

Industrial Products  
Aerospace & Defence



# A&D Insights

Accelerating global growth

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## Methodology

As part of this report, PricewaterhouseCoopers interviewed fifteen Chief Executive Officers and other senior executives from aerospace and defence companies based in Canada, France, Germany, India, the Middle East, the United Kingdom and the United States. The combined sales revenue of these companies exceeded US\$167 billion in 2008. The interviews took place in person between October 2009 and February 2010. Questions focused on the drivers and benefits of globalisation, the challenges and risks of globalisation, investment priorities and the pace of globalisation. The results of the interviews are supported by additional proprietary research as well as analysis of publicly available information from Boeing, Airbus, *Flight International*, the Stockholm International Peace Research Institute, the Organisation for Economic Co-operation and Development, the World Economic Forum and Thompson Financial.



**Neil Hampson**  
Global Aerospace &  
Defence Leader

Over recent years the subject of globalisation, its drivers and its implications has moved to the top of the agenda of senior executives in most industries. Our clients frequently ask our views on how industries are globalising and how their organisations can benefit from the increasing pace of change in an increasingly complex landscape.

Within the aerospace and defence (A&D) industry, our clients see globalisation and its direct impacts as the major driver of change in the industry, both now and in the coming decades: the emergence of new high growth markets, the opportunities a broader supply chain offers and the benefits of accessing a wider talent pool. Similarly, they recognise that globalisation will bring new competitors and new complexities in managing their businesses. It is in this context that PricewaterhouseCoopers recently conducted its first series of interviews with CEOs and senior executives in the industry. We interviewed 15 executives from leading companies and organisations around the world. The objective was to learn, first-hand, more about the benefits and challenges of expanding into new international markets and the investments and decisions companies are making to overcome those challenges.

Globalisation is often viewed as the rise of “new economies”, but prior to the Industrial Revolution, China and India represented half the world’s GDP. The clear fact is that, during the remainder of this century, the pace of economic growth will shift decisively back to these countries as well as those elsewhere in

Asia and the Middle East. At a fundamental level, economic growth directly benefits A&D as increased wealth leads directly to increased air travel by citizens and to increased defence spending by governments.

But unlike previous decades, our interviews have revealed that this new wealth is redefining “purchasing power” as governments and private sector companies in emerging markets seek to participate much more directly in the A&D industry. This provides a paradox for leading A&D companies, the need to access new markets and new sources of supply, while recognising that they are creating the competitors of tomorrow.

Our report discusses these issues and focuses on addressing the key globalisation concerns highlighted by the executives—how to manage increased financial and operational risk; how to control intellectual property; how to manage complexity; and how to manage a global organisation comprised of local cultures. This will require new management and organisation structures, led by more internationally experienced executives.

The next decade will bring profound change to the A&D industry and will define the winners and losers for a much longer period. Accelerating global growth will bring real benefits to those willing to take on the challenges.

# 02 The need for speed

Most industries are globalising at increasing speed. Aerospace and defence is no exception. For most aerospace and defence companies, the customer base, sources of production, and research and development (R&D) are already international. Operations and the supply chain, however, remain less global than in other high technology industries.

The A&D executives we interviewed agree that a number of common challenges are slowing expansion into international markets. These include the following:

- The management of expanding offset requirements,
- Increases in financial risk,
- Different interpretations of business ethics across cultures,
- The cost and complexity of export control compliance, and
- The potential loss of intellectual property (IP).

There are strategies for overcoming these challenges. Broadly speaking, our interviewees identified a need to adjust leadership tactics and risk management in response both to the risks and the overwhelmingly positive benefits of globalisation. Programme management best practices, for example, should be applied to the evaluation and delivery of offsets. Another example is the frameworks and controls established for compliance with US Sarbanes-Oxley legislation, which can be re-purposed for export regulations.

The leading aerospace and defence companies of the future will understand and overcome the barriers identified in our interviews. They will lead in export markets outside North America and the EU, where the majority of industry growth will occur. They will also become more efficient and gain better access to technology and people. The end result will be global organisations that match the needs of global growth markets.

Globalisation: The growing interdependence of countries worldwide, through the increasing volume and variety of cross-border transactions in goods and services, of international capital and also through the more rapid and widespread use of technology.

Drivers	Effects
<ul style="list-style-type: none"><li>• Decline in political and economic barriers to trade</li><li>• Growth in foreign direct investment (FDI)</li><li>• Improvements in electronics/computing technology and telecommunications</li><li>• Improvements in transportation</li></ul>	<ul style="list-style-type: none"><li>• Creation of a global labour force</li><li>• Globalisation of financial markets</li><li>• Globalisation of production – lower prices, higher quality</li><li>• Creation of free trade areas/trade blocs (EU, NAFTA, ASEAN)</li><li>• Evolution of global companies</li><li>• Mixing and convergence of cultural values</li><li>• Challenges to national sovereignty in trade</li></ul>

# The search for opportunities abroad 03

PricewaterhouseCoopers interviewed executives at fifteen leading aerospace and defence companies about globalisation. Their businesses varied widely in size, as did their positions in the supply chain. All agreed about the most important factor driving globalisation in aerospace and defence—the rapid growth of markets outside North America and Europe.

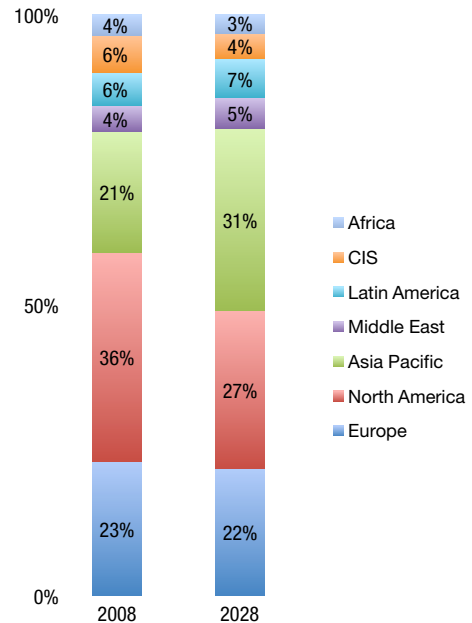
These markets offer new customers, lower costs and access to talent—all of which are in short supply in developed markets. To realise these benefits, companies are negotiating with governments whose growing economic power is providing increasing leverage to secure higher-value industrial offsets.

## New sources of sales growth

Aerospace and defence companies are investing in new markets to pursue the customers and relationships that will help drive sales growth over at least the next 20 years. In some long-lived programmes, the sales generated by the operations and sustainment of products may extend the project life to 40 years or more. “Who would have thought 20 years ago that we would be able to sell aerostructure products to China, the Soviet Union and other countries that were closed markets?” notes Gille Labbé, President and Chief Executive Officer, Héroux-Devtek. “This has changed the world tremendously.”

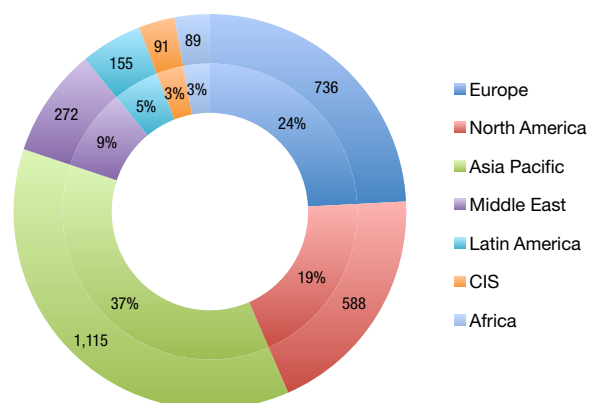
Nowhere is the globalisation of the customer base more noticeable than in the commercial aerospace industry. By 2028, regions outside Europe and North America are expected to own about half the commercial aircraft in service. According to India’s Civil Aviation Minister Praful Patel, “...within a span of five years [India] will be breaking into the top five aviation markets in the world.”<sup>1</sup> Led by India and China, the Asia-Pacific market is projected to grow more than 70 per cent, making it the largest market in the world for new aircraft.<sup>2</sup>

Share of global fleet in operation



Source: Boeing, PricewaterhouseCoopers

Value of new aircraft deliveries 2009-2028 (2008 US\$ Billions)



Source: Boeing, Airbus, PricewaterhouseCoopers

<sup>1</sup> Aziz Haniffa, “India to be among top 5 aviation markets: Praful Patel,” Rediff.com, 26 March 2010

<sup>2</sup> Boeing, *Current Market Outlook 2009 – 2028* and Airbus, *Flying smart, thinking big: Global Market Forecast 2009 – 2028*.

