

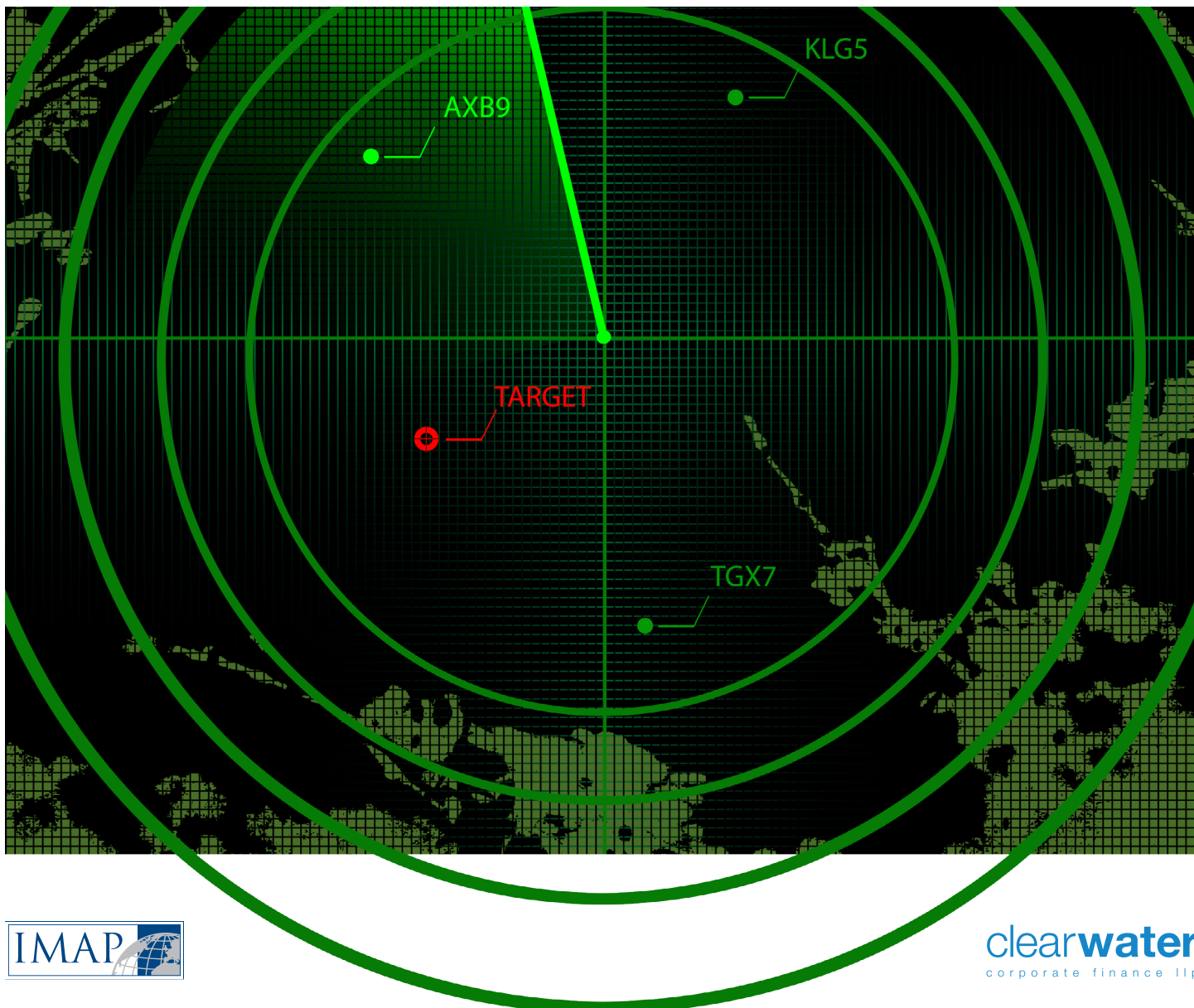


Aerospace Global Report 2011

A Clearwater Industrials Team Report

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to launch your next round of business success.

Curtiss-Wright Corporation
an aerospace and defense company
United States

Acquired 100% of

IMC
IMC MAGNETICS CORP.
an electrical components
and equipment company
United States

Represented the Seller

McNally Industries
Aerospace Supplier
United States

Acquired 100%
of the business operations of

Pacific Aero Tech, Inc.
Repairs Commercial Airliner Windows
United States

Advised the Seller

umeco
Umeco Plc
Composite Materials
United Kingdom

Acquired 100% of

IPM Industria Plastica Monregalese
Plastics industry
Italy

Advised the Buyer
and raised the debt funding for an MBO

LMI Aerospace
Aerospace Components
United States

Acquired 100% of shares

D3 Technologies Inc.
Aerospace Engineering Services
United States

INDUSMeca
Machining in aerospace field
France

Acquired 100%
of the business operations of

Nortier
Machining in aerospace field
France

Represented the Buyer

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Contents

Global aerospace & defence sector on the up.....	4
Summary of M&A transactions in the aerospace sector.....	4
Large-aircraft duopoly facing some competition.....	6
Regional jet manufacturers focusing on larger models	7
Grounded by economy, business jet sector is poised for take off.....	8
Expect sluggish performance for helicopters until 2012	9
Aerospace supply chain — key trends.....	10
Supply chain overview.....	10
Key trends.....	10
Supply chain components	11
Engine manufacturers.....	11
Avionics.....	12
Landing Gear	12
Maintenance, repair and overhaul (MRO) industry	12
Hot Niche Focus	13
Composites.....	13
Propulsion.....	13
Fuels	13
Blended wing body (BWB) — potential new design.....	13
Appendix: Thumbnail Summaries of Top 25 Aerospace Companies	A-i

Jon Hustler

*Head of Industrials
Clearwater Corporate Finance Llp*



The global aerospace and defence sector is valued at US\$920 billion and has been growing at 8.7 percent CAGR between 2005 and 2009. Whilst the global economic crisis has since had a significant impact, prospects for the sector look positive, with the market predicted to be valued at US\$1190 billion by the end of 2014. This is on the back of positive GDP growth, rising incomes, improving health of airlines and underpinned by the large order backlog of both Boeing and EADS.

In the UK, the aerospace market is estimated to generate £20 billion of sales per annum and provides 250,000 jobs. Not only do we have world class companies such as BAE Systems and Rolls Royce, but also a whole raft of high quality businesses supplying and supporting this important market.

In this report we will look at the drivers of growth and the prospects for the industry in the medium term. We will look specifically at the large aircraft manufacturers, regional and business jet manufacturers and importantly the aerospace supply chain.

2010 has also witnessed an increase in the number of M&A transactions during the year — which have topped 170 in number. In the UK alone more than 15 transactions worth US\$505 million have been completed. Against improving order books and profitability we expect the sector to remain a focus of M&A activity and of interest to both corporates and private equity alike.

We also look at some of the hot areas of focus in this sector. One particular area is the huge potential market for the supply of composites to the aerospace industry. As demand for more fuel efficient aircraft grows, this demand is expected to increase at an annual average rate of 7 percent over the next decade, and that is a factor in itself which will drive interest in this space.

I do hope you find this report of interest.

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Global aerospace & defence sector on the up

The global aerospace and defence (A&D) sector, valued at US\$920.6 billion (2009), grew at 8.7 percent CAGR for the period spanning 2005 to 2009. Defence is the largest segment accounting for around 71.8 percent (US\$660.8 billion) of the sector's total value, with the rest (US\$259.8 billion) comprising the civil aviation sector. The United States is the largest market, accounting for 59 percent of the global aerospace and defence sector value, followed by Europe with 22 percent share and Asia-Pacific with 19 percent share. Boeing (USA) is the leading market player with 7.4 percent share of the sector's value followed by EADS (Netherlands) with 6.5 percent share, Lockheed Martin Corporation (USA) with 4.9 percent share and BAE Systems Plc (UK) with 3.8 percent share.

Industry optimistic about growth

The aerospace industry is hopeful about the future as the sector is expected to grow at a 5-year CAGR of 5.3 percent between 2009 and 2014. The market is predicted to be valued at US\$1,190.5 billion by end of 2014. This positive outlook can be attributed to a positive GDP growth outlook, rising

incomes, improving health of airlines, and the large order backlogs with airframers (Boeing, EADS).

Strong economic growth expected in developing markets

Demand for air travel is pegged to economic growth. In the second half of 2009 the world's economy began to recover from the sharp economic downturn. On a geographical basis, GDP is expected to grow at an average 2.7 percent in North America and 1.9 percent in Europe but as fast as 7.4 percent in China for the next 20 years. With the growth of North American and European economies expected below the global 20-year average of 3.2 percent, airline passenger and fleet growth rates in Europe are anticipated to be proportionately slower in comparison to emerging

M&A Activities at a Glance

	2010 YTD	2009
Number of Transactions	173	166
Transaction Value (USD mn)	10,997	19,493
Average Transaction Size* (USD mn)	64	117
Average EV/Revenue	1.1 x	1.7 x
Average EV/EBITDA	9.6 x	7.4 x
Top 3 Regions (2010 YTD)	No. of transactions	Value (USD mn)
United States & Canada	69	8,485
Europe	73	1,163
Asia Pacific	18	1,125
Top 5 Countries (2010 YTD)	No. of transactions	Value (USD mn)
United States	68	8,485
Russia	17	218
United Kingdom	15	505
China	12	605
France	10	122
Activity by Sub-sector	No. of transactions	Value (USD mn)
A&D Maintenance & Services	52	2,432
Aircraft Systems, Components & Equipment	68	6,524
Other	53	2,041

* Average transaction size is calculated on the basis of transactions with disclosed transaction values — 58 deals in 2010 YTD and 61 transactions in 2009.

