Trends in European Defence Industry in the 1990s: An Assessment

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Abstract

Significant changes have been witnessed in major centres of military production in recent times. Since the end of the Cold War, indicators of military production – expenditure, R&D expenditure, demand and supply of weaponry, and others – have shown fluctuations. Military efforts of States decelerated for nearly a decade, only to rise again since the late 1990s. The changing international security scenario has necessitated such changes, to which major centres of military production have responded in many ways – efforts towards concentration, diversification, conversion and privatisation are some of the objectives that the States have strived to achieve in their defence industrial strategies. In this context, as major centres of military production, the European States have faced many challenges. A strikingly difficult task in their case has been the search of a viable unity in political and strategic terms, which could shape the defence industry, among others, to their aspirations. This paper argues that while trends in European defence industries are moving in different directions, it is the future political shape of the Union that could be the driving force. It argues that the 'muddle through' scenario is likely to continue for some more time amidst two opposite contemporary trends – a common European defence industrial base and a trans-Atlantic defence industry.

Introduction

The international security scenario in contemporary times has witnessed a major shift in the behaviour of the defence industry of major States. Traditional notions of security, defined in terms of balance of power and stability, have paved the way for newer forms of security – to include specific emerging national security priorities like tackling various forms of terrorism. Creation of organisations like the Department of Homeland Security[1] in the United States illustrates such changes. With changes impacting the international security scenario more than before, national governments

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have begun adjusting their security priorities in ways that suit their respective interests under changed objectives. The end of the Cold War has entailed significant changes in many spheres of activity that have forced States to reprioritise their security calculus.

Among the fields of activity that have been considerably affected, especially in the 1990s and beyond, is military production. This is evident from the fact that the volume of military production as well as the value of arms trade fell drastically soon after the end of the Cold War in the late 1980s. A set of other related indicators typifies visible changes that have occurred since the end of the Cold War. The number of 'major armed conflicts'[2] have come down from 33 in 1991 to 19 in 2003.[3] Military expenditure has come down to US$722 billion in 1995-96 from a Cold War high of $1,260 billion in 1987 – a decline of more than 35 per cent. Since then, it has increased to $879 billion in 2003 ($956 billion at constant 2000 dollar prices) – an upward swing of more than 10 per cent. Expenditure on military research and development (R&D) has shown similar trends – declining from $71.2 billion in 1987 to $50.5 billion in 1998, increasing significantly thereafter. .Expenditure on equipment by NATO member-countries has decreased to $87.9 billion in 2001 from $106 billion in 1992. Expenditure on military personnel has shown a similar decline. However, since the mid-1990s, major indicators, earlier in decline, have more or less stabilised and in many cases, have shown an upward trend. All these suggest that while the end of the Cold War brought considerable changes, relative stability in major indicators since the late 1990s shows a contrast.[4]

Although not strictly a corollary of such shifts in the international security scenario, defence industrial capabilities of major States have shown similar trends – fluctuating in accordance with their shifting security priorities. A few indicators invite further debate in this regard. Declining military expenditure led to a continuing reduction in the demand for military equipment, especially in the domestic sector. Similarly, arms exports declined. For example, arms sales by major European countries fell by nearly 30 per cent during the period 1991-2000. Arms exports to Third World nations fell by nearly 40 per cent during the same period. The reduction in allocations for procurement led defence industries to contract. The number of arms manufacturing units as well as employment in them declined putting the defence industry under severe stress. Arms producers adopted different strategies to cope with changing times – rationalisation, concentration and internationalisation, to name a few. The West was the quickest to respond followed by Russia, China and second-tier producers. While the US witnessed unprecedented changes in its defence industrial sector, Europe was the next to follow.

As the second most important centre of arms production, Europe has drawn considerable attention in recent times. It has been engaged in a series of national and intra-European levels of defence industrial concentration – prompting many to describe this as an evolution of what is called 'Fortress Europe'. This is, among others, symbolised by a deep sense of creating a 'common European defence industry.'[5]

Concentration, diversification, merger and acquisitions (M&As), and internationalisation have become buzzwords in the defence industrial world. At the same time, contrary to such a pan-European yearning, there is a parallel trend towards what is commonly known as creating and nurturing an 'Atlantic defence industry'.[6] This denotes a desire to make both sides of the Atlantic (the US and the Europe) come together to form a trans-Atlantic defence industrial link. While both these trends are visible, another trend that is often neglected by scholars is that of the European defence industry becoming a victim of internecine politics among major States. The contemporary international security environment is likely to make matters worse, as Europe is likely to face challenges in both spheres – security and politics. The emerging trend, loosely referred to as 'muddle through', displays more ambiguities than consistency.