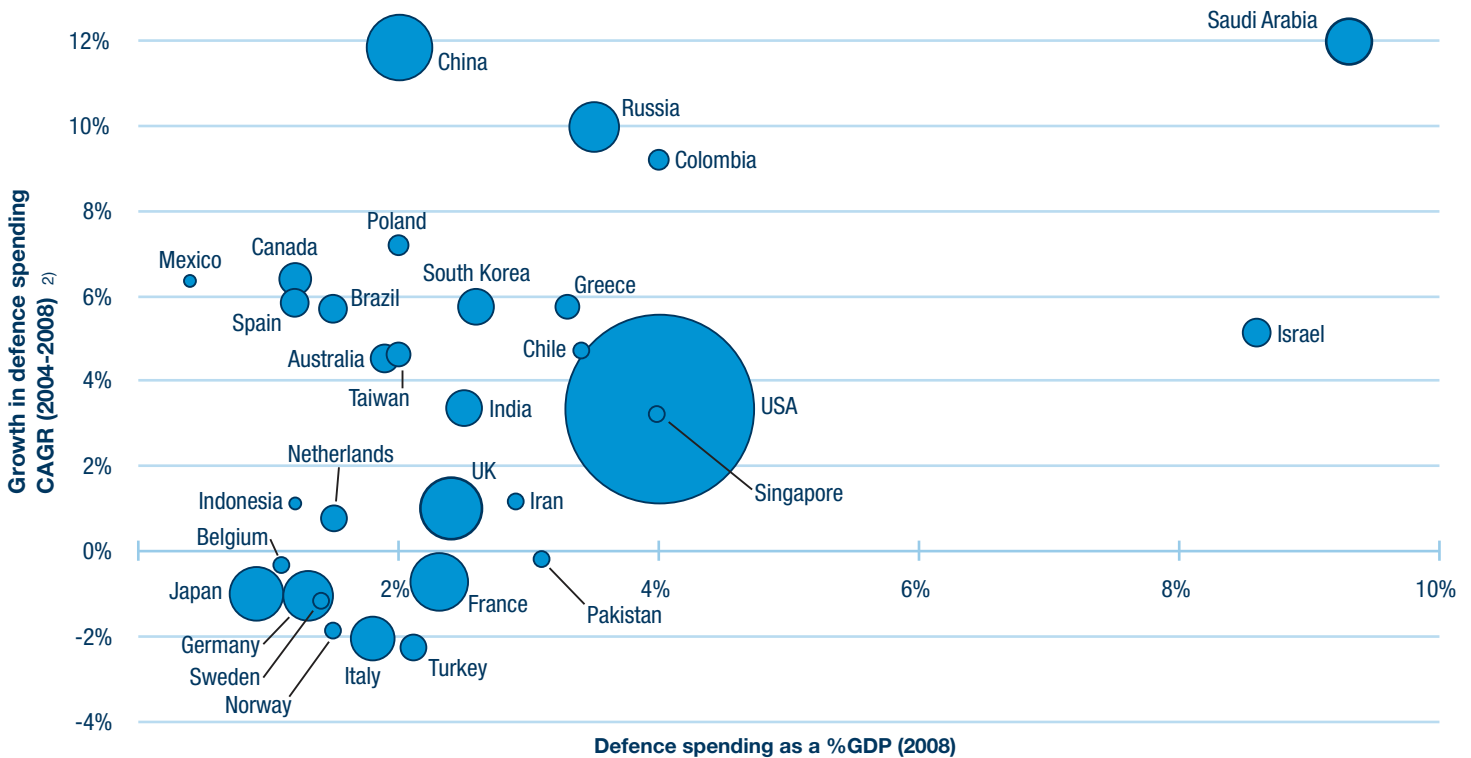
For defence, globalisation is all about market access. In priority markets, this means how do we localise our business and retain key IP.

**Miles Cowdry**  
 Director, Global Corporate Development, Rolls-Royce plc

Military alliances continue to evolve and create new opportunities for North American and European companies outside their home markets. Defence exports from the EU and North America have increased dramatically in recent years to Turkey, Pakistan, Singapore, the Baltic States, the UAE, Qatar, Malaysia and Japan. In Saudi Arabia, the growth rate of military expenditures and the growth rate of defence spending as a percentage of GDP are the highest in the world.

Poland is another market with which cooperation and defence trade has increased. Polish military spending grew at a compound annual rate of more than six per cent from 2004 through 2008. This is significantly faster than the spending increase over the same period in the US and dramatically faster than in the UK, France, Germany and Japan. Much of Poland's spending was to replace aging equipment delivered during Poland's membership of the Warsaw Pact. Poland's recent membership in NATO was a catalyst for new equipment programmes, which have been fought over by Western suppliers. In contrast, defence spending in the traditional markets of France, Germany, Italy and Japan shrank from 2004 through 2008.

**Growth in defence spending**



Note : 1) Bubble size relates to total defence spending in 2008 USD  
 2) In constant 2005 US\$

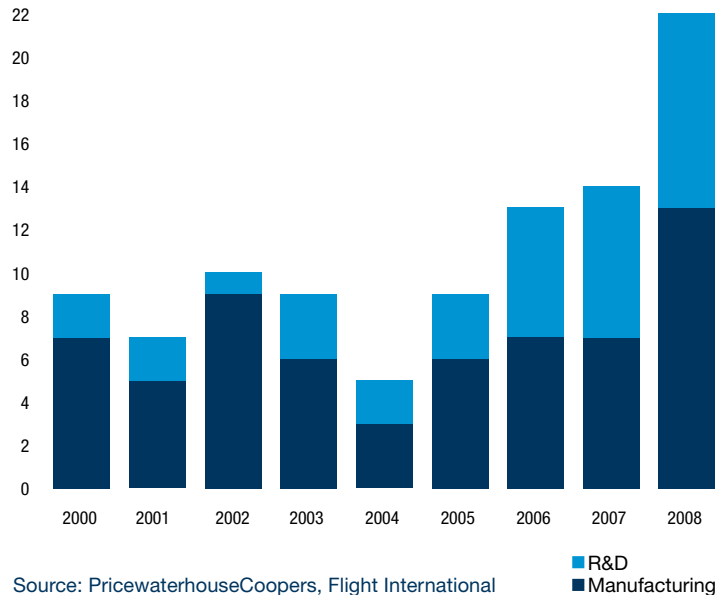
Source: PricewaterhouseCoopers, SIPRI

## Cost savings and talent gains

In 2008, the number of investments in international markets by the top fifty aerospace and defence companies reached a ten-year high.<sup>3</sup> The search for low-cost manufacturing remains an important motivation, but research and development investments have increased significantly, including the acquisition of engineering and other critical talent. Even according to conservative estimates, for example, India is currently graduating about as many engineers as the US, and China produces significantly more engineering and technology PhDs than the US or India.<sup>4</sup> Aerospace and defence companies cannot remain competitive by relying solely on the traditional sources of talent. They must recruit the best people from around the world.

Many emerging markets contain not only talent but the customers who will be engines of future sales growth. India, for example, received the largest number of R&D investments and the second largest number of manufacturing investments between 2000 and 2008. Unlike a decade ago, today's emerging market investments rarely fulfil only offset requirements. They represent large fixed assets, investments and relationships with trusted suppliers that cannot be abandoned without unacceptably increasing supply chain risk.

Number of investments by Top 50 Global A&D companies in international markets



Number of investments by Top 50 Global A&D companies in international markets (2000-2008)

Country/Region	R&D	Country/Region	Manufacturing
India	7	China	13
US	6	India	11
Russia	5	Mexico	8
UK	3	US	8
W. Europe	3	Russia	6
China	2	UK	3
Mexico	2	W. Europe	3
CEE	2	Middle East	3
S. Korea	2	N. Africa	3
Middle East	1	CEE	2
N. Africa	1	S. Korea	2
Other	1	Other	1
	<b>35</b>		<b>63</b>

Source: PricewaterhouseCoopers, Flight International

<sup>3</sup> Based on the number of investments by the top fifty aerospace and defence companies according to Flight International Top 100 Rankings (2009 Edition). Includes direct organic investments and discrete aerospace joint ventures where rationale for investment was known. Excludes acquisitions.

<sup>4</sup> Vivek Wadhwa, Gary Gereffi, Ben Rissing and Ryan Ong, "Seeing through Preconceptions: A Deeper Look at China and India," Issues in Science and Technology Online, University of Texas at Dallas, 2007.

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I don't think there's a talent shortage, but I do think that there are particular societies and economies that focus on different areas of expertise. Our strategic plan is to hire the best engineers around the world, whether they are in Minneapolis, in Phoenix, in Puerto Rico, in Brno, India, or China....[And] I don't want to limit it to engineering talent, I use that as an example.

**Tim Mahoney**  
President and CEO,  
Honeywell Aerospace

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Inevitably, costs rise over time in “low-cost” countries as a consequence of economic growth. Companies in many industries respond by shifting work to new, even lower cost regions and suppliers, sometimes every few years. In contrast, aerospace and defence suppliers are not easily interchangeable due to the following:

- Low production volumes,
- A high value of invested capital per unit of output,
- The large amount of intellectual capital invested in suppliers, and
- The investment in certifications for suppliers, which involve both products and processes.

All of these increase the level of investment. In addition, the high-profile nature of many programmes requires contractors to build strong relationships with universities as well as local and state governments. The footprint of an aerospace and defence company lasts decades rather than years.

Emeric D’Arcimoles, Senior Executive Vice President, International Development, Safran, explains, “For us, most low-cost countries are both partners and customers. In order to be a globally competitive player in this market, you need to be present in low-cost countries from a production point of view, but these countries could also become important customer markets. In that case, a global presence could also resolve offset issues.”



## Competition for complete product packages

As prime contractors pursue more international deals, governments and customers are pressing them to invest more resources directly in foreign markets. Executives accept that these “offset” requests heavily influence contract awards. Their companies now compete to offer a complete product package, which often includes offsets or similar arrangements. [Claude Lajeunesse](#), President, Aerospace Industries Association of Canada (AIAC), says, “I think the major factor driving globalisation is still national interest. It’s clear that in many countries, if you don’t build some parts of your aircraft there, they won’t buy your aircraft.”

North American and European governments have recently released statements suggesting that excessive offsets encourage poor procurement. The European Defence Agency’s European Offset Code of Conduct notes, “...we want to see defence acquisition budgets focused on what they should be focused on, that is equipping our Armed Forces with the military capabilities they need and not the ones with the highest offset offer.”

Despite these concerns, procuring governments are likely to continue using offsets and similar arrangements to create jobs and develop their economies. Offsets help localise the multi-national aerospace and defence value chain, while developing the A&D capabilities of indigenous businesses, often acting as a catalyst for aerospace and other high-technology “clusters”. This includes both developed and emerging economies. In some countries, in fact, offsets are required by law.

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Home markets wanting indigenous capability is one of the main factors driving globalisation. The previous model of selling products, whether with offsets or not, is being replaced by governments that want the capability to provide support and upgrade products through life.

**Ian King**  
Chief Executive, BAE Systems

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# 08 International but not yet global

If you're talking customers it's a very global industry, but if you're talking about suppliers, I would say it's becoming more global. Our own experience is that we have customers in over 100 countries but suppliers in only over 40 countries. Also the supply chain itself has different geographical contexts, original equipment manufacturers and Tier 1 suppliers tend to operate on a global basis but Tier 3 suppliers tend to concentrate on the domestic market. As an OEM we have a presence in over 22 countries.

**Mairead Lavery**  
Vice President Strategy, Business Development and Structured Finance, Bombardier Aerospace

Thus far the financial crisis and ensuing global recession have not changed long-term strategies in the aerospace and defence industry. Some companies have delayed international investments, such as new manufacturing facilities in low-cost regions, but executives remain committed to globalisation. Marcus Bryson, Chief Executive Aerospace, GKN plc says, "Long term plans haven't been impacted as the dynamics of the global industry in say 10 years haven't really changed...[However] aerospace manufacturing is generally the last into recession and last out. In 2010 and 11, the industry will see more impact and companies will determine if any longer term plans need to change."