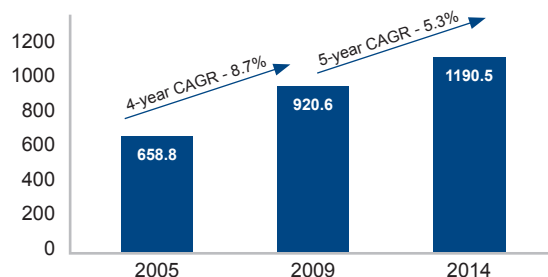
Source: Capital IQ, Clearwater

Summary of M&A transactions in the aerospace sector

The aerospace sector saw a total of 173 deals, valued at US\$10,997 million, during the first 11 months of 2010, surpassing the total number of deals (166) that took place during 2009. The total value of the deals (US\$10,997 million vis-à-vis US\$19,493 million) and the average deal size (US\$190 million vis-à-vis US\$320 million) in 2010 witnessed a decline over 2009 primarily because the total deal value during the preceding year was boosted by a single large deal worth US\$13.1 billion. This deal was the acquisition of Atitech Spa and it represented almost 67 percent share of total value of all deals that materialized in 2009. Excluding this deal, the dollar volume would have been much lower during 2009 as compared to 2010. During 2010 YTD, the largest deal has been the acquisition of Vought Aircraft holdings Inc. by Triumph Group Inc. for US\$1.5 billion.

Among countries, the US recorded the highest transaction value of US\$8,485 million from a total of 68 transactions, during the first 11 months of 2010. Russia was a distant second with a value of US\$218 million from 17 transactions. Among regions, Europe was the clear leader in terms of the number of transactions announced. However, in terms of transaction value, US trumped the rest of the world hands down.

A&D Sector — Size (USD billions)



Sources: Data Monitor, Clearwater

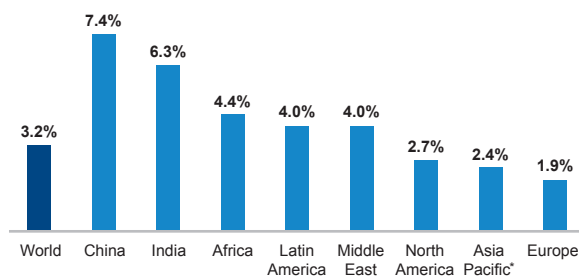
economies like China and India. However, these mature markets will see more of replacement demand driven by the need for more fuel-efficient and modern technology aircraft.

Fuel prices, environmental norms to spur aircraft replacement activity

Demand is also expected from airlines hamstrung by rising aviation fuel prices as they seek to replace older aircraft with new ones that are more fuel-efficient and use technology that conforms to stricter environment norms of the future. Airlines have made strenuous efforts to restrict their non-fuel cost structures during the past decade, which has risen by only 4.5 percent during this period. However, fuel cost as a percentage of revenue rose from 14 percent in 2001 to around 33.5 percent in 2008, as crude oil prices zoomed from an average US\$19 per barrel in the 1990s to US\$51 per barrel in the 2000s. A forecast by the US Energy Information Administration indicates that the price of oil will average US\$103 per barrel during the 20-year forecast period. This expected upswing in the price of crude oil should motivate airlines to replace older aircraft with more fuel-efficient aircraft.

Moreover, an increasing focus on tighter international environment regulations relating to air quality, emissions and noise levels also means that airlines will have to step up retirement of older aircraft, modernize their fleet, technology and infrastructure while improving on the operational front.

GDP Growth Rates — CAGR (2010-2029)



*Exc. China & India

Sources: Bombardier market forecasts, Clearwater

New technology aircraft with lower emissions and noise profiles will be able to meet increasingly stringent environmental regulations, such as the Emissions Trading Scheme planned in Europe. Modern aircraft have fuel efficiency of 3.5 litres per 100 passenger kilometers, fly three times farther on the same amount of fuel than they could 30 years ago, and are 20 decibels quieter than they were 40 years ago.

Wealth creation fuels business aircraft demand

Worldwide demand for business jets is highly correlated with wealth creation which, in turn, is largely driven by economic growth. In the World Wealth Report 2010, Merrill Lynch and Cap Gemini estimate the world population of High Net Worth Individuals (HNWIs), i.e. people with financial assets to invest of US\$1 million or more, increasing by 17 percent to 10 million in 2009 from 2008 levels.

Historically, HNWIs and private corporations have accounted for approximately two-thirds of business aircraft sales, and therefore represent a target market. Going forward, thanks to the positive economic outlook wealth creation is expected to accelerate, translating into increased demand for business aircraft; however, the growth rate of demand for business jets might be slower as compared to that for large commercial aircraft and regional jets.



Positive outlook for the airlines

The International Air Transport Association (IATA) has forecast annual profits for the airline industry for the first time since March 2008. The IATA expects the revenues of the global airline industry to increase by around 16 percent in 2010 to US\$560 billion as compared to revenues of US\$483 billion in 2009. Further, airlines the world over are expected to report a combined net profit of around US\$9 billion for

2010 as compared to losses of US\$16 billion and US\$10 billion during 2008 and 2009, respectively. The regional segmentation is in line with GDP growth forecasts and shows airlines of the Asia-Pacific in a much stronger position with 2010 expected net profits of US\$5.2 billion as compared to European airlines, which are expected to show slow recovery and register a net loss of US\$1.3 billion in the same year.

Large-aircraft duopoly facing some competition

The large commercial aircraft (LCA) segment is marked by fierce rivalry between two players, Airbus and Boeing. Currently, Airbus with revenues of US\$36.6 billion in 2009 is the segment leader, but is closely followed by Boeing with revenues of US\$34 billion.

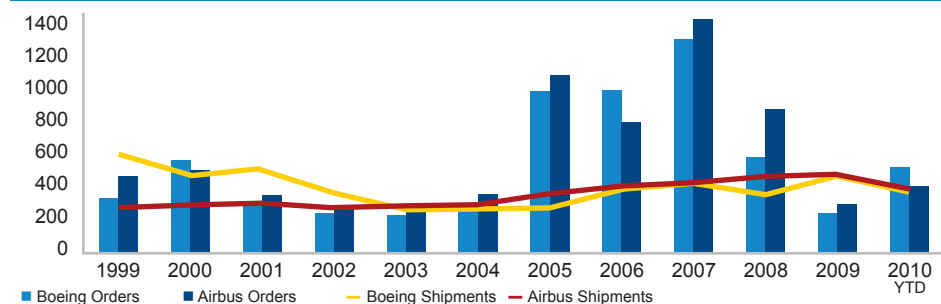
In the longer term, this duopoly may face a challenge as new entrants seek to gnaw away at the market share of established players. The

Russian, Chinese and Japanese offerings may start to erode some market share from the traditional players, especially in home markets. Competition is expected from Bombardier with its 100-seat C Series at the lower end of the segment, as well as from brand new players who concentrate on the sub-100 seat or at the upper end of the high-volume, narrow-body market. However, Boeing and Airbus can produce a replacement aircraft that can counter any long-term threats. This will be possible once sufficient engineering resource becomes available with them, which is likely once current developments on A380 and B787 are accomplished.

2009 was a difficult year for the LCA segment. There was a significant drop in new orders during 2008 and 2009 at both Boeing and Airbus. However, they managed to remain resilient despite the slowdown and maintained their production run rate thanks to the large backlog that had been built up over the years (especially during the robust 2005-07 order cycle).

Going forward, the future for these companies/this sector looks promising. The combined production pipeline for both the companies currently stands at around seven years, considering the total backlog of around 6,825 aircraft and the predicted annual build rate of around 950 aircraft.

Boeing & Airbus — Orders & Delivery Profile



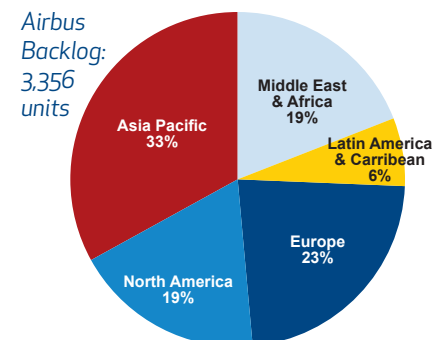
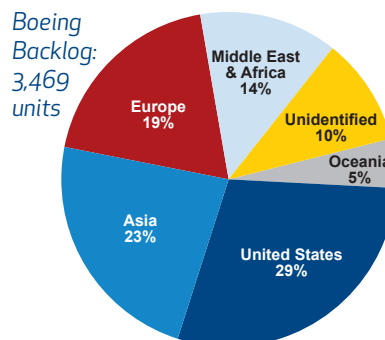
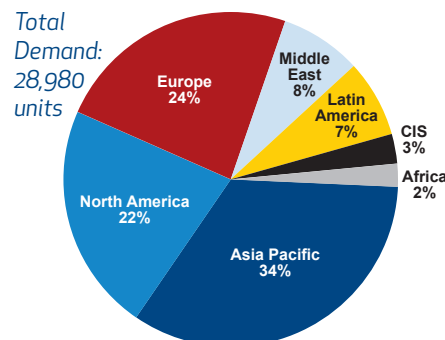
Sources: Boeing, Airbus, Clearwater

Boeing in its 2010-2029 market outlook forecasts demand for 28,980¹ new aircraft valued at around US\$3,530 billion over the next 20 years. This demand is expected to be driven by emerging economies on account of favorable economic conditions, which are expected to increase the number of air traffic passengers. Civil aerospace build rates and revenues ultimately depend on demand for air travel, which is linked to economic growth. In terms of region (by volume), 34 percent of this demand will emanate from the Asia-Pacific, while North America and Europe will contribute 22 percent and 24 percent respectively. Rapidly expanding air service within China and other emerging economies, coupled with the spread of low-cost carrier (LCC) business models throughout the world, is further anticipated to boost this demand.