This 'muddle through' scenario, unless shaken by any major international crisis, is likely to continue for the next decade or so. It is also argued that national and intra-European politics will drive defence industrial decisions in Europe for years to come. This is attributable to the fact that unlike in the US where economics complements politics, things are different in Europe – politics predominates economics, as a 'United Europe of States' is likely to emerge instead of a 'United States of Europe'.

This paper, divided into four parts, examines the main trends affecting the European defence industry in the present times. The first section explains the Cold War era in brief. The second examines the main trends during the 1990s. The third section looks into three major scenarios. The last section, while summarising the previous three sections, argues that India ought to follow a 'selective bonding' approach in dealing with Europe in general and the European defence industry, in particular.

The Cold War Era: Maintaining Frontline Status

During the Cold War era, Europe emerged and was subsequently recognised as the third most important arms production centre in the world[7] – after the US and the Soviet Union. Both for its own defence requirements as well as for supplying weapons to the developing countries, its defence production capabilities were consistently developed and encouraged to play a pivotal role in external relations. This is evident from the fact that during the early years of the Cold War, defence outlays of major European countries witnessed a considerable increase. For example, European members of NATO spent a combined $6.8 billion in 1948 tripling in the next two decades to over $18 billion.[8] Defence expenditure for the UK, Belgium, France and Denmark, with minor fluctuations, nearly quadrupled. During the same period, top spenders like the US increased their defence budget to more than four times (from $16.6 billion to $68.2 billion in 1968) while the Soviet Union affected an increase from $8.8 billion to $18.5 billion. Although major NATO and Warsaw Pact members were competing fiercely with each other, yet gross investments in military between

the two rival blocs favoured the former throughout, thus prompting many to suggest a 'military-economic overstretch' for the latter, ultimately causing its eventual demise.

Complementing a consistently increasing military expenditure, Europe became a prime centre of arms exports, after the US and the Soviet Union, a position it maintained throughout the Cold War period. During the mid-1950s, Europe accounted for nearly 35 per cent of the total value of global arms exports. For example, during 1955-56, its combined exports value was estimated at $330 million (out of a total global value of $770 million) – slightly lower than the combined exports by both the Superpowers. Europe's arms exports extended to several regions like the Middle East, South and Southeast Asia, Africa and even Central and South America. One reason attributed to such a reach is that European nations had colonies all over the world and the post-colonial era saw the newly-independent States depending heavily on their former masters. Military goods and equipment supplied by European countries included tanks, fighter aircraft, missiles and naval systems like frigates, warships and submarines.

France, the UK and West Germany had developed sophisticated weaponry that was not only considered for domestic purposes but also meant for exports. These countries had exported a large number of weapons systems like the 'Wellington Class' hovercraft (Iran), Augusta-Bell 205 helicopters, Mirage III, AA Matra missiles, BAC Lightning F-53 fighter aircraft, and Daphne class submarines, among others.[9] This trend was especially evident during the 1970s and 1980s.

Defence industrial capabilities in Europe were ably supplemented by fairly elaborate R&D establishments. Major European countries invested large sums in military R&D activities. For example, during the early 1970s, the UK, France and West Germany had devoted more than 15 per cent of their defence outlays to military R&D. Military R&D expenditure as percentage of the value of production of military equipment was between 30 and 35 per cent. This is considered high, although many argue that published figures for military R&D tend to understate the total (in many cases, military R&D expenditure is concealed in other parts of the national budget). It is estimated by SIPRI that an average military product is some 20 times as research-intensive as an average civilian product.[10] Also, many argue that the same does not apply to countries like the Soviet Union or China. But, such figures are generally agreed upon by all as a standard for Western countries.

In terms of lead in the field of defence science and technology, major European countries had an impressive record, although the gap between Europe and the US started widening since the 1970s. In many cases of specific weapons systems, the time taken for production of weapons (from conceptualisation and drawing board activities) has been quite impressive. For example, Mirage 3E aircraft, manufactured by Dassault-Breguet, took three years from design to the first prototype and another three for serial production. In the UK, the British Aerospace Company took roughly the same amount of time for its prime products like Harrier fighter, Hawk-1 fighter/ trainer and Sea Harrier. During the 1970s and 1980s, collaborative efforts between

European states witnessed production of several systems like Alpha Jet, Jaguar and Tornado. In missile production, Europe was quite competitive with the US. For example, the Raytheon-manufactured AIM-9L Sidewinder missile took five years for serial production. It took roughly the same amount of time for BAe to manufacture the Short Range Air-to-Air missile (SRAAM) and Matra to produce R-550 Magic.[11] A large and growing exports market prompted the manufacturers to seize the opportunity to establish themselves..