Despite the continued investment in globalisation, the aerospace and defence industry is less global than some other technology and knowledge based industries according to three commonly used measures of globalisation: the degree of import and export relative to total industry trade, the amount of offshore production, and the degree of globalisation of technology and R&D content.

**Globalisation – Many manufacturing industries are clearly global in nature, including aerospace**

Measures	Ranking
<ul style="list-style-type: none"><li>• Degree of import/export relative to total industry trade</li><li>• Degree of offshore production either directly (FDI) or via supply chain</li><li>• Degree of globalisation of technology/ R&amp;D content</li></ul>	<ol style="list-style-type: none"><li>1. Computers</li><li>2. Basic Chemicals</li><li>3. Pharmaceuticals</li><li>4. Electronic equipment</li><li>5. Instruments</li><li>6. Electrical machinery</li><li>7. Automotive</li><li>8. <b>Aerospace</b></li><li>9. Petrochemicals</li><li>10. Oil/gas exploration and refining</li><li>11. Textiles/apparel</li><li>12. Basic metals</li><li>13. Minerals/mining</li><li>14. Other transport equipment</li><li>15. Food</li></ol>

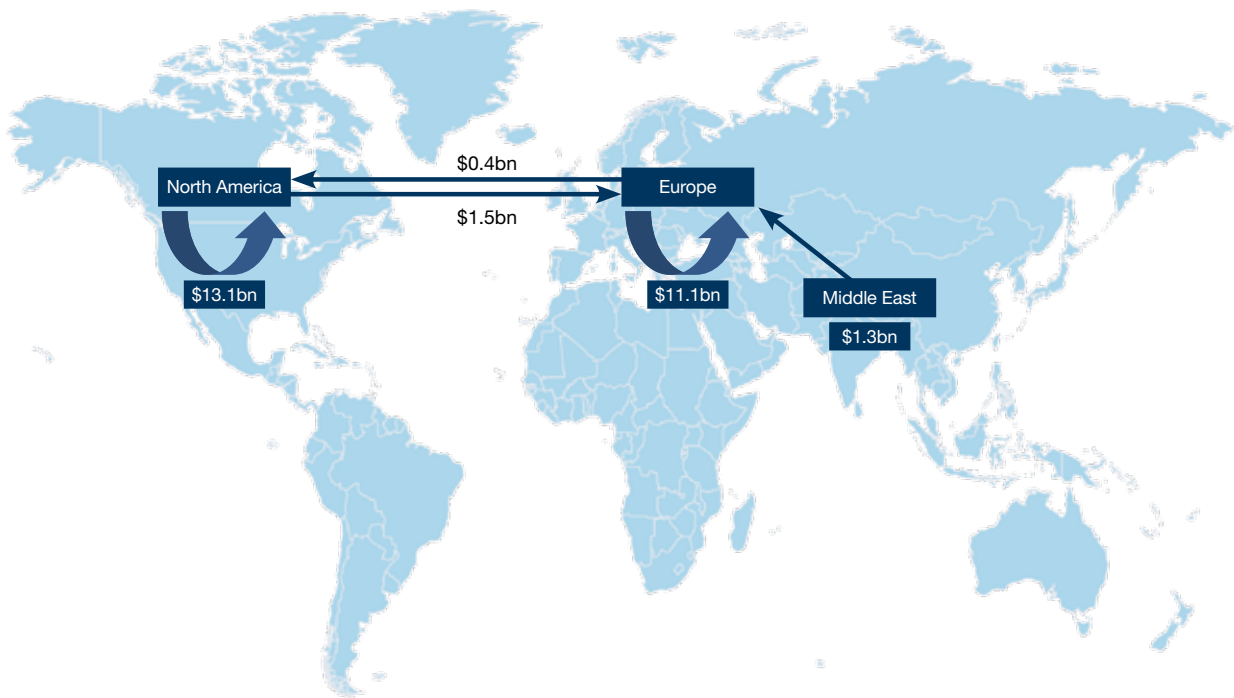
Source: PricewaterhouseCoopers



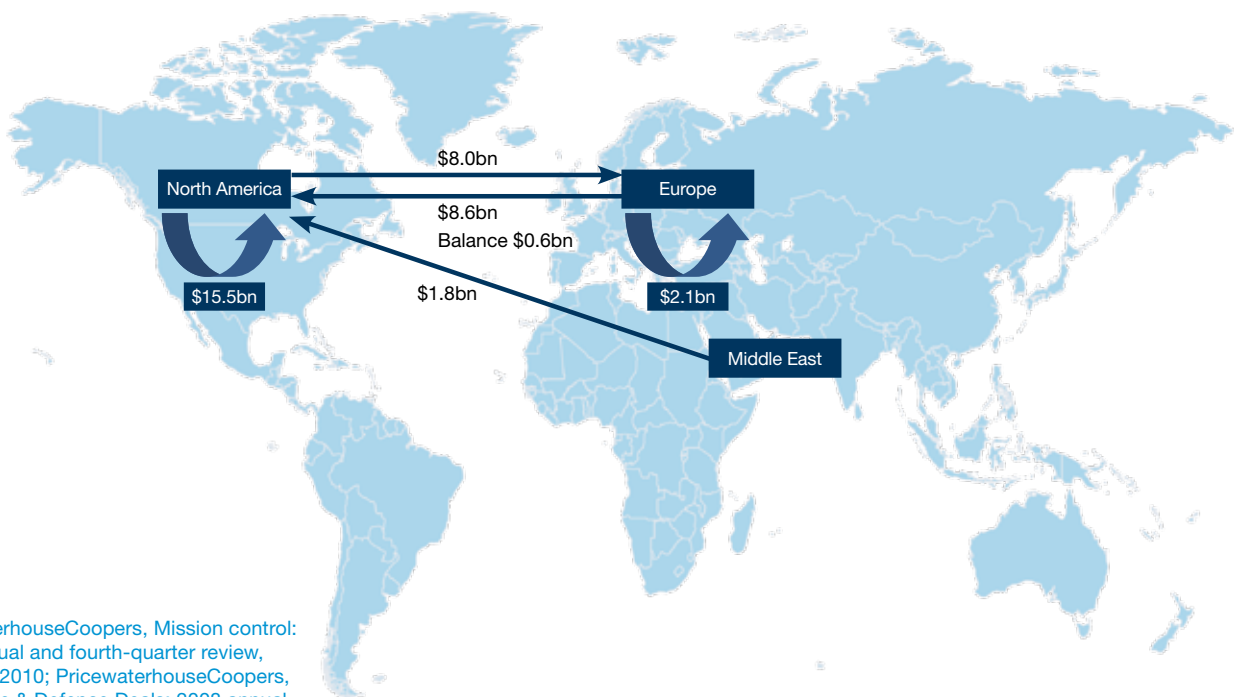
One strong indication that aerospace and defence is international but not yet global is the pattern of industry mergers and acquisitions over the last ten years. The majority of deals by volume and value have occurred in and between North America and Europe.<sup>5</sup> In 2009, 76 per cent of the deals valued above US\$50 million

involved targets in North America, the UK or the Eurozone. This compares to 19 per cent of the deals with targets in Asia and Oceania. Middle East players were involved in only a handful of deals in 2008 and 2009, none of which had publicly disclosed values above US\$50 million, after an active 2006 and 2007.