The above facts also come to light from an analysis of the region-wise breakup of order backlogs of both companies. The balance of backlogs, which once used to be dominated by mature markets such as U.S., has tilted more towards emerging economies that have sustained growth, seen increasing demand for air travel, and translated into orders for new aircraft. On the other hand, North America and Europe will see demand for fuel-efficient aircraft with oil price predicted to average US\$103 per barrel for the next 20 years. Demand will also follow from the need to replace ageing fleets in these markets, once the economy is back on the path of recovery.

¹ Excluding regional jets

Aircraft Demand (2010-2029) and Boeing & Airbus Order Backlog by Region



Sources: Boeing, Airbus, Clearwater



Regional jet manufacturers focusing on larger models

The other important area of commercial aviation is regional jets, which is dominated by Canada's Bombardier and Brazil's Embraer. Regional jets are typically considered to be commercial jet transport aircraft with less than 100 seats. However, this definition is being challenged now as large regional jets such as the Embraer E190 (shown above) and E195 and the Bombardier CS100/300, with a capacity of up to 130 passengers, are inching closer to the smallest product offerings by Boeing and Airbus.

The big demand thrust in the regional jets segment will come from 60-120 seater aircraft category, as they offer greater passenger capacity and lower operating costs per available seat. Presently, 20-59 seaters remain the largest fleet component within the regional jets segment, but going forward demand for these will be very limited with most of demand expected to emerge out of the need to replace obsolescent aircraft. In line with this expectation, both the regional jet manufacturers are focusing on larger aircraft models. Embraer and Bombardier have offerings in 100+ seat category, which has traditionally been dominated by Boeing and Airbus. Embraer E jets series, comprising E170/175/190/195, can carry up to 120 passengers. Similarly, the Bombardier C series, comprising CS100/300, can ferry up to 130 passengers.

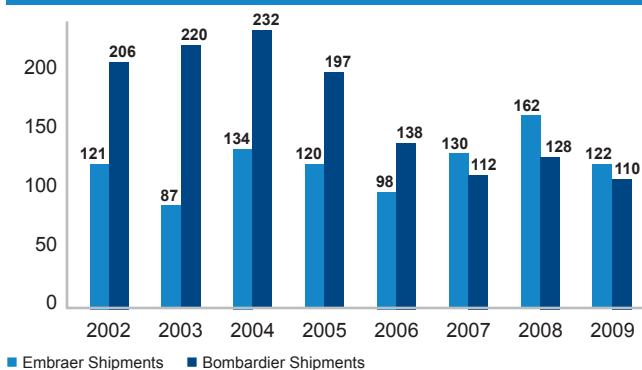
Embraer's backlog profile further substantiates the significant growth that has been taking place in the large regional jets segment. The Embraer E190 jet series, which can seat up to 114 passengers, accounts for 70 percent (185 aircrafts) of the company's total backlog of 265 aircraft at 2009 end.

Further, more competition can be witnessed in this market with regional jet development increasingly becoming global and with new projects coming up in China, Russia and Japan. The Bombardier C Series and Mitsubishi MRJ were launched in 2008 and 2009, and the Sukhoi Superjet 100 and Avic ARJ-21 took off on their maiden flights during this period, dramatically increasing competition in the 80-130-seat market. Sukhoi announced the Superjet 100 to compete in the 100-seat market. But at the same time, orders for both Sukhoi and ARJ-21 have been limited to their home countries or under areas of influence (Eastern Europe in the case of Sukhoi and Asian countries in the case of the ARJ-21), limiting the competitive threat. However, all three aircraft manufacturers will be seeking certification outside of their home markets.

Embraer in its market outlook 2010-2029 forecasts regional jet demand at around 6,875 aircraft for the next 20 years with a value of around US\$200 billion. This comprises demand for 3,495 new aircraft for fleet expansion and 3,380 replacement aircraft. As much as 93 percent (6,400 planes) of this will be for large regional jets, which have a seating capacity in the range of 60-120.

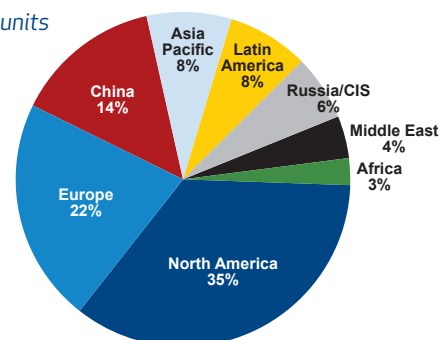
The U.S. usually has been the largest market for regional jet deliveries. North America, with an expected 35 percent share in new deliveries, holds on to its dominant position. But Europe/Russia with 28 percent share and China with 14 percent are expected to be the next big markets in terms of deliveries of regional jets, even though their combined market share will be less than that for North America.

Regional Jet Deliveries



Regional Jet Demand by Geography (2010-2029)

Total: 6,875 units



Grounded by economy, business jet sector is poised for take off

The business jet segment is the most economically sensitive segment in the civil aerospace industry as business jet demand and usage is a function of corporate performance/profitability, which, in turn, is dependent on the economic climate. This segment was therefore the most affected by the recession as compared to the large commercial aircraft and regional jets segments. Recession had a significant impact leading to order cancellations, and a drop in build rates at all major manufacturers.



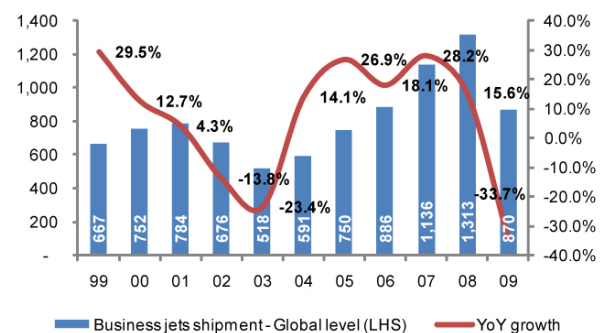
Business jet shipments worldwide declined by around 34 percent to 870 aircraft during 2009 from 1,313 aircraft during 2008. In fact, the business jet industry was so much impacted by the recession that cancellations exceeded gross orders in 2009 and resulted in negative net orders, significantly reducing order backlogs at companies and as a result their aircraft deliveries. The backlogs of business jet manufacturers fell to around 1,300 units by 2009 end from the peak of around 3,000 units in 2008.

The business jets segment includes players such as Cessna, Bombardier, Dassault, Gulfstream, Embraer and Hawker-Beech. Cessna has historically dominated this market with an average 35 percent share of the worldwide business jet shipments from 1999 to 2009. Bombardier is the next big player with an average of 21 percent share in business jet shipments over the same period.

The worldwide business jet fleet comprised 14,200 aircraft at the end of 2009 and is forecast to grow at 3.6 percent CAGR to approximately 29,000 aircraft by 2029. During the period 2000-2009, 6,500 business jets were shipped, with expectation that this number will increase to 10,500 by 2019 and to 15,500 by 2029.

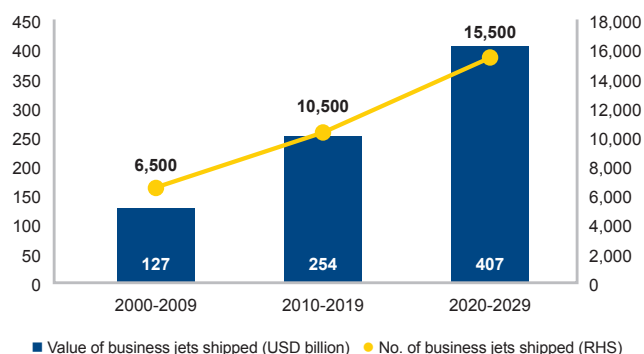
Total shipment in value terms is expected to almost double to US\$254 billion by 2019 as compared to US\$127 billion during 2009. Geographically, North America and Europe are expected to drive demand with North America predicted to account for 42 percent of the total shipments during 2010-2019 followed by Europe with 24 percent share. Also, China and India are expected to drive demand with anticipated requirement of 600 and 325 business jets, respectively, over the same period (2010-2019).

Business Jet Deliveries (no.) and YoY growth (%)



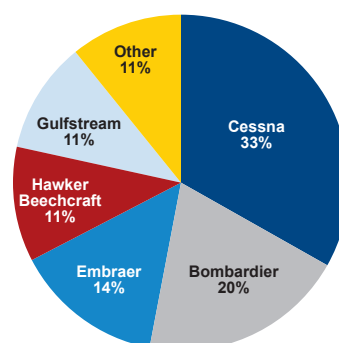
Sources: GAMA, Clearwater

Business Jets — Market Forecasts



Sources: Bombardier, Clearwater

Business Jets Market Share (2009)



Sources: GAMA, Clearwater

Expect sluggish performance for helicopters until 2012

Helicopters play a very important role not only in transportation, but also in construction, fire fighting, search and rescue, and military applications. The recession also dealt a blow to the helicopters segment with segmental growth falling to 7 percent during 2008 and to 5.7 percent in 2009, respectively. Helicopters, as a segment, had clocked double-digit growth during 2007.

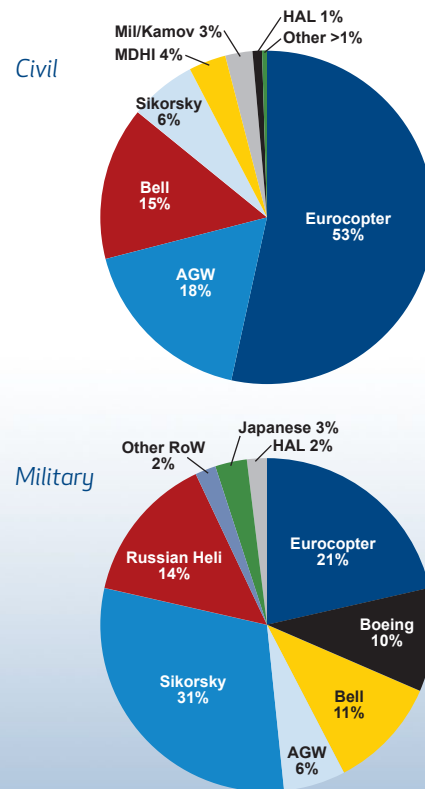
The major players in the helicopter market are Eurocopter, Agusta Westland (AGW), Bell Helicopter, Sikorsky, McDonnell Douglas Helicopter Systems (MDHI), and Boeing Rotorcraft systems. The market for civil helicopters is currently dominated by a couple of firms — Eurocopter and AGW. Eurocopter's civil market share has been relatively stable since 2005 (slightly above 50 percent). On the other hand, the military helicopter market looks quite different with Sikorsky dominating the scene with around 31 percent share followed by Eurocopter with around 21 percent share.