Major changes were seen in the European defence industry during the Cold War. A massive build up of conventional armed forces around the world, growing nuclear arsenals possessed and developed by major States, growing demands for sophisticated weapons systems by developing countries, increasing investments in the military sector, emergence of new arms suppliers and other factors contributed considerably to the evolution and development of the European defence industry. Many European States privatised their industries while others brought them under State control. However, such changes did not affect arms exports much. Most European States developed and sustained large military industrial establishments that brought in much desired economic as well as strategic benefits, specially influence over many developing countries.

A few major trends were noticeable during this period. First, Europe witnessed a slow change from politics of aid to trade. During the post-colonial years and early Cold War period, a considerable amount of arms exports from Europe was channelled through as 'military or economic aid' or at 'friendly prices' to many developing countries. This slowly changed to trade, as many newly emerging buyers were able to afford weapons– bringing commercial aspects into prominence. Under a variety of schemes like cash, credit and loan agreements, European suppliers started selling arms instead of giving them at friendly prices. Second, due to a set of factors like domestic politics, rationalisation in national economies and emergence of arms manufacturers among the developing countries, Europe witnessed a restructuring of its defence industry. This happened during the 1970s and 1980s, a time when many European companies sought international collaborations to maintain their prominent positions. Third, demand from the developing world for sophisticated weaponry prompted many in Europe to invest large resources in military R&D and specific product systems. Although some product systems were successfully exported, failures in development of others hindered progress in defence science and technology, and caused prices of specific products to escalate (other factors like research costs, long lead time, etc., were also responsible for this). Fourth, during the same period, the technology gap between the US and Europe widened; one primary reason attributed to this was increasing investment in military R&D by the US. Fifth, increasing competition led to the creation of large companies in Europe. Aerospatiale, Dassault-Breguet, Aeritalia are examples of some big companies that came up during the 1970s and 1980s. Last, but not the least, the movement for creating political unity among European States gathered momentum during the 1980s. Although the creation

of a common market had started during the 1950s, emphasis on unity among European States gained prominence as the Cold War era ended, aided as it was by developments like German reunification.

The 1990s: Strive Towards Consolidation

Remarkable changes in the international security landscape[12] brought in important changes in the European defence industry.[13] Major reductions in military expenditure and accompanying measures to trim defence requirements created many difficulties. From a high of $186.6 billion in 1987, Europe's combined defence outlay declined to $166 billion in 1994. Except for France, all major European countries experienced cuts in military expenditure. Thus, from a high of $42.5 billion, the UK's defence budget was reduced to below $35 billion in 1994. In the same period, United Germany's defence budget was cut by $10 billion. Procurement budgets too nose-dived during the same period. European expenditure on military equipment fell sharply from $30.6 billion in 1987 to $23.4 billion in 1995. For example, France's expenditure on military equipment fell by 17 per cent in a single year (1994). To make matters worse, arms exports fell by almost 50 per cent between 1987 and 1994.[14] All this suggests that the European defence industry was under severe stress in the immediate aftermath of the end of the Cold War.

The European defence industry tried several strategies to cope with the changing scenario. Major companies slashed their budgets. This, among others, was accompanied by cuts in employment. Companies like Aerospatiale, Dassault Aviation, DCN, SNECMA, Rheinmetall, HDW, BAe, Royal British Ordnance and others slashed their manpower by nearly 40,000 in a single year (1991). Although exact figures are difficult to obtain, it is estimated that major European companies reduced their manpower by nearly quarter of a million during the period 1987 to 1992.[15] Manpower reduction, accompanied by slashed budgets, forced many companies to go for comprehensive rationalisation. Companies affected major changes in internal organisation and structure, like combining corporate and registered offices.

The creation of bigger and globally competitive companies was aimed at retaining share and grabbing new opportunities in the arms exports market. Two types of companies typified this trend – enabling a big company to grow bigger through mergers and acquisitions, and creating new companies on a larger scale. BAe, Aerospatiale, DNC are examples of companies in the former category while those like EADS fall in the latter.