## Acquisition money flows, 2006



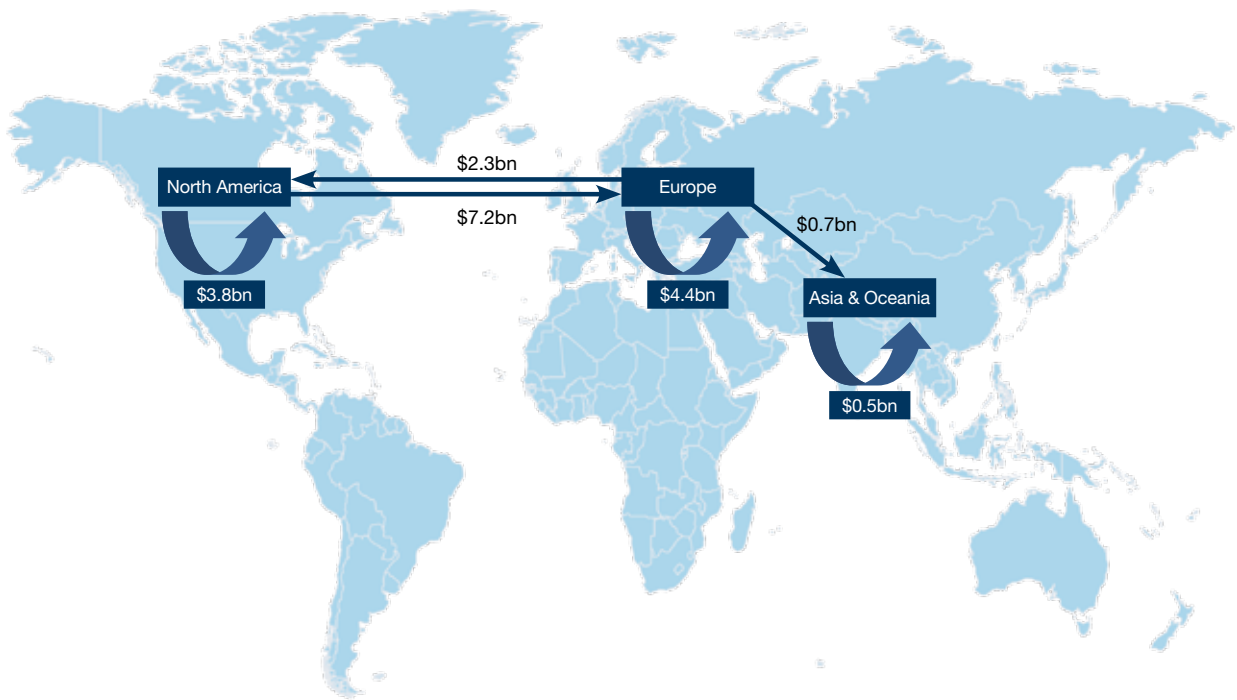
## Acquisition money flows, 2007



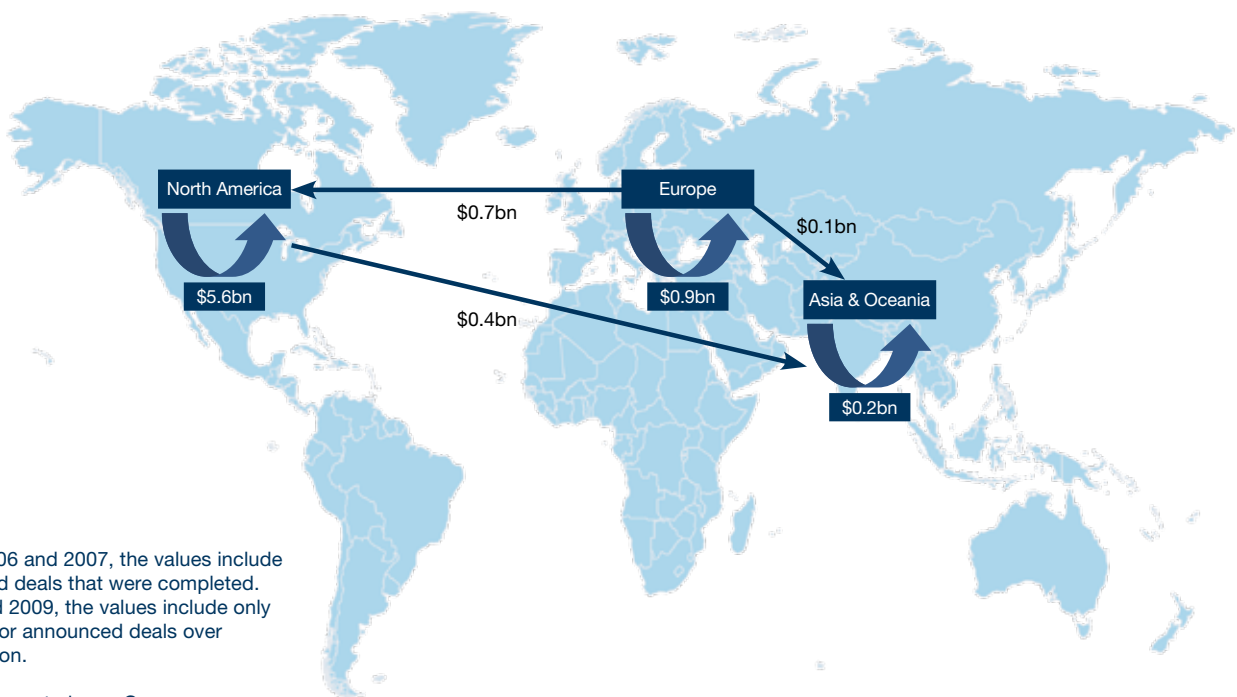
<sup>5</sup> PricewaterhouseCoopers, Mission control: 2009 annual and fourth-quarter review, February 2010; PricewaterhouseCoopers, Aerospace & Defence Deals: 2008 annual review, March 2009.

If the gross domestic products of China and India continue to increase faster than those of other regions, deal activity and values are also likely to continue increasing in Asia and Oceania. From 2008 to 2009, Asia and Oceania's combined share of worldwide deal value (above US\$50 million) rose from 6 per cent to 16 per cent.

Acquisition money flows, 2008



Acquisition money flows, 2009



Note: In 2006 and 2007, the values include all disclosed deals that were completed. In 2008 and 2009, the values include only completed or announced deals over US\$50 million.

Source: PricewaterhouseCoopers

Another measure of the progress still to be made in globalisation is the composition of corporate boards in the industry. PricewaterhouseCoopers examined the executive and non-executive boards of the ten largest aerospace and defence companies by revenue. Only 12 per cent of more than 250 board members were foreign nationals. Half the executive boards did not have a single foreign member. Forty percent of the non-executive boards also did not have one foreign member.

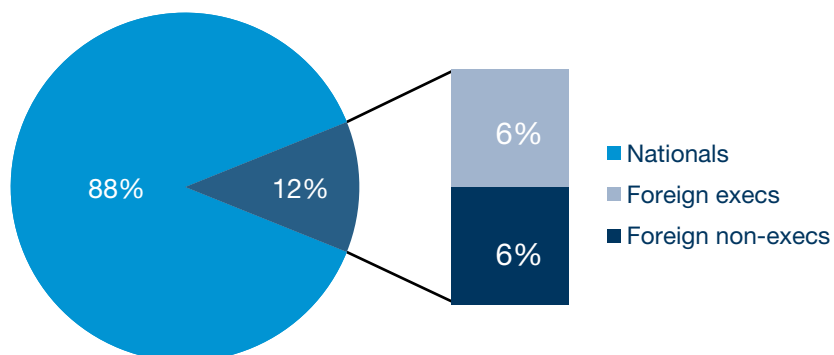
Security requirements may discourage or prohibit the involvement of foreign nationals in some aerospace and defence roles, and some executives argue that boards do not need foreign members to have a global perspective. Still, the comparison with other industries suggests that aerospace and defence would benefit from more leaders with experience of working and living in multiple countries and particularly in emerging markets.

Among the 449 board members at the top ten pharmaceutical and oil and gas companies, for example, 27 per cent of pharmaceutical members and 15 per cent of the oil and gas members were foreign. The top six oil and gas majors have very diverse board memberships, but the remainder of the top ten are state-owned companies. Even so, the average percentage of foreigners is higher in oil and gas than in aerospace and defence. [Dr. Maghin Tamilarasan, Associate Director, Strategic Business, QinetiQ](#) says “A key challenge is trying to instil in senior operational management a better understanding of the globalisation agenda and its implications.”

Most of the executives interviewed for this paper believe their companies would benefit from increasing the pace of globalisation, but significant risks and challenges stand in the way. When asked to evaluate eleven challenges on a scale from unimportant to critical, our interviewees ranked the following five challenges as most important. (The challenges of export controls and intellectual property protection tied for first place.)

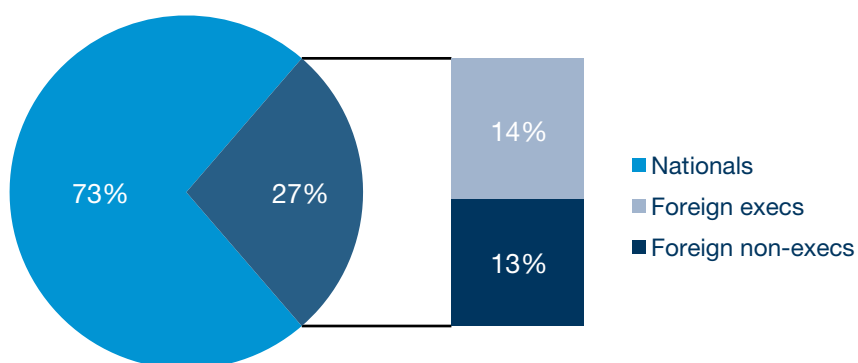
1. Weakness of intellectual property protection on new markets
1. The complexity of compliance with export controls
2. Differing interpretations of ethical requirements across different cultures
3. Increased financial risk, especially exchange rate risk
4. Expanding offset requirements

### Aerospace & defence boards executive and non-executive members



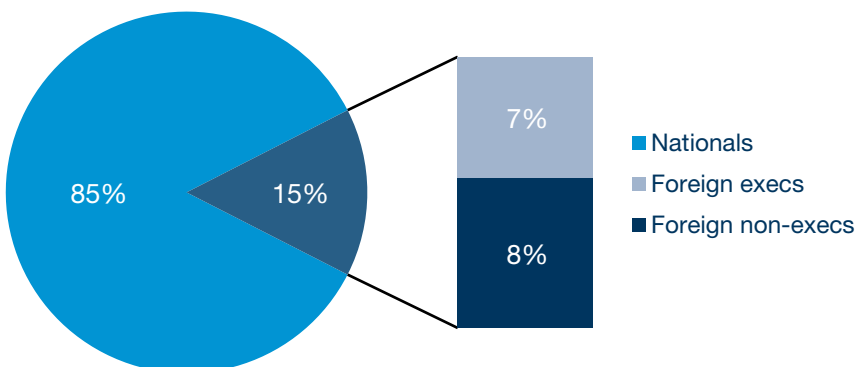
Source: PricewaterhouseCoopers  
 Note: The analysis does not include GE.

### Pharmaceutical boards executive and non-executive membership



Source: PricewaterhouseCoopers

### Oil & gas boards executive and non-executive membership



Source: PricewaterhouseCoopers

## Cautious about IP transfer

Expansion into any foreign market generally increases the risk that protected technology and manufacturing know-how will be transferred to partners, suppliers and customers. This is the case even in markets with established IP laws, courts with IP experience and a reputation for effective enforcement, such as Singapore. Marcus Bryson, Chief Executive Aerospace, GKN plc, says, “Investment in production overseas is necessary to achieve industry globalisation. This inevitably involves IP transfer and we are acutely aware that we are creating our next competitor.”

In emerging markets, concerns about transferring IP and relying on unpredictable protection regimes make aerospace and defence executives even more cautious. As one interviewee explained, many original equipment manufacturers (OEMs) remain unwilling to transfer critical intellectual property to emerging markets. This slows the globalisation of the aerospace and defence supply chain.

The forces of globalisation, however, are strong. Some markets that are believed to have below average intellectual property protection are also the most attractive for aerospace and defence investments. For example, business executives across many industries believe China, India and Poland have below average intellectual property protection.<sup>6</sup> These three markets, however, also have some of the best overall risk profiles for manufacturing investments based on indicators such as political stability, regulatory effectiveness, rule of law and sovereign debt.<sup>7</sup> Other countries with higher-risk but still attractive investment profiles, such as Turkey, Brazil and Mexico, are perceived to have even weaker IP protection.

Executives in emerging markets agree that new regulations or better enforcement is needed. According to PricewaterhouseCoopers’ annual survey of global CEOs, chief executives in China and Hong Kong believe more regulation is required. Indian CEOs, on the other hand, recognise their government’s success in improving IP laws in recent years; they advocate better enforcement of

<sup>6</sup> World Economic Forum, The Global Competitiveness Report 2009-2010 (Klaus Schwab ed.), p. 347.

<sup>7</sup> Using econometric analysis and World Bank data, the Risk and Reward Model considers sovereign debt, political stability, regulatory effectiveness and rule of law. See Balancing Risk & Reward: The PricewaterhouseCoopers EM20 Index 2009 Interim Update.