In the civil helicopter market, Europe is the global leader with players such as Eurocopter and Agusta Westland. Eurocopter is the largest European manufacturer of helicopters and a world market leader in the civil category of the sector. Across the world, there are more than 10,000 Eurocopter helicopters operating for about 2,800 customers.

Europe also has been at the forefront in terms of technology. Eurocopter has introduced many new technologies and components in the civil helicopter segment for retaining its market leadership position. Some of these technologies include 100-percent glass cockpits, the bearing-free rotor system, a fully synthetic cabin, "flyby-wire" and "fly-by-light" technology etc.

According to estimates by research firm Frost & Sullivan, the civil helicopter segment is expected to expand from 24,625 units in 2009 to 36,946 units by 2015. Slack demand and lower production levels are expected in 2011 and 2012, but double-digit growth is seen thereafter. It is also foreseen that up to 22 percent of new helicopters will be sold over the next five years to customers based out of Asia Pacific, Africa and the Middle East.

Global Helicopter Market Share (2009)

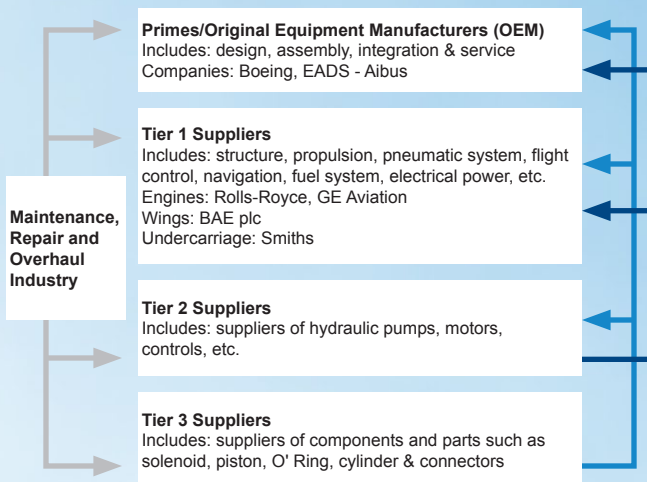


Sources: Eurocopter, Clearwater



Aerospace supply chain — key trends

Typical Aerospace Supply Chain



Aerospace supply chain overview

Aerospace supply chain broadly includes primes/original equipment manufacturers (OEMs), Tier 1 suppliers, Tier 2 suppliers and Tier 3 suppliers. The design, manufacturing and assembly function controlled by primes (e.g. Boeing, EADS), is the most critical component of the value chain and is characterized by stiff entry barriers due to related high cost and technological requirements. Primes are supported by Tier 1 suppliers who are responsible for providing them with equipments and systems such as engines, flight control systems, fuel system etc. Tier 2 suppliers manufacture and develop parts as per the specifications provided by primes and Tier 1 suppliers, while Tier 3 vendors are responsible for supplying basic products and components to vendors that are higher up in the hierarchy.

The Tier 1 supplier's market comprises players such as Rolls-Royce (engines), GE Aviation (engines), and BAE Plc (wings) who generally have exclusive supplier contracts with OEMs. Further, down the pecking order, the industry features numerous small and medium sized firms who support Tier 1 vendors by supplying components and subsystems.

The supply chain gets support from the aftermarket industry (Maintenance, Repair and Overhaul) which handles the maintenance and up-gradation of an aeroplane.

The Tier I & Tier II manufacturers were impacted to a greater extent by the slowdown compared to OEMs, who were saved by the long-term nature of their orders. But the cash position of OEMs was affected due to payment deferrals by customers and widespread cancellation of orders, which, in turn, impacted Tier I and Tier II manufacturers to a large extent.

Key trends

Globalisation of aerospace manufacturing:

Cost reduction, ability to focus on core business, and increased speed to market are the main factors driving the globalisation/outourcing in aerospace sector manufacturing. E.g. EADS sourced aircraft components worth US\$43 billion from across the globe. The company uses European suppliers and does the final assembly in France. Bombardier uses North American suppliers and does the final assembly in Montreal. Increasingly, Boeing and EADS look upon themselves as large-scale system integrators rather than aeroplane manufacturers.

Further, OEM integrators such as Airbus and Boeing are shifting their production to low cost China, India, Malaysia, Singapore and other Asian countries. It is estimated that savings of around 20 to 30 percent can be achieved by companies even after considering the transportation and others costs.

Shift of MRO base from OEMs to suppliers:

As original equipment manufacturers (OEMs) have started to focus more on their core competencies (aircraft overall design, architecture, integration, and final assembly and delivery to end customers), and with technology becoming more complicated, it requires specialized services to manage MRO requests efficiently. Compared to the 1970s-80s, when U.S carriers used to manage more than 80 percent of their aircraft maintenance in-house, the current comparable figure is only around 20 percent.

Also, OEMs are searching for avenues to reduce manufacturing costs by outsourcing more to Tier 1 OEMs; "design to build" packages rather than just "build to print". This passing forward of responsibility to suppliers has reduced procurement costs, with the resultant cost savings invested in new products, services, and capital equipment.

Integration between OEMs and Tier I suppliers:

Airframe manufacturers and Tier 1 suppliers are becoming large scale integrators and co-coordinators of aeroplane production, while aligning themselves to share the associated risk. The aerospace industry is moving towards greater dependence on Tier 1s and increased risk sharing by suppliers. There is more focus on system integration, less internal production capability, and a desire to work with a lesser number of Tier 1 primes. Simultaneously, there has been a significant reduction in dealings with Tier 2 and Tier 3 suppliers. For instance, Embraer had about 350 suppliers for their EMB145 aircraft, of which four were risk sharing. On the other hand, there were 38 suppliers for Embraer's EMB170/190 aircraft, of which 16 were risk sharing. Similarly, Rolls Royce had about 250 suppliers for their Trent 500 engine, which came down to 140 suppliers for the Trent 900, 75 suppliers for the Trent 1000 and it is estimated that there would be only around 25 to 35 suppliers for the engine being developed for the single aisle/narrow body aircraft.

2010 is expected to have posed a challenge for Tier I & II suppliers, as well as for small part manufacturers. This is on account of a huge inventory build-up of small replacement parts with airlines and MROs due to deferred maintenance activities by airlines during the downturn. The value of this inventory is estimated to be around US\$40 billion, which being greater than the world wide MRO expenditure is indicative of a difficult 2010 for Tier I, Tier II and small part suppliers.

Aerospace supply chain components

Manufacturing in the aerospace sector is a complex process and involves production of various components having different technological requirements. It is estimated that airframe and engine together account for around 65 percent of the total production cost of an aircraft, while systems and avionics put together account for another 25 percent. Following are the details relating to major markets and players in these major component categories:

Engine manufacturers

Aircraft manufacturers rely on specialized engine manufacturers for propelling their products. In many cases, this gives airlines an opportunity to choose between two or more engine types, when they buy an aircraft. The engine manufacturing segment can be broken down into three sub-

categories: Turbofan, Turboprop and Turbo shaft. Turbofans are mostly used in commercial and military aircraft; Turboprops are mostly used in business and regional jets while Turboshafts are primarily used in helicopters and some vertical takeoff/landing aircraft.

This segment features high share of MRO as a percentage of total segmental sales. The largest part of revenue and profit margin for engine manufacturers comes from the sale of spare parts, the rent of engines and maintenance activity.

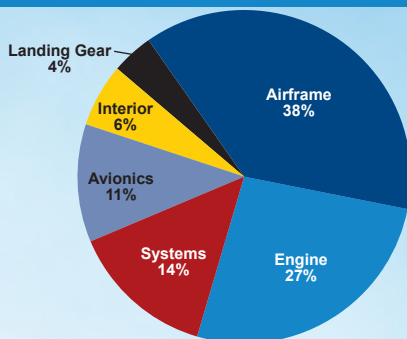
The engine manufacturing market is oligopolistic by nature and is dominated by three major manufacturers: GE Aviation (a subsidiary of General Electric, based in Evendale, Ohio, USA), Pratt & Whitney (P&W, a subsidiary of United Technologies Corporation, UTC, based in Hartford, Connecticut, USA), and Rolls Royce (Derby, UK). Another important engine manufacturer is Snecma (Courcouronnes, France).

This industry also features joint ventures primarily for risk sharing purposes as engine manufacturing requires high-end technological expertise and large upfront investments. For the LCA market, there are two major joint ventures – “International Aero Engines” (P&W: 32.5 percent, Rolls-Royce: 32.5 percent, JAEC: 23 percent and MTU aero engines: 12 percent) and “CFM International”, a 50:50 joint venture between GE and Snecma. CFMI is the world’s market leader in narrow-body aircraft propulsion and produces the CFM56, which for the first 25 years was the only engine for the Boeing 737 family and later for the Airbus A340-200/300 family. In 1996, General Electric and Pratt & Whitney formed another 50/50 joint venture the “Engine Alliance” in order to develop, manufacture, sell and support a family of modern technology engines for new high-capacity, long-range aircraft. This GP7200 engine was originally meant for the Boeing 747-500/600X projects, before these were cancelled due to a lack of demand from airlines. Instead, the engine has been re-optimized for use on the Airbus A380 and is competing with the Rolls-Royce Trent 900, the launch engine for this aircraft.

