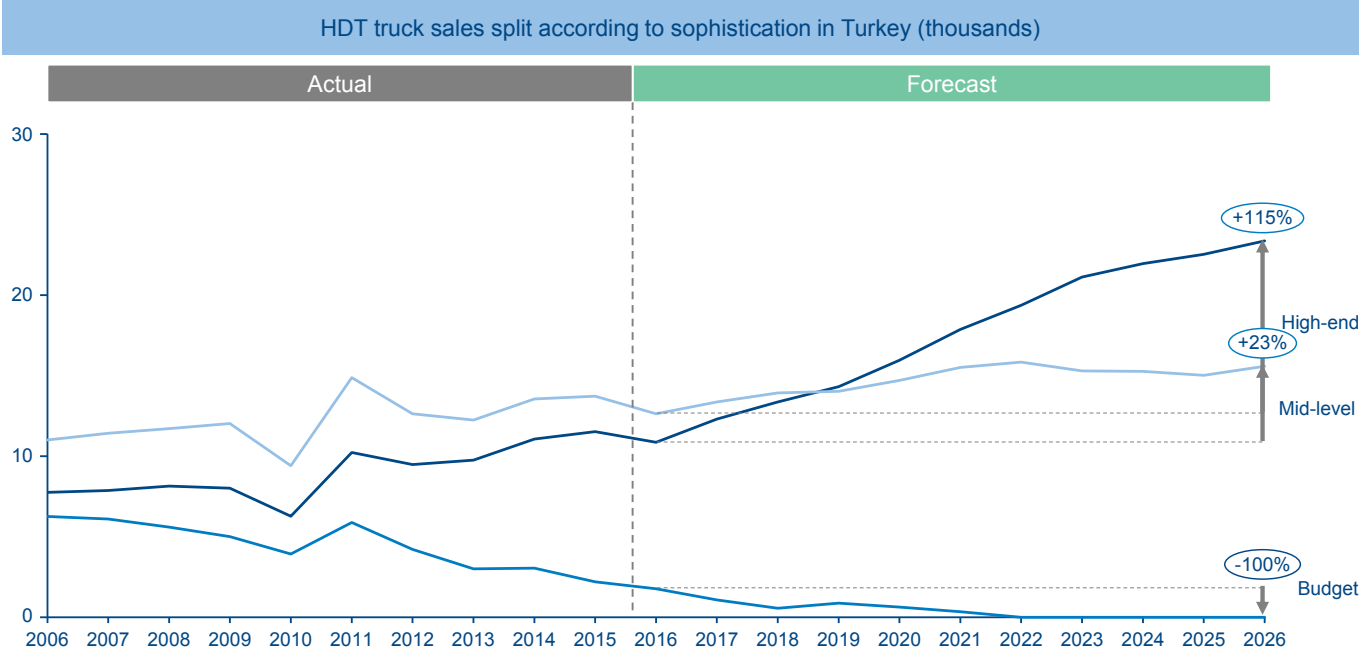
The automotive industry structure in Turkey is characterized by a range of joint ventures between Turkish industrial conglomerates and foreign manufacturers. While it is not a must from the legal side, it still is the default structure.

Cooperating with Turkish trading houses is also common on the sales side, as they can offer fast and much better market access, along with the relevant infrastructure. Often, banks are part of these trading houses, so financing services can be offered as well as competitive conditions.

Manufacturers that are considering entering the Turkish market are advised to find suitable local trading partners to ensure fast market access. Given the prevailing high standards for trucks, which have substantially increased again with the introduction of Euro 6, we do not expect new market entrants from other regions. In other words, the brand population will be almost identical to that of Europe, with only Ford Otosan as a further strong contender. This is also a rare characteristic in the Middle East, where market entries still typically occur. The challenge for manufacturers in Turkey is to grow market share by means of a well-structured product portfolio. A further challenge is the pricing situation. Prices are under pressure, and manufacturers grant strong discounts. This is all the more a concern, as Euro



Figure 43: Heavy truck sales in Turkey feature an ongoing shift to higher truck sophistication, as operators need productive and reliable trucks



Source: Arthur D. Little Middle East Model; Arthur D. Little Analysis

6 trucks cannot be sold with the necessary cost mark-up over Euro 5, which causes profit challenges.

Mercedes-Benz is a long-standing manufacturer in Turkey, producing trucks for the local market and export. More than half of the truck sales in are accounted for by Mercedes-Benz, due to their legacy standing in the market, which has resulted in a dense service network across the country. The leading position of Mercedes-Benz in the Turkish market also secures service revenues for its dealers. It is one of the few manufacturers that have no local partners but operate as stand-alone entities.