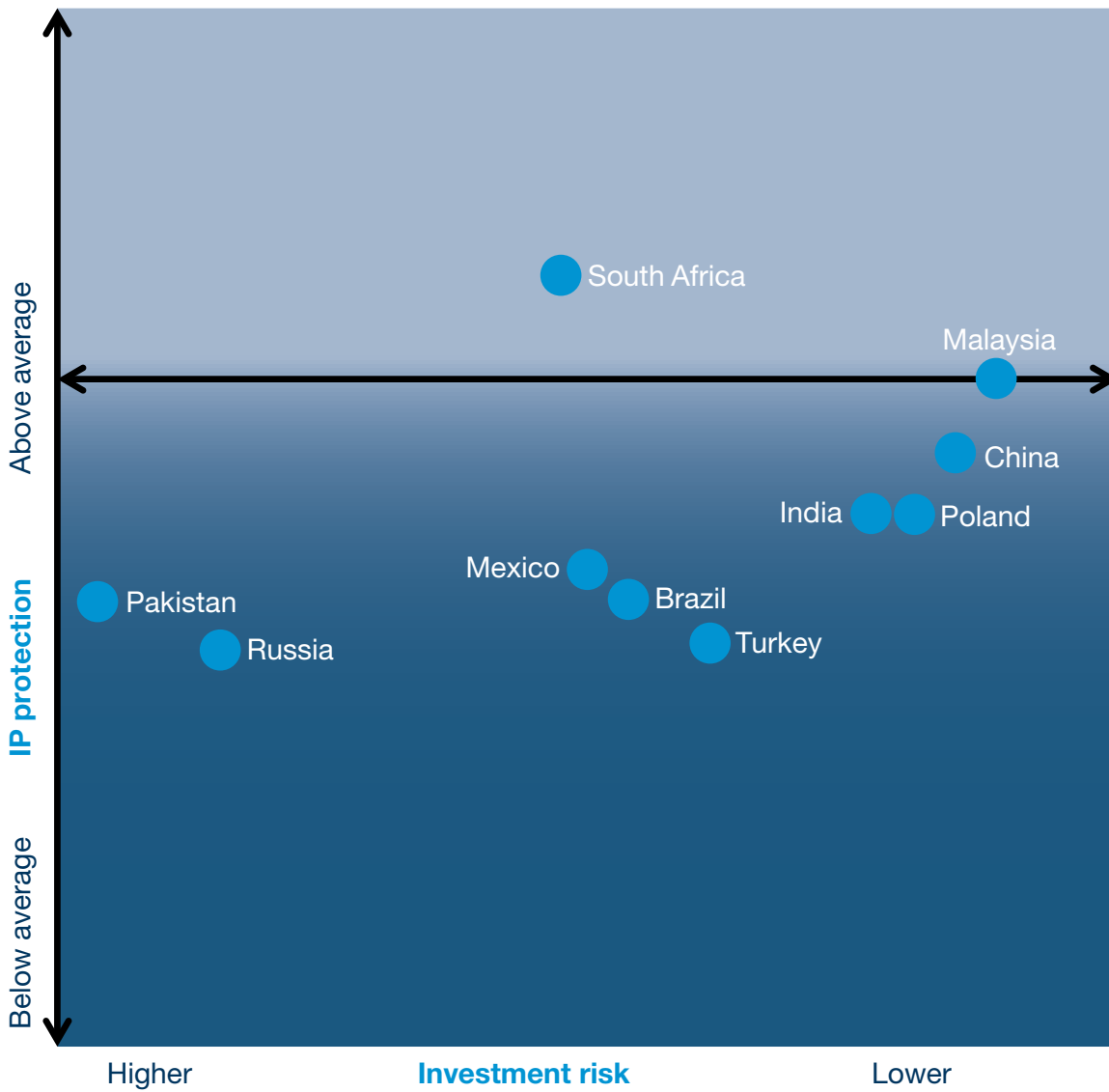


existing regulations. In Mexico, opinion is divided between new regulation and enforcement, but only 10 per cent of Mexican CEOs are satisfied with the status quo.<sup>8</sup>

While the slow process of government and cultural change has progressed, the challenge of IP transfer has become critical for the aerospace and defence industry. In the past, companies limited IP transfer by limiting operations in

emerging markets to low-cost manufacturing. In pursuit of talent, additional cost savings and complete product packages, however, companies are expanding their international investments into maintenance, R&D and higher value manufacturing. This is increasing the amount of IP that is being transferred and generated outside the home market.

**Review of investment risk and IP protection**



Source: PricewaterhouseCoopers, World Economic Forum

<sup>8</sup> PricewaterhouseCoopers, 13th Annual Global CEO Survey

## Limited by export controls

For obvious reasons governments regulate aerospace and defence exports namely:

- National security,
- Security concerns about recipient states and their immediate geographic neighbours, and
- The potential for adverse effects on bilateral relations.

Ashok Nayak, Chairman, Hindustan Aeronautics Limited explains “There are significant barriers to globalisation in the defence area, and these are likely to continue because of strategic compulsions to hold on to critical technology, source codes and IP.” The Chinese defence market, for example, is now estimated to be the second largest in the world (ahead of France, the UK and Russia),<sup>9</sup> but arms embargoes prevent US and EU defence contractors from exporting to China either directly or via partner nations.

Although the barriers are higher for defence exports, export controls also create compliance risks and costs for commercial aerospace contractors. A common example is a commercial off-the-shelf (COTS) product that is modified for military use and consequently becomes subject to military export restrictions.

According to the US International Traffic in Arms Regulations (ITAR), for example, if a commercial aircraft is designed or modified to incorporate a piece of equipment deemed to be restricted technology, the entire aircraft can then be

designated a defence article. When the US military adopted the commercial QRS-11 gyroscopic microchip for use in guided missiles, the chip became restricted by US arms control regulations. By 2003, many Airbus and Boeing aircraft included three of the chips in an avionics subsystem, but Boeing had to obtain a last-minute presidential waiver in order to deliver 737s to China.<sup>10</sup>

Dual-use goods and technologies, which can be used for both commercial and military purposes, have an extra dimension of complexity because they involve civil regulations. There is a different set of policies, procedures, forms and regulators for commercial products. In the case of the QRS-11, petitions and lobbying by Airbus and Boeing eventually led the US government to re-classify the chips as commercial items when used in commercial avionics boxes. Accordingly the US Commerce Department now regulates the chips in commercial aircraft, but for other purposes the US State Department’s Directorate of Defence Trade Controls (DDTC) remains the regulator.<sup>11</sup>

Another complication is the public-private partnership. In Europe some governments have proposed public-private partnerships (PPPs) to increase their share of major programmes, such as the Joint Strike Fighter (JSF). Such entities make compliance more complicated. A PPP is neither entirely government nor commercial, which can lead to confusion on the part of regulatory officials. While a European customer may believe that the entity can be classified as a governmental agency, the US industry and regulators will likely view it as an entirely commercial entity.

<sup>9</sup> Military expenditure: SIPRI Yearbook 2008: Armaments, Disarmament and International Security (Oxford University Press: Oxford, 2008), Appendix 5A.

<sup>10</sup> Dominic Gates, “State Department goes after Boeing,” The Seattle Times, 6 July 2005.

<sup>11</sup> Dominic Gates, “State Department goes after Boeing,” The Seattle Times, 6 July 2005.

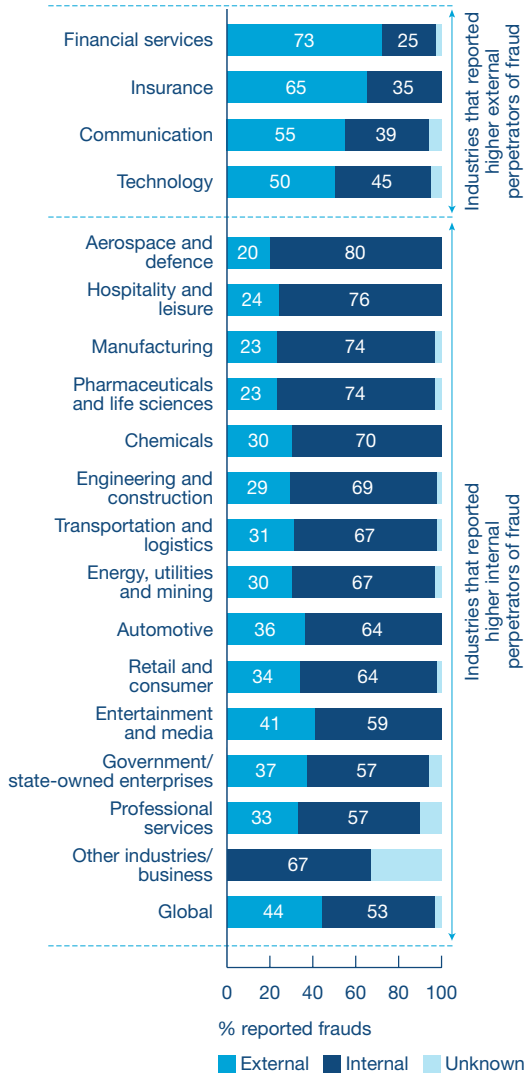
Due to the difficulty of complying with both US and European regulations some executives have concluded that US export control compliance is too costly and that US technologies should be avoided or “built around.” Many small and mid-sized companies, both in Europe and the US, have chosen simply not to enter into the market for work that involves US export compliance. In the EU, for example, there are contracts for satellite programmes that specify the spacecraft must be ITAR free. This allows the satellite owners to shop for the lowest cost launching solutions without regard for ITAR restrictions. (An ITAR restricted satellite could not be launched on a Chinese rocket, for example.)

Despite these attempts to avoid US regulations, there is a growing need for aerospace and defence companies that can comply with export controls, due in part to the following catalysts:

- Penalties, increased enforcement and potential debarment from future contracts, particularly by the US,
- Industry consolidation, which carries the risk that acquirers may be unaware of violations at acquired companies, and
- Large multi-company and multi-national initiatives (such as the JSF programme), which create a complex compliance environment.

An increasing number of European executives view compliance as a competitive advantage in winning business from US contractors. Companies are combining their compliance experience with new control frameworks and audit methodologies. They are recruiting staff and developing technology for export control management systems, such as secure collaboration technology. This includes some mid-sized companies that are heavily dependent on the aerospace and defence supply chain and are experiencing a “downflow” of US compliance obligations from partners higher up in the chain. Whether it is pursuing business that involves export controls or experiencing a downflow of obligations, a company that proactively manages compliance will increase its chances of delivering on budget and on time while avoiding potentially large fines and other costs associated with regulatory violations.