Apart from the large OEMs and the corresponding joint ventures (with a regional emphasis on the U.S), there are several first and second tier suppliers in the global engine market in Europe such as MTU Aero Engines of Germany, Volvo Aero of Sweden, Avio S.p.A. of Italy, and ITP Engines of the UK.

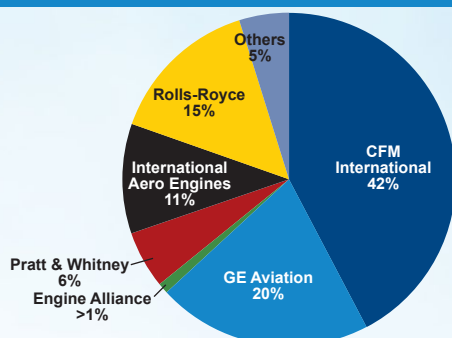


Components value as a % of aircraft value



Sources: Wipro, Clearwater

Engine mfg: Market shares by volume



Sources: EU AI Report, Clearwater

The engine manufacturing outlook seems positive with demand anticipated to be driven by need for greener, more fuel-efficient engines due to the extreme pressure, jet emissions put on the environment. There will arise a demand for 141,000 engines, worth over US\$800 billion, over the next 20 years. Most of this demand is expected to emerge out of the faster growing markets of Asia, the Middle East and Latin America. Mature markets of Europe and North America will also see demand as airlines seek to replace thousands of older aircraft. The after-market and services opportunity created by these deliveries is estimated at around US\$600 billion over their service lives.

Engines delivery summary (2009-2028)

Sector	Units	Value (US\$ bn)
Large Commercial Aircrafts	52,249	631
Regional Aircrafts	14,384	44
Business Jets	72,409	103
Freighters	2,140	44
Total	141,182	822

Sources: Rolls-Royce, Clearwater

Avionics

Avionics/aviation electronics, comprise electronic aircraft systems like fly-by-wire (or even fly-by-light) flight controls, system monitoring, anti-collision systems and pilot assistant/ interface systems like communication, flight management systems, navigation, or weather forecast.

European competencies in avionics include pilot night-vision systems for helicopters, Traffic alert and Collision Avoidance System (TCAS) or the fly by wire technology. Airbus and Eurocopter were first in the world to introduce this technology in civil aircraft and helicopter. Thales, Diehl Aerospace and Liebherr Aerospace are major European suppliers of flight avionics. Rockwell Collins, Honeywell International, L-3 Communications are major players in the global avionics market.

Landing gear

The landing gear market for LCA is a duopoly between Messier-Dowty (a subsidiary of Safran) and Goodrich. Both of them offer a complete range of landing gear and are the principal suppliers to Airbus and Boeing. Liebherr, the third player in the segment, produces landing gear for regional and business jets. In the medium term, Liebherr may penetrate the LCA market, and disturb the prevalent duopoly.

The segment's cooperation with OEMs remains strong since landing gear needs to integrate with the structure of the aircraft. Like the propulsion system, the landing gear also needs maintenance. Services too make up a significant portion of total sales. For instance, services make up 48 percent of landing gear activity for the Safran Group.

Maintenance, repair & overhaul (MRO) industry

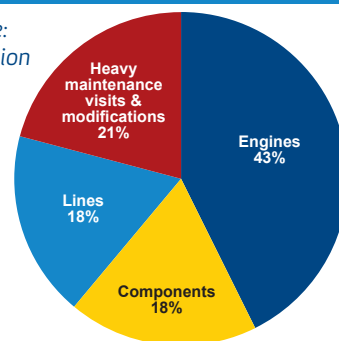
The worldwide airline MRO market valued at US\$45.7 billion (2009) consists primarily of airframe maintenance, engine and component work as well as line maintenance. On an average, the aerospace industry spends more annually on MRO than on manufacturing or development. The greatest share of revenue from MRO is derived from engine maintenance (43 percent of total revenues) followed by heavy maintenance visits and modifications (21 percent of total revenue).

The regional distribution of MRO is similar to that for the global air transport market, with a centre of gravity in North America followed by Western Europe and the emerging Asia-Pacific region. MRO grew strongly in recent years in line with air traffic. But this upswing came to an end in 2008, with business slowing down during fourth quarter of 2008.

The global MRO industry is expected to reach US\$50 billion by 2015 and to US\$65 billion by 2020. This implies 5-year CAGRs of 3.5 percent and 5.3 percent over 2010-2015 and 2015-2020, respectively. The MRO markets of China and India will clock CAGRs of 9.6 percent and 9.4 percent, respectively, over 2010-2020. On the other hand, North American, Western European and African markets are expected to register somewhat slower CAGRs of 1.6 percent, 3.6 percent and 3.5 percent, respectively, over the same period against a global CAGR of 4.4 percent.

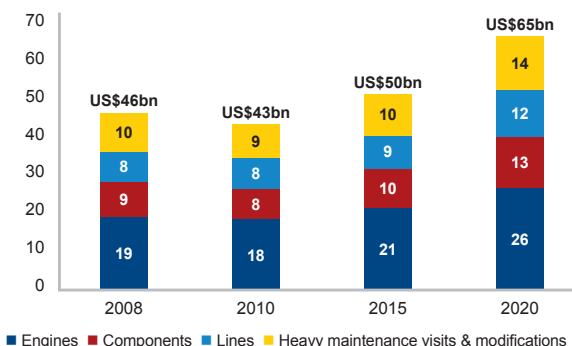
Global MRO Components (2010E)

Total Value:
US\$ 42 Billion



Sources: TeamSAI, Clearwater

Global MRO market size: 2008-2020



Sources: TeamSAI, Clearwater

HOT Niche Focus

Composites

There is a huge potential market for suppliers of composites to the aerospace sector, as demand for more fuel-efficient aircraft grows. It is estimated that demand for composite engine structures during 2007 aggregated about 1.49 million pounds (675.85 metric tonnes), representing a market value of US\$400 million to US\$450 million. This demand is expected to grow at an average annual rate of 7 percent over the next decade, reaching a high of 2.92 million pounds (1324.49 metric tonnes) in 2016.

Aircraft manufacturers are focused on creating fuel-efficient and environment-friendly aircraft. One avenue towards achieving this objective is to develop light-weight aircraft by using new materials and composites as fuel consumption varies inversely with the lift-to-drag ratio of an aircraft at cruise speeds. Lift-to-drag ratios can be improved by making changes in the overall aircraft design. The higher the lift-to-drag ratio of an aircraft, the lesser is the energy needed to keep it aloft.

Aluminum and titanium are traditional aerospace materials, but they also lend more weight to the final product which consequently increases the consumption of fuel. Today, there is increasing use of composite materials to reduce weight and maintenance costs of an airplane. Unlike aluminum, composites are 20 - 35 percent lighter, have a higher strength-to-weight ratio and can be made available in complex shapes associated with modern aircraft. Although composites are relatively more expensive at present, their costs are expected to decline significantly through the automation of manufacturing processes and by achieving economy of scale.

Boeing was the first commercial aircraft manufacturer to design and manufacture 50 percent (by weight) of the airframe structure, including the entire hull of its new B787 Dreamliner, from composite materials compared to the original Boeing 737, only 5 percent of which was constituted from composite material. The use of composites also allows extending the time between heavy maintenance "D-check" intervals by up to 10-12 years, in contrast to the usual six years for planes such as Boeing 767 or Airbus A330.

America's Hexcel is a global leader in advanced structural materials. HITCO Composite Materials (U.S) and Toho Tenax (Japan) are also leading producers of carbon fibre. The only European company making composite materials and having revenues over €1 billion is TenCate (Dutch).

Propulsion

In the propulsion segment the major two competing future concepts are the Geared Turbofan (GTF) and the Open Rotor. GE and Rolls-Royce are pursuing research on open rotor engines with a belief that open rotor technology has the ability to reduce fuel burn by 26 percent over the currently available conventional engines. On the other hand, Pratt &

Whitney is developing the Geared Turbofan (GTF) concept. Both technologies seem to be extremely promising in terms of emission reduction and fuel efficiency, but the GTF concept looks closer to its market launch with GTF (PW1000G) being selected as a power source for Bombardier C-series and Mitsubishi regional jets. The engine, scheduled to enter service in 2013, is expected to provide double-digit improvements in fuel efficiency and emissions with a 50 percent reduction in noise over today's engines. If this engine has successful runs over time, then its larger version can probably be seen as a contender for the Airbus and Boeing narrow body replacements that are still probably on track for the 2020 timeframe.

Fuels

The aerospace industry is exploring possibilities of alternative fuels to decrease vulnerability to oil price variability, reduce general dependency on crude oil and cut down emissions. The fuel crisis in 2008 has shown how sensitive airlines react to rapidly rising fuel prices. The development of sustainable, secure bio-fuels—produced from renewable, abundant biological resources rather than traditional fossil fuels—may reduce the industry's exposure to oil price fluctuations and have far-reaching environmental benefits. Bio-fuels are generally derived from feed stock of one of two key sources, namely, plants with high sugar content (e.g. corn and sugar cane) and plants that are rich in bio-derived oils (e.g. soybeans, algae). Bio-fuels produced from the first source of feed stock, including ethanol, are generally referred to as first-generation bio-fuels and are ill-suited for high-end applications like aviation. On the other hand, second-generation bio-fuels made up of bio-derived oil can be chemically processed to make high-quality jet fuel and diesel.

However, it is expected to take many years, more investment in R&D and scaling up of production and refining capacity before bio-fuels can completely supplant traditional, kerosene-based jet fuel for large scale use in civil aviation. Airlines are also showing signs of commitment for advancing their development in the bio-fuel arena. Nearly 20 major carriers—including several of the US' largest passenger and cargo airlines—have entered into nonbinding purchasing commitments with producers of alternative fuels.