**5.4 Implications and actions for manufacturers**

Iran, Turkey and Saudi Arabia are essential markets for truck manufacturers from a sales-growth perspective. This is even

more so in terms of sophistication growth, as the increase in mid-level and especially high-end trucks is significant.

In terms of brand population, there are significant differences between the three countries. While Turkey is dominated by European brands, together with Ford Otosan, Saudi Arabia already has a more international market footprint, with brands from Europe, America, and both Japan and Korea, as well as new manufacturers from China. Iran could well be even more diverse in the near future, as the brand structure will feature names from many regions due to the respective legacy or more recent activity in the market. This implies that manufacturers need to be prepared for the respective competitive environment to succeed in Iran.

# Summary and recommendations for truck industry stakeholders

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Arthur D. Little analyzed the truck industry in the Middle East, both the market and industry structure and the implications these have on truck manufacturers. Our key findings are the following:

- **Sales growth:** The demand for trucks will increase notably in the next decade, which creates growth opportunities for manufacturers. Heavy truck sales will rise by 48% to 153,000, and mediums by 46% to 64,000, by 2026. This potential is significant, and requires manufacturers to put more emphasis on the region to leverage these opportunities.
- **Sophistication development:** In contrast to what many industry stakeholders expect, the Middle East has over-proportional growth potential for high-end trucks. Mid-level trucks also have this possibility, whereas budget trucks are set to decline in all markets. Consequently, manufacturers need to enter with quality products to participate in the growing segments in Middle East.
- **Brand and manufacturer structure:** While there is little chance for budget trucks to be of any relevance in the next decade due to their operational costs and limited life spans, this does not mean the manufacturers of budget trucks will all leave the region again. In contrast, the Chinese manufacturers that dominated the budget segment in particular have developed trucks in the mid-level segment. Hence, the overall brand structure in the Middle East will stay largely the same, whereas the sophistication segments will converge over time and directly shift to high-quality trucks. Manufacturers need to prepare for more competitors with high-quality trucks. In the ongoing tension field between price and quality, manufacturers need to ensure they sustain sound margin levels.
- **Operating realities:** The conditions in the Middle East are challenging for operators, drivers and trucks. In particular, distances and operating conditions (heat and dust), as well as road safety and driver qualifications, cause difficulty, compounded by some of the oldest truck populations of any region. Operators need to use trucks that can withstand this environment on a regular basis, and this calls for quality trucks and services.
- **Middle East versus South America:** In the context of the South American growth over the past decade (mainly driven

by Brazil) and the structural weakening of the Middle East, manufacturers have built up strong sales and industrial presences in South America. While a focus on South America was the best choice, manufacturers have over-exposed themselves to the region and now face challenges due to the structurally lower South American demand. Equally, manufacturers have not adequately focused on the Middle East, which offers significant growth potential. Consequently, a fundamental readjustment that reflects the strategic importance of the two regions is necessary.

- **Top three markets:** The Middle East is diverse from a market perspective. The major markets are Iran, Saudi Arabia and Turkey, which account together for just over 80% of the region's sales. With the opening of Iran, significant demand for quality trucks begins, which manufacturers can best leverage with the local manufacturing entities, Iran Khodro Diesel and Saipa Diesel. Saudi Arabia's demand will increase by one third over the next decade; key drivers are reduction of petroleum industry dependence and general economic diversification. For Turkey, the industry standard is already among the highest of all markets in the Middle East, and demand will grow due to increasing fleet standards and requirements. Turkey's truck production base is also among the largest in the region, but the domestic Turkish truck manufacturers are not in business anymore. Also, the roles of trading houses and local industrial conglomerates are important and can be leveraged to facilitate market entry.
- **More to come:** Not all markets in the region are currently stable, most notably Iraq and Syria. These two countries are not included in the study. However, with the expected stabilization and consequent opening of these markets, there are further significant benefits to the overall Middle East region in sales and sophistication growth potential. Also, the region's importance as a production location will increase. The three major markets, Iran, Saudi-Arabia and Turkey, have or are in the process of setting up local production infrastructure.

While volatilities that can impact the local market and industry still exist in the region, the Middle East is not receiving adequate management attention at this stage. Every truck manufacturer with global growth ambitions needs an in-depth business plan for the Middle East, in order to leverage the opportunities in a way that is best suited to its position.

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