## Perpetrators of fraud by industry



% respondents representing individual industry sectors

Source: PricewaterhouseCoopers

## Challenged by cultural differences

It is a great challenge to develop consistent, global ethical standards that also reflect the languages, mores and legal frameworks in distinct local cultures. In our interviews with aerospace and defence companies, executives were concerned about the various interpretations of ethical requirements that spring from different local cultures. Compared to other industries, fraud in the aerospace and defence industry is much more likely to be committed by employees than by persons outside the organisation. Eighty per cent of the fraud reported by aerospace and defence executives in 2009 was internal. This was the highest percentage of all the industries and much higher than the global average of 53 per cent.<sup>12</sup>

PricewaterhouseCoopers' biannual survey of global economic crimes demonstrates the differences across cultures in the way executives respond to employees who commit financial crimes, such as the misappropriation of assets, accounting fraud and bribery. These findings contradict common wisdom about cultural similarities. For example, the pattern of responses to employee fraud is more similar among UK, Russian and Indian executives than between UK and US executives. (This does not appear to be explained by differences in the numbers and types of reported crime.)<sup>13</sup>

From a UK and European perspective, the US approach to ethics and compliance relies more heavily on rules than the European model, which depends more on principles. The US is also currently pursuing more foreign corruption cases than any other country; in fact, since 2005 the US has prosecuted more cases than during the prior 28 years since the enactment of its Foreign Corrupt Practices Act (FCPA). In 2009, corporate fines for FCPA violations exceeded US\$600 million.<sup>14</sup>

<sup>12</sup> PricewaterhouseCoopers, Global Economic Crime Survey, November 2009.

<sup>13</sup> PricewaterhouseCoopers, Global Economic Crime Survey, November 2009. In the US and the UK similar percentages of executives reported economic crimes within the previous 12 months – 43 and 35 per cent respectively. In Russia the proportion was 71 per cent, and in India only 18 per cent. In the types of crimes reported, the US and UK also shared more similarities than the UK, Russia and India.

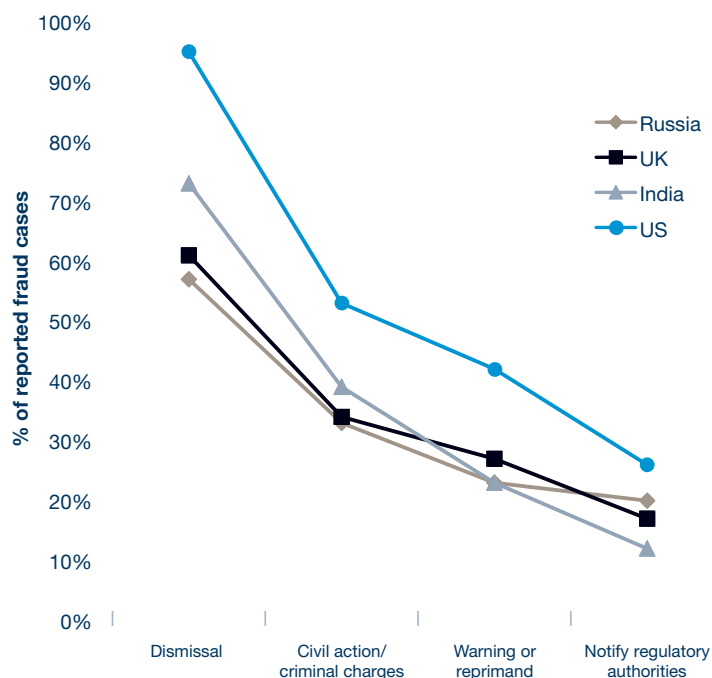
<sup>14</sup> For further discussion of emerging market business strategies related to anti-corruption, see PricewaterhouseCoopers, "Eyes wide open," View, Issue 12.

Germany, Norway and Switzerland are also considered active enforcers of anti-corruption measures, but in the UK, France, Belgium and many other European countries enforcement is moderate or weak.<sup>15</sup> This difference may partly explain why British executives, along with Indians and Russians, reported fewer dismissals, as well as fewer criminal charges, reprimands and notifications to regulators, when compared with US executives. Almost all fraud cases in the US in 2008 and 2009 resulted in the dismissal of the perpetrator.

As aerospace and defence companies globalise, it will be increasingly important that executives have the diverse experience necessary to manage compliance with rule-based regimes, such as the US, without losing the effectiveness of a principle-based approach. In a 2008 interview about his experience after joining Siemens to help it recover from a far-reaching bribery scandal, the company's general counsel explained, "Healthy compliance cultures depend on a more values-based leadership where people don't need to look at the rule book, where they know intuitively what the right thing to do is."<sup>16</sup> Much effort and investment will continue to go towards the development of principle-based cultures. One example from the UK is the aerospace and defence trade group AeroSpace | Defence | Security (A|D|S),<sup>17</sup> which has created a tool kit of best practices for fostering an ethical corporate culture.

Executives with the proven ability to create an organisation that demonstrates a 'global culture with local flavour' will be much in demand as the A&D industry matures, as other industries have demonstrated this creates a more representative, responsive, innovative and self managing organisation.

### Response to internal fraud



Source: PricewaterhouseCoopers

Communications is a challenge because everything needs to be translated appropriately. Many cultures do not question authority, and educating employees on their individual responsibilities is the biggest challenge to maintaining UTC's high standard of ethics across a global organisation. So Pratt & Whitney spends a lot of money educating and training people.

**Dave Hess**  
**President, Pratt & Whitney (a division of United Technologies Corporation)**

<sup>15</sup> Transparency International, *OECD Anti-Bribery Convention Progress Report, 2009*.

<sup>16</sup> Carter Dougherty, "The sheriff at Siemens sees an endless battle," *International Herald Tribune*, 6 October 2008.

<sup>17</sup> A|D|S is the trade body advancing UK AeroSpace, Defence and Security industries with Farnborough International Limited as a wholly-owned subsidiary. A|D|S also encompasses the British Aviation Group (BAG). It is formed from the merger of the Association of Police and Public Security Suppliers (APPSS), the Defence Manufacturers Association (DMA) and the Society of British Aerospace Companies (SBAC).

## Wary of financial risk

The executives interviewed for this paper confirmed that globalisation expands financial risks due to transfer pricing, foreign exchange, international tax regimes and shared services. Among these, currency risk was discussed in the most detail, possibly as a result of the recent weak US dollar and volatile exchange rates, which have placed additional pressure on hedging strategies. [Joachim Nägele, Head of Programs and Sales, Premium Aerotec, says, “Exchange rate risk is one of the most important financial risks of globalisation. It creates a strong incentive to go to US dollar markets ideally in combination with low cost country opportunities.”](#)

The principal problem for most companies is US dollar revenue, as the global aerospace and defence market is priced in US dollars. For companies outside the US, the majority or even all of their revenues may be in US dollars while the bulk of their costs are in their home currencies. Apart from the euro, there are no other currencies that could potentially rival the US dollar as a standard for payments, so the dollar standard and its associated risks are likely to continue. If the US national debt continues to erode the strength of the US currency in the coming years, US-based operations will have a cost advantage.

Currency risk plays out over long time frames in the aerospace and defence industry because programmes last as long as 40 years. This makes hedging more difficult. Companies generally have the tools to manage short-term currency risk, such as forecasting and the ability to hedge through financial instruments. Long-term contracts, however, create risks that are beyond the horizon of the currency markets. When financial instruments are available for long-term hedging, they are often not liquid.

As aerospace and defence companies extend their supply chains abroad, there is also an increased likelihood that political and supply chain risks will affect financial risk. Changes in contract laws, taxes and foreign policies, for example, can significantly alter the economics of a capital-intensive programme with sovereign customers. When local suppliers are required, either because of offsets or cost, companies may not have the same range of tools to evaluate and monitor the financial stability of those suppliers. In regions where capital markets and credit reporting is still developing, simply evaluating the financial risk posed by suppliers can be a challenge.

All of the above factors mean that organisations need to undertake comprehensive due diligence before making investments.

## Pressured by offsets

The globalisation of the aerospace and defence industry is making the delivery of offsets more challenging for OEMs and suppliers alike. In the last 20 years outsourcing rose dramatically in the aerospace and defence supply chain, and prime contractors shifted costs and responsibilities to subsystem integrators and suppliers. OEMs today expect their supply chains to share offset obligations.

These obligations are growing in emerging markets as the markets increase in economic strength and gain leverage in negotiating offsets. Emerging markets do not yet have the required skills, infrastructure and IP to develop and maintain many aerospace and defence technologies. Developing those skills and transferring IP may not be feasible, commercially acceptable or consistent with export regulations. Dieter John, Chief Financial Officer, Eurocopter Group explains, “Offset requirements are becoming more and more demanding and increasingly difficult to fulfil, particularly in light of quite frequently conflicting strategic targets with low cost, dollarisation and emerging country approaches.”

When localisation does occur, through direct offsets for example, supply chain risks rise. Any new operation increases the potential for cost overruns, delays, quality failures and programme failure. Those risks expand when the operation is partially<sup>18</sup> or wholly external and when the programme involves multiple government customers, such as the JSF. When manufacturing or other operations are located in a foreign culture, remote from technical expertise, or reliant on marginal infrastructure, the potential for programme disruption is even greater.<sup>19</sup>

Indirect offsets carry their own risks. They may require companies to support activities unrelated to the contract in which the company has little or no competency such as social programmes. It may take considerable effort to evaluate the benefit of an indirect offset, demonstrate its value to the customer and justify its expense to stakeholders. The risk of impropriety or its appearance is higher with indirect offsets.

<sup>18</sup> A joint venture is one example of a partially external operation.

<sup>19</sup> For further discussion of managing risk in the A&D supply chain, see PricewaterhouseCoopers, How to fortify your supply chain through collaborative risk management, January 2009.

# 22 Successful globalisation

## Safe intellectual property

Aerospace and defence companies must accept the risk of IP transfer in order to enter new markets and offer direct offsets, but there are a number of ways to minimise exposure. Some functions can be moved or transferred offshore for an acceptable level of risk, for example, when the IP involved is not business critical or sensitive or is otherwise long established with good protection (e.g. through patenting). Identifying this IP requires a detailed understanding of which functions are affected and what IP is associated with those functions.

Research and development functions, for example, may not be appropriate for markets in which IP laws or enforcement are weak. The strength of the worldwide IP rights for new technologies depends in part on the strength of the laws and enforcement in the originating jurisdiction. The level of IP protection may be less of a concern for companies that are moving ongoing operations with established IP rights (to a low-cost country, for example).