Blended wing body (BWB) — potential new design

The BWB aircraft is another technological advancement leading towards the creation of more fuel-efficient aircraft. One such aircraft is likely to be introduced by an American-led company or consortium. The US air force already operates such an aircraft - Northrop Grumman B2 Bomber and has therefore already developed the required key-technologies like avionics, engine integration and structures. As per NASA and industry studies - the BWB aircraft would consume over 20 percent less fuel than a comparable conventional aircraft and would be lighter, and make less noise. Simultaneously, this aircraft would also emit lesser gases, and cost less to operate, than an equally advanced conventional transport aircraft.

Appendix: Thumbnail Summaries of Top 25 Aerospace Companies¹

1: Boeing

Brief description	From the iconic 747 to the all-new 787 Dreamliner, Boeing delivers a family of technologically advanced and efficient airplanes to customers around the world. It is a leader in providing large-scale systems that combine sophisticated communications networks with air-, land-, sea- and space-based platforms for military, government and commercial customers around the world.					
Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	49,105	49,105	18.0%	1,507	3.1%
Business Segments	Commercial Airplanes (49.9%)	24,488			(419)	-1.7%
	Defence, space & security (49.3%)	24,208			2,373	9.8%
	Other (0.8%)	409			(446)	NA
	2008	41,626		-14.2%	2,699	6.5%
	2007	48,517		-1.1%	4,261	8.8%

2: EADS

Brief description	EADS is a Dutch company that specializes in aerospace, defence and related services. The company operates across four segments. The first segment is Airbus Commercial, which is involved in the development, manufacture, marketing and sale of commercial jet aircraft. The second is Airbus Military for developing, manufacturing, marketing and selling military transport aircraft as well as special mission aircraft. The third segment called Eurocopter develops, markets, maintains and sells civil and military helicopters. The fourth one of Defence and Security develops, markets and sells missiles systems, military combat and training aircraft. EADS is also involved in the provision of defence electronics, training, testing, and engineering services. The Astrium division develops, manufactures, markets and sells satellites, orbital infrastructure and launchers.					
Country	France					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	42,822	42,822	-1.0%	(380)	-0.9%
Business Segments	Airbus - Commercial (60.2%)	25,785			363	1.4%
	Airbus - Military (4.7%)	2,008			(1,756)	-87.5%
	Eurocopter (9.9%)	4,231			262	6.2%
	Defence & Security (11.7%)	5,028			437	8.7%
	Astrium (11.2%)	4,786			257	5.4%
	Other (2.3%)	984			57	NA
	2008	43,265		10.6%	2,772	6.4%
	2007	39,123		-0.8%	(33)	-0.1%

3: Lockheed Martin

Brief description	Lockheed Martin Corporation is a global security company engaged in research, design, development, manufacture, integration, and sustainment of advanced technology systems and products. The company also offers a range of management, engineering, technical, scientific, logistic, and information services. The company operates in four business segments: Aeronautics, Electronic Systems, Information Systems & Global Services, and Space Systems.					
Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	32,498	32,498	11.3%	3,212	9.9%
Business Segments	Aeronautics (27%)	8,774			1,134	12.9%
	Electronic Systems (27%)	8,777			1,147	13.1%
	Information Systems & Global Services (26.8%)	8,723			727	8.3%
	Space Systems (19.2%)	6,224			699	11.2%
	Other				(496)	NA
	2008	29,203		-4.5%	3,507	12.0%
	2007	30,594		-3.1%	3,308	10.8%

¹ Companies are ranked as per their revenues from aerospace sector for the last reported fiscal year. To arrive at company's aerospace revenue we have used the segmental data reported in company's filings/annual reports. All the numbers reported in this section are in € millions. For the companies having reporting in currency other than €, we have used average annual exchange rate to convert the figures in €.

4: General Dynamics

Brief description	General Dynamics Corporation offers a portfolio of products and services in business aviation, combat vehicles, weapons systems & munitions; shipbuilding design & construction, and information systems, technologies & services. General Dynamics operates through four business groups: Aerospace, Combat Systems, Marine Systems, and Information Systems and Technology. The Company's main customers are the United States Department of Defence and the intelligence community.					
Country	United States					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	22,999	22,999	14.9%	2,643	11.5%
	Aerospace (16.2%)	3,719			508	13.7%
	Combat Systems (30.2%)	6,936			908	13.1%
	Marine Systems (19.9%)	4,576			462	10.1%
	Information Systems & Technology (33.8%)	7,768			828	10.7%
	Corporate				(63)	
	2008	20,024		0.6%	2,496	12.5%
	2007	19,908		3.8%	2,275	11.4%

5: Northrop Grumman

Brief description	Northrop Grumman is an integrated enterprise consisting of businesses that cover the entire security spectrum, from undersea to outer space and into cyberspace. The company operates in five segments: Aerospace Systems, Electronic Systems, Information Systems, Shipbuilding and Technical Services.					
Country	United States					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	24,275	19,202	9.9%	1,786	7.4%
	Aerospace Systems (30.9%)	7,493		79.1%	770	10.3%
	Electronic Systems (22.7%)	5,517		81.6%	697	12.6%
	Information Systems (25.5%)	6,193		2.5%	454	7.3%
	Shipbuilding (18.4%)	4,468			215	4.8%
	Technical Services (8.2%)	1,996			116	5.8%
	Other (-5.7%)	(1,392)			(466)	NA
	2008	22,084		-0.4%	(180)	-0.8%
	2007	22,174		-7.2%	2,138	9.6%

6: Raytheon

Brief description	Raytheon Company, together with its subsidiaries, develops products, services and solutions in defence markets; sensing, effects, command, control, communications and intelligence (C3I), and mission support, as well as the cybersecurity and homeland security markets. The company serves both domestic and international customers, principally as a prime contractor on a portfolio of defence and related programs for government customers. It operates in six business segments Integrated Defence Systems (IDS), Intelligence and Information Systems (IIS), Missile Systems (MS), Network Centric Systems (NCS), Space and Airborne Systems (SAS) and Technical Services (TS).					
Country	United States					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	17,893	17,893	13.0%	2,188	12.2%
	Integrated Defence Systems (22.2%)	3,973		22.2%	618	15.5%
	Intelligence & Information Systems (12.9%)	2,304		12.9%	186	8.1%
	Missile Systems (22.4%)	3,999		22.4%	434	10.9%
	Network Centric Systems (19.4%)	3,468		19.4%	485	14.0%
	Space & Airborne Systems (18.4%)	3,295		18.4%	465	14.1%
	Technical Services (12.7%)	2,273		12.7%	155	6.8%
	Others (-7.9%)	(1,420)		-7.9%	(155)	NA
	2008	15,837		1.7%	1,791	11.3%
	2007	15,567		-0.9%	1,720	11.1%

7: United Technologies

Brief description

United Technologies Corp. provides high-end technology products and services to the building systems and aerospace industries. This company operates in six segments: Otis, Carrier, UTC, Fire & Security, Pratt & Whitney, Hamilton Sundstrand and Sikorsky. Otis offers elevators, escalators and coastal traffic management systems. Carrier offers elevators, escalators, moving walkways and services, heating, ventilating and air conditioning and refrigeration systems, equipment, and food service equipment. UTC Fire & Security offers fire and special hazard detection, suppression systems and firefighting equipment, security, monitoring and rapid response systems and service and security personnel services. Pratt & Whitney offers commercial, military, business jet and general aviation aircraft engines, parts and services, industrial gas turbines, geothermal power systems and space propulsion, while Hamilton Sundstrand offers aerospace products and after-market services. Sikorsky, in turn, offers military and commercial helicopters, after-market helicopter and aircraft parts.

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	38,058	17,615	-6.8%	4,649	12.2%
	Otis (22.3%)	8,471			1,760	20.8%
	Carrier (21.6%)	8,208			532	6.5%
	UTC Fire & Security (10.5%)	3,978			355	8.9%
	Pratt & Whitney - Engines (23.8%)	9,045			1,320	14.6%
	Hamilton Sundstrand (10.6%)	4,027			616	15.3%
	Sikorsky - Helicopters (11.9%)	4,544			437	9.6%
	Other (-0.6%)	(214)			(370)	NA
	2008	40,839		0.3%	5,211	12.8%
	2007	40,718		6.8%	5,152	12.7%

8: BAE Systems

Brief description

BAE Systems Plc delivers a range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support services. The company has five segments: Electronics, Intelligence & Support, Land & Armaments, Programmes & Support, International and HQ & Other Businesses.

Country	United Kingdom					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	22,415	16,188	20.9%	982	4.4%
	Electronics, Intelligence & Support (25.1%)	5,637			742	13.2%
	Land & Armaments (30.1%)	6,738			(441)	-6.5%
	Programmes & Support (28.1%)	6,298			655	10.4%
	International (19%)	4,253			406	9.5%
	HQ & Other businesses (1.1%)	254			(350)	NA
	Others (-3.4%)	(765)			(30)	NA
	2008	18,543		18.0%	1,718	9.3%
	2007	15,710		14.1%	1,177	7.5%

9: Finmeccanica

Brief description

Based in Italy, Finmeccanica is a holding company for manufacturing products that find application in fields as diverse as civil and defence aviation, satellites, space research, energy, telephony and energy. In addition to manufacturing helicopters for military and civil use, the company makes air, airport and coastal traffic management systems. Under the aeronautics segment, the company makes tactical airlifters, combat aircraft and air vehicles for both civil and military applications in addition to developing and positioning telecommunications as part of its space business. Apart from this, Finmeccanica produces defence systems and offers systems for power generation and dabbles in the transportation solutions arena and other activities like satellite telephony and investment services.