In either case, detail about the IP being moved or created helps determine if the IP can be handled safely. It is also important to understand what would be required to safeguard the IP, including security measures, training and personnel agreements. The type of corporate structure or relationship will also affect IP protection. It is easier to monitor and control IP in a subsidiary, for example, than in a joint venture or external supply relationship. A joint venture, on the other hand, may provide an advantage in enforcement actions because local courts sometimes look more favourably on local companies.

Joint ventures also raise questions for IP. Which IP is each partner contributing, for example, and what compensation are they receiving? Another important issue is ownership: Who will own the contributed IP and if the joint venture creates new IP, who will own and control that? In order to benefit from the ability to pull IP out of a joint venture at the end of its life, it is obviously critical to plan for that possibility in advance.

The basic questions of “Who will own and control the IP?” and “What happens to the IP at the end of the relationship?” apply to many types of business structures. So too does the question of how to maximise revenue from IP once the structure is up and running. Lump sum payments, for example, have different tax implications than steady royalties based on units sold. Whichever model is chosen, subsidiary or partnering with another company, there is never any substitute for doing detailed due diligence on your partners and key employees. What is their approach to IP security? Do they understand the importance of IP to the business? What is the process of identifying and securing protection for new technologies? How effective are the restrictive covenants in the local employment contracts?

Because executives can do little to influence laws and enforcement patterns, they may need to simply avoid markets where IP protection is lacking. The need to protect IP may also conflict with government objectives (through offsets or otherwise) to develop production, innovation and services in their local aerospace and defence sector. When businesses look carefully at their IP, however, they can often identify compromises that balance their need for IP protection with the needs and desires of their customers.



## Benefiting from export controls

While export controls create significant risks for aerospace and defence companies, many see compliance not as a cost of doing business but as an opportunity to create a competitive advantage. In Europe in particular, many executives believe the ability to demonstrate compliance with export control regulations is an important growth strategy both for the US market and internationally. Executives expect to gain a range of benefits in return for their investments in compliance, from more US business (a license to operate) to stronger negotiating positions during programme discussions and fewer unexpected compliance costs. These benefits are sustained through staff training that develops insight into licensing requirements and the skills to manage compliance. Over the long term, an effective Export Control Management System also supports a company's reputation.

The costs of building an Export Control Management System can be significant, but many executives often do not realise that their organisations already have many tools that can be applied to export controls, thus reducing the cost of the Management System. Companies that have invested in compliance with the US Sarbanes-Oxley Act of 2002, for example, may have many mechanisms in place that can be re-purposed. The control framework for IP protection is another potential resource.

To avoid a breach of export control regulations, organisations must monitor and control communication and business activity within geographically and culturally diverse environments. Employees and partners must be able to work together worldwide and share information without breaking regulations. Some elements of an export control framework include the following:

- **Management commitment** (“tone at the top”) is regarded by many governments as the most important aspect of an effective compliance programme, requiring communicating the commitment, providing suitable resources and evaluating and assuring the effectiveness of the programme.
- **A compliance organisation** is broadly characterised by management that ensures the right personnel with the right experience are present in the appropriate locations and have the appropriate authority and clearly defined reporting lines.
- **Training** is the foundation of successful compliance and required at all levels in the company.
- **Processes and procedures** include export licence applications, documentation and recordkeeping, and screening transactions against restricted parties lists and prohibited end users and end uses.
- **Physical and IT security** includes the development of technology control plans, establishing a “culture of security,” identifying foreign nationals and submitting suitable licence applications when required.
- **Reviewing and auditing** are government expectations and should include integration with company quality procedures, reporting and effective corrective action procedures.
- **Voluntary disclosure (of violations) policy and processes** should include senior management commitment to reporting, “whistleblower” provisions and appropriate disciplinary processes for non-compliance.

A control framework is principally designed to influence behaviour. Accordingly it must incorporate and manage cultural differences. For non-US companies in principle-based cultures, adapting to the rule-based mindset of US regulators is important. Principles are the driving force behind a compliance culture, but executives must also ensure they establish the systems and process that can demonstrate compliance with the letter as well as the spirit of US regulations.

### The business case for compliance

Answering the following questions helps to evaluate the business case for investments in export control compliance.

- Is compliance a fundamental part of corporate strategy?
- How can we create a return on the investment in compliance?
- What is the result of non-compliance?
- How can we create control mechanisms and are there existing control mechanisms (e.g. for Sarbanes-Oxley) that can be applied to export controls?
- How do we create manuals, procedures and policies for our staff?
- How do we translate legislation to practical requirements?
- Can we create cost reductions without compromising our regulatory requirements?

## Creating ethical cultures

As is the case with other business risks, the potential damage from ethical risks is much greater when they are neglected until a crisis strikes. The best strategy for mitigating ethical risks is to establish a risk and compliance process that includes risk identification, assessment, mitigation (including prevention) and, critically, ongoing reporting and monitoring that tracks emerging and evolving risks.

Much has been written about this now traditional approach to risk management, including the Enterprise Risk Management – Integrated Framework produced by the Committee of Sponsoring Organizations of the Treadway Commission, known as COSO.<sup>20</sup> As mentioned earlier, organisations like A|D|S in the UK also provide guidance and tool kits for ethics best practices (with a specific focus on anti-bribery and corruption) in the aerospace and defence sector.

The ultimate prize to be won by effectively using these tools and frameworks is to change individual and organisational behaviour. This may seem obvious, but for leaders and executives working to demonstrate compliance, systems and processes are easier to change than behaviour. In describing the new anti-corruption legislation (Bribery Act), to which the UK parliament gave Royal Assent in April, the director of the UK Serious Fraud Office explained, “We shall also be looking closely at the culture within the corporate to see how well the processes really reflect what is happening in the corporate.... This is about bringing about behavioural change within businesses themselves and will create corporate cultures in which no form of corruption is tolerated.”<sup>21</sup>

Changing attitudes and mindsets around what is “the right thing to do” in a global organisation is a complex, long-term journey. It begins with ethical leaders and effective leadership (i.e. the tone at the top).<sup>22</sup> Only by demonstrating the right tone will ethical behaviour become embedded in the organisation. Leaders must be seen to be committed to zero tolerance of improper behaviour. They should apply sanctions and terminations consistently in response to improper conduct by employees or third parties (agents, suppliers, distributors). It is critical to foster openness and transparency by communicating the outcome of violations and being consistent in the enforcement of policies.

An integrated approach helps the tone at the top spread throughout an organisation. Company values and how they align with business objectives should be clear. The key ethical principles that drive business behaviour should be reflected in training, criteria for advancement and performance-related reward schemes. How many executives, for example, have recently positively recognised an employee for refusing business on ethical grounds?

**Emeric D’Arcimoles, Senior Executive Vice President, International Development, Safran, says** “While we also commit to reduce the duration of the learning curve, we prefer to spend more time training local teams rather than just saving money, because it reduces the risk in the long term. People often don’t realise how different cultures and references are.”

Employees in different cultures have different ideas about “what is the right thing to do”. This is why values-based principles must be the driving force behind ethics in multi-national organisations. Rules, while important, are not flexible enough to accommodate the variety of situations and cultural contexts. The level of hospitality that is

<sup>20</sup> The executive summary can be found online at [www.coso.org/documents/COSO\\_ERM\\_ExecutiveSummary.pdf](http://www.coso.org/documents/COSO_ERM_ExecutiveSummary.pdf).

<sup>21</sup> Serious Fraud Office, Guidance on Dealing with Overseas Corruption, July 2009.

<sup>22</sup> PricewaterhouseCoopers Fraud Academy is currently conducting a survey that examines tone at the top, including the actions business leaders are taking to set the tone. Results will be forthcoming at [www.pwc.fraudacademy.com](http://www.pwc.fraudacademy.com).

acceptable, for example, is heavily dependent on circumstance. In order to make the right decision about how much to spend on client entertainment in each case, employees must combine global principles, such as propriety and transparency (e.g., through a gift and hospitality register), with their knowledge of what is acceptable in the local market. A rules-only approach increases the risk that a local operation will comply with head office rules without internalising the principles behind them.

Third-party relationships are particularly susceptible to cultural misunderstanding. High profile cases involving the US FCPA, for example, have shown that a contractor is liable for partners, intermediaries and representatives that do not meet US standards no matter where in the world the third party operates. It is critical that ethical due diligence is undertaken to select partners, that partners are encouraged to apply your standards, and that ongoing reporting and monitoring ensures the partner behaves in accordance with corporate values and codes of conduct.

The UK Bribery Act makes managing third-party even more important. The Act is the biggest change in many generations to UK anti-corruption law. It introduces a new crime of “failure to prevent” bribery. Companies unable to demonstrate that they have implemented “adequate procedures” to prevent corrupt practices within their ranks or *by third parties on their behalf* could be exposed to unlimited fines as well as other collateral consequences, such as debarment from government business.<sup>23</sup> Companies that have established “adequate procedures”, on the other hand, will have a potential shield against liability.

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All of us find ourselves making decisions each day to deal with these pressures. Ethical business decision making really enters into that every time we have to make a decision. Various countries have different customs and different laws. But Boeing’s principles for ethical conduct remain the same.

**Steve Goo**  
 vice president, International Operations & Compliance,  
 Boeing Defence, Space & Security (BDS)

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<sup>23</sup> It is expected that the “general offences” will come into force in June 2010. The (Section 7) corporate offence of failing to prevent bribery is expected to come into force in October 2010 following issuance of guidance on “Adequate Procedures” by July 2010.

## Managing financial risk

Globalisation increases the number of political, legal and economic environments in which aerospace and defence companies operate. All of these affect financial risk.

Companies cultivate relationships with local authorities in order to monitor political and legal developments, so that they will be warned of changes that affect their businesses and ideally have an opportunity to negotiate. International financial partners, such as export agencies or groups of major banks, also help deter sudden political decisions that may damage the profitability of a programme. (The borrowed funds may be more expensive, but the stability may be worth the cost.)

A local partner can also provide a measure of insurance against political or legislative action, but evaluating partners is more difficult abroad than at home. Especially if the local relationship fulfils an offset requirement, companies should be careful that the local partner meets both financial and ethical standards and can deliver acceptable value for money (see above and below). Whatever the potential partner's location, evaluating its financial reliability is a rigorous analytical process. If the accounting and financial standards of the local market are different enough from the home market, this may require an audit that includes visits to facilities and meetings with local management.