Country	Italy					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	18,176	14,943	20.9%	1,392	7.7%
	Aeronautics (14.5%)	2,641			240	9.1%
	Space (5%)	909			43	4.7%
	Helicopters (19.1%)	3,480			364	10.5%
	Defence & Security Electronics (37%)	6,718			615	9.2%
	Defence Systems (6.6%)	1,195			124	10.4%
	Energy (9.1%)	1,652			142	8.6%
	Transportation (10%)	1,811			-9	-0.5%
	Other (-1.3%)	(230)			(127)	NA
	2008	15,037		12.0%	1,210	8.01%
	2007	13,429		7.7%	1,084	8.1%

10: General Electric Company

Brief description General Electric Company (GE) is a diversified technology, media and financial services company. The company's products and services include aircraft engines, power generation, water processing, security technology, medical imaging, business and consumer financing, media content and industrial products. GE serves customers in more than 100 countries. The company operates through five segments: Energy Infrastructure, Technology Infrastructure, NBC Universal (NBCU), Capital Finance and Consumer & Industrial.

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	112,752	13,468	-9.6%	7,439	6.6%
	Aviation - Engines (11.9%)	13,468				
	Energy infrastructure (15.1%)	26,705				
	Technology infrastructure (15.1%)	17,077				
Business Segments	NBC Universal (9.8%)	11,101				
	Capital Finance (32.3%)	36,405				
	Consumer & Industrial (60.2%)	6,978				
	Other (0.9%)	1,017				
	2008	124,733		-1.1%	13,519	10.8%
	2007	126,058		4.3%	20,118	16.0%

11: L-3 Communications

Brief description L-3 Communications is a prime system contractor in aircraft modernization and maintenance, command, control, communications, intelligence, surveillance and reconnaissance (C3ISR) systems, and government services. L-3 is also a provider of technology products, subsystems and systems. The Company has four segments: C3ISR, Government services, aircraft modernization and maintenance (AM&M), and Electronic systems. The C3ISR segment provides products and services for the global intelligence, surveillance and reconnaissance (ISR) market. The Government services segment provide a range of engineering, technical, information technology (IT), advisory, training and support services. The aircraft modernization and maintenance segment provide modernization, upgrades and sustainment, maintenance and logistics support services. The electronic systems segment provides a range of products, including components, products, subsystems, systems and related services

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	11,230	11,230	10.3%	1,191	10.6%
	C3ISR (20.3%)	2,281			247	10.8%
	Government services (27.2%)	3,052			286	9.4%
Business Segments	Aircraft modernization & maint.(18.8%)	2,116			175	8.3%
	Electronic systems (37%)	4,152			483	11.6%
	Other (-3.3%)	(373)			-	NA
	2008	10,183		-0.2%	1,152	11.3%
	2007	10,203		2.6%	1,058	10.4%

12: Safran

Brief description Safran SA is a France-based high-technology company, which operates through its four divisions. The Aerospace and Spatial Propulsion division provides engines, turbines and parts for aircraft, helicopters, missiles and rocket boosters for civil, military and spatial markets through several subsidiaries, including Snecma, Turbomeca and others. The Aeronautic Equipment division produces mechanical, hydro-mechanical and electro-mechanical equipment for the aeronautics industry through its subsidiaries, including Messier-Dowty International Ltd and Aircelle. The Defence division offers solutions and services, such as avionics and navigation equipment, optronic systems, as well as electronic solutions and critical software for civil and defence markets. The Security division consists of detection systems, identification systems, control and security solutions, biometric identification systems, bank cards and secure transaction solutions.

Country	France					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	10,448	10,448	1.2%	2,142	9.6%
	Aerospace propulsion (54.3%)	5,673				
	Aircraft equipment (26.5%)	2,767				
Business Segments	Defence (10.2%)	1,061				
	Security (8.7%)	904				
	Other (0.4%)	43				
	2008	10,329		-1.2%	2,611	10.5%
	2007	10,222		1.1%	2,439	9.6%

13: Honeywell International

Brief description	Honeywell International Inc. (Honeywell) is a diversified technology and manufacturing company, serving customers globally with aerospace products and services, control, sensing and security technologies for buildings, homes and industry, turbochargers, automotive products, specialty chemicals, electronic and advanced materials, process technology for refining and petrochemicals, and energy efficient products and solutions for homes, business and transportation. The company operates in four business segments: aerospace, automation and control solutions, specialty materials and transportation systems.					
Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	22,228	7,740	-11.0%	2,142	9.6%
	Aerospace (34.8%)	7,740				
	Automation and control solutions (40.8%)	9,069				
Business Segments	Specialty materials (13.4%)	2,980				
	Transportation systems (11%)	2,437				
	Other	1				
	2008	24,983		-1.2%	2,611	10.5%
	2007	25,278		1.1%	2,439	9.6%

14: Thales

Brief description	Thales is a France-based electronics company providing services for the aerospace, defence and security markets worldwide. The company operates through its divisions, including Aerospace, specialized in onboard equipment, electronics and systems for the civil and military markets; Space, offering solutions combining space and terrestrial technologies; Air Systems, engaged in the design and delivery of airspace safety and security solutions; Land & Joint Systems, providing services for land forces; Naval, which supplies equipment and systems for surface combatants and submarines and acts as a systems integrator, and Security Solutions and Services, providing mission-critical information systems for safety and security markets.					
Country	France					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	12,881	7,048	1.7%	151	1.2%
	Aerospace & Space (31.6%)	4,071			(310)	-7.6%
Business Segments	Defence (44.7%)	5,763			544	9.4%
	Security (23.1%)	2,977			(11)	-0.4%
	Other (0.5%)	70			(73)	NA
	2008	12,665		3.0%	877	6.9%
	2007	12,296		19.8%	858	7.0%

15: Bombardier

Brief description	Bombardier Inc is a manufacturer of transportation equipment, including business and commercial aircraft and rail transportation equipment and systems, while simultaneously providing related services. The company operates in two segments: aerospace (through BA) and rail transportation (through BT). BA designs and manufactures aviation products while providing related services. BT designs and manufactures rail equipment and system while offering associated services. BT also provides bogies, electric propulsion, control equipment and maintenance services, in addition to offering complete rail transportation systems and rail control solutions. BA's aircraft portfolio includes a series of business and commercial aircraft such as regional jets, turboprops and single-aisle mainline jets and amphibious aircraft.					
Country	Canada					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2010	13,927	6,729	3.3%	790	5.7%
	Aerospace (44.3%)	6,729			340	5.1%
Business Segments	Rail transportation (51.7%)	7,198			449	6.2%
	2009	13,478		5.3%	977	7.2%
	2008	12,794		7.9%	547	4.3%

16: Rolls Royce Group plc

Brief description	Rolls Royce Group Plc is an integrated power systems company, operating in civil and defence aerospace, marine and energy markets. The four segments in which the company is active are civil aerospace, defence aerospace, marine and energy. It is a global provider of defence aero-engine products and services with 18,000 engines in service for 160 customers in 103 countries. Rolls Royce's marine business has more than 2,000 customers and equipment installed on over 30,000 vessels worldwide, including those of 70 navies. The company's energy business is a supplier of power systems for onshore and offshore oil and gas applications.					
Country	United Kingdom					

continued on next page

16: Rolls Royce Group plc — continued

	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	10,108	6,491	10.5%	942	9.3%
	Civil aerospace (44.3%)	4,481			409	9.1%
	Defence aerospace (19.9%)	2,010			247	12.3%
	Marine (25.6%)	2,589			263	10.02%
	Energy (10.2%)	1,028			23	2.2%
	2008	9,147		17.0%	855	9.3%
	2007	7,817		6.3%	832	10.6%

17:Textron

Brief description

Textron Inc. is a multi-industry company with a global network of aircraft, defence, industrial and finance businesses to provide products and services worldwide. The company operates through four manufacturing segments and one financing segment. The four manufacturing segments are Cessna, Bell, Textron Systems and Industrial. Cessna, in turn, has five major businesses, which comprise Citation business jets, Caravan single-engine utility turboprops, Cessna single-engine piston aircraft, after-market services and lift- solutions by CitationAir. Textron Systems provides products to the defence, aerospace and general aviation markets.

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	7,551	5,797	-21.1%	342	4.5%
	Cessna (31.6%)	2,388			142	6.0%
	Bell (27.1%)	2,044			219	10.7%
	Textron Systems (18.1%)	1,366			173	12.6%
	Industrial (19.8%)	1,494			19	1.3%
	Finance (3.4%)	260			(211)	-81.4%
	2008	9,575		5.7%	992	10.4%
	2007	9,059		6.2%	1,153	12.7%

18: Goodrich

Brief description

Goodrich Corporation (Goodrich) supplies aerospace components, systems and services to the commercial and general airplane markets. It is also a supplier of systems and products to the global defence and space markets. Its products and services are principally sold to customers in North America, Europe and Asia. The company has three segments: Actuation and Landing Systems, Nacelles and Interior Systems and Electronic Systems. Its products include nacelles, actuation systems, landing gear, aircraft wheels and brakes, intelligence surveillance and reconnaissance systems, sensor systems and power systems.

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	4,808	4,808	-0.4%	668	13.9%
	Actuation & landing systems (37.8%)	1,815			192	10.6%
	Nacelles & interior systems (34.7%)	1,670			371	22.2%
	Electronic systems (27.5%)	1,322			199	15.0%
	Other	-			(93)	NA
	2008	4,826		3.3%	752	15.6%
	2007	4,672		2.5%	644	13.8%

19: ITT

Brief description

ITT Corporation (ITT) is a global engineering and manufacturing company. It designs, manufactures and sales a range of engineered products. The company operates in three business segments: Defence Electronics & Services (Defence segment), Fluid Technology (Fluid segment), and Motion & Flow Control (Motion & Flow segment).

Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
Business Segments	2009	7,842	4,528	-1.9%	654	8.3%
	Defence (57.7%)	4,528			558	12.3%
	Fluid (30.8%)	2,419			283	11.7%
	Motion & Flow (11.5%)	901			85	9.4%
	Other (-0.1%)	(6)			(272)	NA
	2008	7,992		21.5%	827	10.3%
	2007	6,580		-15.7%	714	10.9%

20: Embraer

Brief description	Embraer manufactures commercial and defence aircraft. The company also has a string of executive jets based on one of its regional jet platforms and has launched new executive jets in the entry-level, light, ultra-large and mid-light/mid-size categories, namely, the Phenom 100/300 family, the Lineage 1000 and the Legacy 450/500 family, respectively					
Country	Brazil					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	3,931	3,931	-9.2%	241	6.1%
	Commercial aviation (61.6%)	2,422				
	Executive aviation (16.4%)	645				
Business Segments	Aviation services (10.8%)	423				
	Defence (9.1%)	359				
	Others (2.1%)	83				
	2008	4,329		12.9%	367	8.5%
	2007	3,833		27.9%	273	7.1%

21: Mitsubishi Heavy Industries

Brief description	Mitsubishi Heavy Industries, Ltd. is a Japan-based manufacturer. It has six divisions. The Marine Vessel and Ocean division's core products include oil tankers, container ships, passenger ships, car ferries and liquefied petroleum gas (LPG) ships. The Power Engine division's main products include boilers, turbines, windmills, diesel engines, nuclear equipment, seawater desalination equipment and pumps. The Machinery and Iron Structure division's major products include exhaust fume treatment equipment, waste treatment systems, traffic systems, cranes, bridges, chimney pipes and tanks. The Aviation and Space division's main products include helicopters, space equipment, aircrafts and torpedoes. The Medium-size Product division's core products include forklifts, construction machinery, engines, tractors and agricultural machinery. The Others division specializes in the purchase and sale of real estate, as well as the provision of printing, leasing and information-related services					
Country	Japan					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2011	22,439	3,817	-6.4%	501	2.2%
	Power systems (36.3%)	8,134			630	7.7%
	Machinery & steel structures (21.3%)	4,774			23	0.5%
	Aerospace (17%)	3,817			(49)	-1.3%
Business Segments	Shipbuilding & ocean development (7.8%)	1,759			111	6.3%
	General machinery & special vehicles (9.8%)	2,188			(177)	-8.1%
	Air-conditioning & refrigeration systems (4.7%)	1,048			(76)	-7.2%
	Machine tool, others (5%)	1,120			39	3.5%
	Other (-1.8%)	(406)			-	NA
	2009	23,967		20.9%	752	3.1%
	2008	19,827		-3.3%	842	4.2%

22: Harris Corporation

Brief description	Harris Corporation (Harris), together with its subsidiaries, is an international communications and information technology company serving government and commercial markets in more than 150 countries. The company operates in three segments: RF Communications segment, Government Communications Systems segment and Broadcast Communications segment. Its RF Communications segment consists of its tactical radio communications and public safety and professional communications businesses. Its Government Communications Systems segment consists of its defence programs, national intelligence programs, civil programs and information technology (it) services businesses. Its Broadcast Communications segment consists of its workflow, infrastructure and networking solutions, media and transmission systems businesses.					
Country	United States					
	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2010	3,787	3,459	2.6%	611	16.1%
	RF communications (39.7%)	1,504			515	34.2%
Business Segments	Government communications systems (51.6%)	1,955			245	12.5%
	Broadcast communications (9.3%)	354			(22)	-6.3%
	Other (-0.7%)	(26)			(126)	NA
	2009	3,692		19.2%	358	9.7%
	2010	3,097		8.8%	450	14.5%

23: Dassault Aviation

Brief description	Dassault Aviation SA is a France-based company that operates in the global civil and military aviation industry. The company specializes in the design, manufacture and sale of combat aircraft and executive jets. Its portfolio of products includes Falcon family for the civil aviation market, as well as Mirage 2000 and Rafale aircraft for the military sector. In addition, Dassault Aviation SA offers spare parts, tools and a range of services, such as technical support, maintenance and repair of airframe equipment and parts, among others.					
Country	France					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	3,421	3,421	-8.7%	393	11.5%
	Defence (28.7%)	981		28.7%		
	Falcon - Executive jets (71.3%)	2,440		71.3%		
	2008	3,748		-8.2%	446	11.9%
	2007	4,085		23.7%	504	12.3%

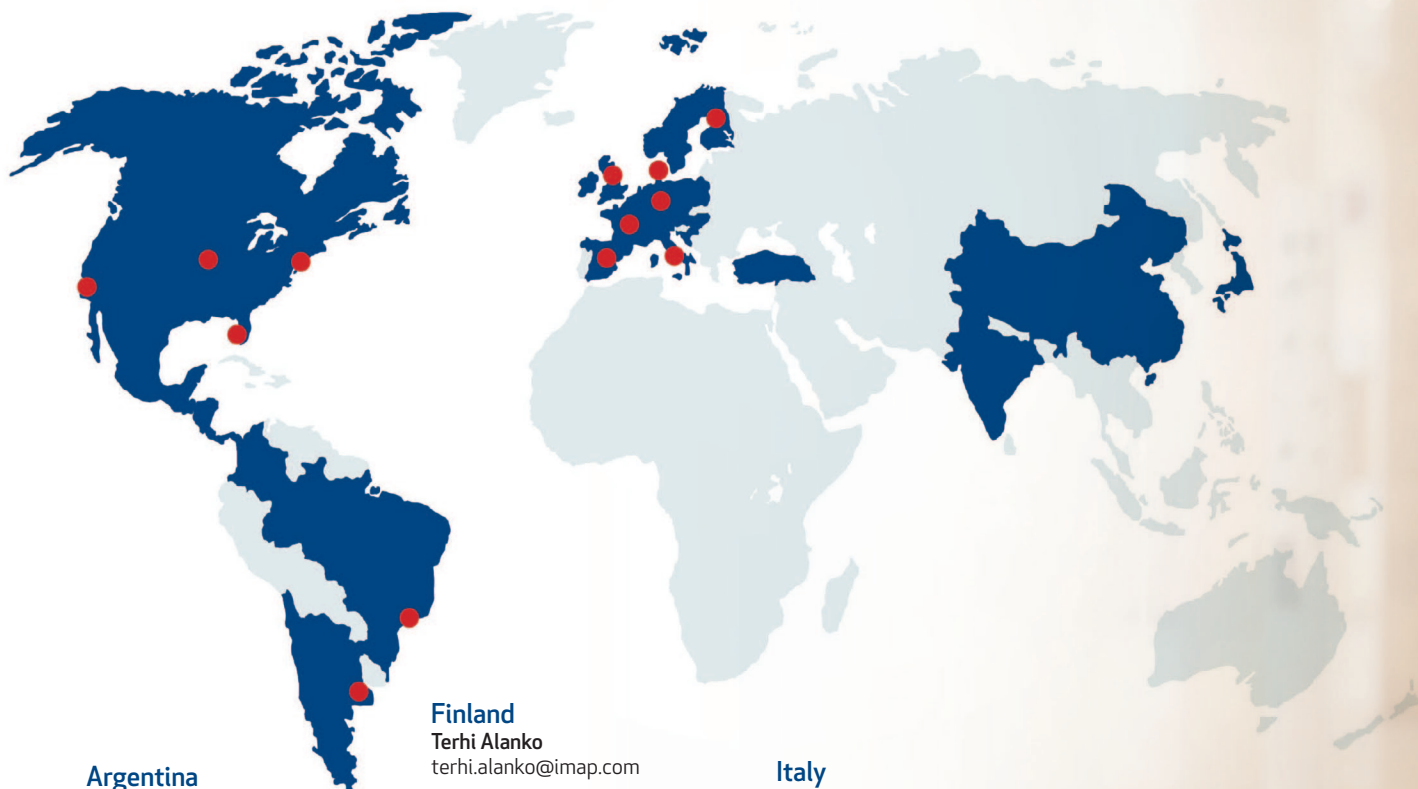
24: Alliant Techsystems Inc.

Brief description	Alliant Techsystems Inc. is an aerospace and defence company. ATK is a producer of military small-caliber ammunition for use in soldier-carried weapons, such as automatic and semi-automatic rifles, and machine guns. It is also one of the producers of military large-caliber ammunition used by tanks. ATK is the manufacturer of solid rocket motors. The company produces other large solid rocket motors used to launch, or help launch, a variety of strategic missiles, and launch vehicles for satellite insertions.					
Country	United States					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2010	3,406	3,406	5.1%	363	10.7%
	Armament systems	1,534			182	11.9%
	Mission systems	899			97	10.8%
	Space systems	973			98	10.0%
	Other	-			(14)	NA
	2009	3,242		9.9%	272	8.4%
	2008	2,950	6.1%	304	10.3%	

25: Spirit Aero Systems Holding

Brief description	Spirit AeroSystems Holdings, Inc. (Holdings) is an independent non-OEM (original equipment manufacturer) aircraft parts designer and manufacturer of commercial aero structures to Boeing. In addition, the company is a supplier of aero structures to Airbus. The company manufactures aero structures for every Boeing commercial aircraft in production, including the airframe content for the Boeing B737. The company operates in three segments: Fuselage Systems, Propulsion Systems and Wing Systems.					
Country	United States					
Business Segments	Year/Business Segments	Revenues	Aero Revenue	Revenue Growth	Operating Profit	Operating Margin
	2009	2,933	2,933	13.8%	218	7.4%
	Fuselage systems (49.1%)	1,441			207	14.4%
	Propulsion systems (25.3%)	741			88	11.9%
	Wing systems (25.1%)	737			15	2.0%
	Other (0.5%)	15			(92)	NA
	2008	2,578		-8.6%	277	10.8%
	2007	2,822		10.4%	306	10.9%

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