Aerospace and defence companies that develop local partners and operations in markets outside the US face two important structural issues that affect exposure to financial risk: US dollar pricing and long project durations. The strategies for managing the exchange rate risk associated with these issues can be segmented by time horizon.

Over short periods of three or fewer years, liquid financial mechanisms are available for hedging currency risk. As the time horizon extends beyond two years and up to ten, contractual mechanisms become more important. Adding a currency adjustment clause to a contract, for example, is one customary strategy.

Over ten or more years, large-scale strategic decisions have the greatest impact on currency risk. Two examples are the selection of a local partner and the location of a key supply chain link, such as a manufacturing facility. Other industries deploy assets according to portfolio strategies, which determine the target percentage of sales or assets for various regions. Offset requirements and a concentrated customer base limit the options for aerospace and defence companies, but some principles of a portfolio approach are still useful.

## Evaluating offsets

The requirement to engage in offset activities is a common feature of major international defence industry contracts. Offsets expose aerospace and defence companies to multiple, diverse and evolving risks.

Before addressing the challenges of delivering an offset, a company should determine whether or not it is capable of delivering the offsets and whether it is appropriate to do so. Of primary concern are ethical and reputational issues, such as whether the offsets will produce the expected benefit and who will benefit. Value for money is also important. Is the offset the best way for the customer to achieve the expected return? Can the contractor deliver the offset for an acceptable cost? A direct offset, for example, may not allow the contractor to use the lowest cost suppliers. An indirect offset, such as a social programme, may be much more efficiently delivered by a non-governmental organisation.

As we discuss in more detail below, offsets that involve the movement or transfer of technology or know-how increase the risk of intellectual property loss. Evaluating this risk before committing to an offset allows executives to determine if the risk can be mitigated to an acceptable level. Legal and regulatory risks pose a similar question: Can the company's existing compliance framework address the applicable laws and regulations, such as the complicated and far-reaching US export controls, which apply to both civil and military technologies?

Once the company commits to offering an offset, good monitoring and financial controls are necessary. There is a risk that the offsets often do not receive the same attention from management as the main contract, yet each offset also requires detailed planning and contractual obligations to ensure the promised benefit is delivered in the agreed timeframe. Is there, for example, a mutual agreement about what value will be delivered and how that value will be validated?

Joint venture and consortia arrangements raise questions about whether there is appropriate sharing of responsibility for offset commitments between the parties to the arrangement and whether there are appropriate controls and governance in place over offsets. If intermediaries are involved, are they being properly controlled and monitored? Aerospace and defence companies have repeatedly found that intermediaries provide no shield against legal and ethical violations or their effects on reputation.

Offsets are a cost of winning business and likely to remain so for the foreseeable future. They do create value for customers, but may be inefficient investments that expose contractors to significant risks. More transparency would help customers create greater value for money and help contractors reduce their legal and reputational risks. When designed and managed transparently and effectively, offsets can demonstrate a company's commitment to good corporate citizenship and deliver real benefits to the communities in which it operates.

### Identifying offset risks

A&D companies need to ensure that they are managing the potential risks associated with offset activities throughout the full life of a programme—from the point of first contact with customers, through programme specification and contractual arrangements, during the delivery of the commitments and finally to customer sign off. The following questions help executives identify those risks:

- Could our reputation and ethics be impaired?
- Do the arrangements comply with relevant laws and regulations?
- Is it clear who will ultimately benefit from the arrangements?
- Do offset arrangements represent value for money for our customer?
- Are the offsets commercially viable and what is the real impact on our projected contract margin?
- Do we and our partners have the capability and capacity to deliver the obligations?
- Are our partners operating to appropriate standards?
- Will any IP leakage be acceptable?
- Is it clear how the delivery of offsets will be measured?

# 28 The race is on

Aerospace and defence has turned a corner. Its customers and supply base are already international. The race towards true globalisation has begun.

The speed of globalisation in aerospace and defence will always be determined to some degree by the slow rate of change in government policy. As [Ashok Nayak, Chairman, Hindustan Aeronautics Limited](#) says “Globalisation in the defence area needs to be backed by a national policy.” The world’s long-term demographic and economic trends are, however, driving companies to compete in emerging markets.

The winners of the race will be those with an appetite for globalisation. Globalisation may introduce new risks and more complexity into the supply chain, but as this paper has discussed, the strategies to meet these challenges are known. Most are already in use in some form within the aerospace and defence industry. Others are evident in other high technology industries.

Winners will adapt, expand and execute these strategies more quickly and more effectively than their competitors. By doing so, they will lead markets that will drive growth over the next twenty years and beyond.



# 30 Further reading

Publications from PricewaterhouseCoopers' Global Aerospace & Defence industry practice are available to download from [www.pwc.com/aerospaceanddefence](http://www.pwc.com/aerospaceanddefence).

PricewaterhouseCoopers provides thoughtful analysis of the challenges and opportunities facing business leaders in the aerospace and defence industry. Our thought leadership publications help inform the strategic decisions guiding many of the industry's leading organisations.

## Mission control 2009 annual and fourth quarter review



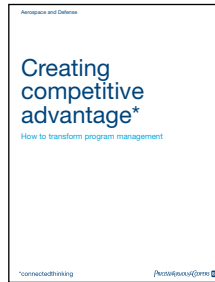
This publication reviews 2009 deal activity in the aerospace and defence industry, exploring the key drivers behind transactions. The analysis also focuses on deal activity by key region and considers the future transactions outlook.

## How to fortify your supply chain through collaborative risk management



This whitepaper represents PricewaterhouseCoopers' new analysis on how aerospace and defence companies can work with their global partners to effectively and collaboratively manage supply chain risks. Insight was gained through various interviews with senior management in the A&D industry, as well as with cross-industry thought leaders.

## Creating competitive advantage: How to transform program management



This whitepaper shares PricewaterhouseCoopers' point of view on the aerospace and defence industry's challenges and our framework for program management effectiveness. It draws on the knowledge and experience of our network of A&D industry professionals, who have extensive backgrounds in government contracting, program management, risk management, supplier management, and Lean and Six Sigma methodologies.

## IFRS Industry Series: A New Flight Plan - What New Accounting Standards will mean to the Aerospace & Defence Industry



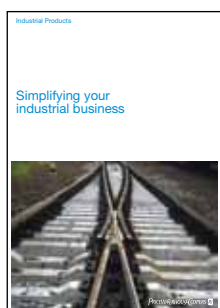
Aerospace and defence companies have specific considerations to address for a successful IFRS transition. Although planning for an IFRS implementation may not be an immediate priority in light of the current economic uncertainty, US-based A&D companies would be wise to take a thoughtful and measured approach to assess what IFRS will mean to them. To

help companies do this, this publication summarises some of the complex accounting areas that are specific to the A&D industry.



## Related materials

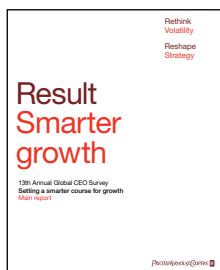
### Simplifying your industrial business



Many industrial products companies are diverse businesses, with multiple divisions operating in a number of different countries and regions. These businesses often have a wide-ranging, complicated structure of legal entities supporting them. Board members and stakeholders are often surprised by the extent and complexity of such structures, which may in some cases,

be counter to the strategic intent of the organisation. In this paper we share our views on reducing the legal entity footprint and achieving sustainable cost reductions and efficiency gains through a closer alignment between a simplified management model and simplified legal structures.

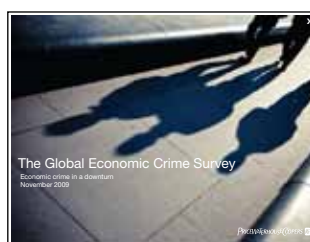
### 13th Annual Global CEO Survey



The effects of the recent downturn were far-reaching, but as our new survey shows, CEOs continue to work to strengthen their organisations while seeking opportunities emerging from structural shifts in their industries, economies and regulatory environments. The 13th Annual Global CEO Survey offers an up-close look at how business leaders have responded

to the challenges brought about by the recession, the concerns they are facing today and their strategies for positioning their companies for the long term.

### 2009 Global Economic Crime Survey



#### *The 5th Global Economic Crime Survey*

The survey, entitled Economic Crime in a Downturn, is based on more than 3,000 companies in 54 countries. It is the largest, most comprehensive international survey of economic crime worldwide.

# 32 PwC aerospace and defence experience

## Deep aerospace and defence experience

PwC's Aerospace and Defence practice is a global network of 1,200 partners and client service professionals who provide industry-focused assurance, tax, and advisory services to leading aerospace and defence companies around the world. This aerospace and defence experience is enhanced by that of our Public Services practice, which includes an additional 600 partners and 9,000 professionals focused on assisting federal, state, and local governments; international agencies; and healthcare entities. We help A&D companies address a full spectrum of industry-specific challenges across areas such as assurance, tax, operational improvement, supply chain management, programme management effectiveness, IT effectiveness and security, compliance, export controls, and government contracting. PwC's A&D client service professionals are committed—both individually and as a team—to the relentless pursuit of excellence, building insights, and advancing leadership on a wide range of the most critical challenges and issues confronting A&D organisations. PwC is a sponsor of leading industry conferences and frequently authors articles for, or is quoted in, leading industry publications.

We are proud of our relationships with *Aviation Week* and *Flight International*, as well our participation in industry conferences and associations, such as the Aerospace Industries Association (AIA) and American Conference

Institute (ACI). Our involvement in these organisations reflects our commitment to addressing industry needs and furthering industry dialogue with A&D industry leaders.

## Quality deal professionals

PwC's Transaction Services practice, with more than 3,800 dedicated deal professionals worldwide, has the right industry and functional experience to advise you on all factors that could affect a transaction, including market, financial accounting, tax, human resources, operating, information technology, and supply chain considerations. Teamed with our A&D practice, our deal professionals can bring a unique perspective to your transaction, addressing it from a technical as well as industry point of view.

## Local coverage, global connection

In addition to having more than 1,200 professionals who serve the A&D industry, our team is part of an extensive Industrial Products group that consists of 31,000 professionals, including approximately 15,800 providing assurance services, 9,000 providing tax services, and 6,200 providing advisory services. This expands our global footprint and enables us to concentrate efforts in bringing clients a greater depth of talent, resources, and know-how in the most effective and timely way.



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