Since the early 1990s, largescale concentration and diversification has occurred in the European defence industry. Concentration efforts have occurred at two levels – national and intra-European. At the national level, creation of big, competitive companies within single States, like France, Germany, Italy, Sweden and Spain, has taken place. For example, in Italy and Sweden, a significant proportion of arms production was transferred to one group. Thus, while Italy's Finmeccanica today controls 70 per cent of the country's arms production, Sweden's Celsius is responsible

for more than 50 per cent of such production. Such efforts have resulted in the withering away of many companies from the military business. These include UK's Ferranti and Thorn EMI, which wound up their military businesses in the early 1990s.

The national-level concentration and restructuring efforts were accompanied by cross-country joint ventures (JVs) and armament collaborations. These efforts were largely carried out within and among various European countries[16]. Several JVs came up during the 1990s - Aerospatiale and DASA decided to form two JVs – Euromissile systems (EMSYS) and European Satellite Industries (ESI) in 1995. In the same year, BAe and Dassault Aviation announced their intention to create a JV for R&D on technologies for the next-generation fighter aircraft after the Eurofighter 2000 and Rafale to be able to compete against US aerospace giants. In the field of naval systems, DCN of France and Orizzonte of Italy forged a partnership to work on the Horizon frigate programme. Substantial activities occurred in other areas of defence, especially in the military electronics sector. A high content of electronic components in major weapons systems and the increasing importance of dual-use technologies made this sector attractive. Merger and acquisition activities among European military electronics companies focused on the takeover of electronic companies by big platform producers as a means to increase system integration capabilities. BAe's takeover of Marconi Electronic Systems, a subsidiary of UK giant, GEC, in 1999 was the largest such takeover.

The formation of large corporate structures created the ground for reorganisation of companies in other sectors like missiles, radar systems, land-based systems and naval systems. In the field of naval systems development, companies like DCN, HDW, ET Marinesysteme are striving hard to grow bigger through mergers and acquisitions. ET Marinesysteme was created by EADS and Thales to manufacture naval electronic components. In the missile sector, a historic decision was taken in 2001 by French, British, German and Italian companies to form a major European JV, called Matra BAe Dynamics and Alenia (MBDA), to manufacture state-of-the-art missile systems. BAe, EADS and Finmeccanica jointly own this company.[17] Development of complete systems apart, companies like Thomson-CSF, DASA and GEC joined hands to develop fire control systems for the Eurofighter. In brief, consolidation was not confined to the creation of companies to produce complete systems alone.

Similarly, during the mid-1990s, the debate on contemporary and future defence industrial activities centred around the discussion on creating a Europe-wide aerospace company. This became a reality in late 1999 when EADS was created. An intra-European aerospace company, it combined the aerospace activities of Aerospatiale Matra (France), DASA (Germany) and CASA (Spain). Along with Bae, EADS is expected to become a leader in the aerospace segment in Europe.

Besides national and intra-European concentration efforts, the European defence industry was also engaged in a series of 'trans-Atlantic military industrial links'.

Although such efforts were underway since the late 1980s and early 1990s, things really began to move at a faster pace during the mid-1990s. Major British and German companies were involved in large-scale mergers with companies in the US. Prominent cases include Daimler-Chrysler and the GEC-Tracor mergers. Companies like Daimler-Chrysler, BAe, and GEC showed keen interest in acquiring units discarded by companies like Northrop Grumman and others. Similarly, the proposed merger between Northrop Grumman and Lockheed Martin, which is yet to be formalised, prompted many European firms to look for acquiring their subsidiaries.

European companies were also willing to go beyond the Atlantic.[18] Thomson-CSF and Transport Holding bought ADI, one of the largest arms manufacturing companies in Australia.[19] Similarly, a French consortium led by Dassault Aviation (including partners like Thomson-CSF, Aerospatiale Matra and SNECMA) agreed to acquire a 20 per cent share in Embraer, the largest aerospace company of Brazil. BAe systems along with Saab acquired 20 per cent share in South Africa's Denel Aviation.[20] Companies like DASA, Celsius, Vickers and others have also gone into various acquisition and collaboration deals with many South African companies. Major European companies are also looking for opportunities in other countries.

Many State-owned or managed European companies were privatised, further altering the shape of the European defence industry. France, known for its State-controlled defence industry, initiated a major privatisation drive during the 1990s. Although significant assets still remain under State ownership, including DCN, SMA, GIAT and SNECMA, there are plans to partly privatise many of them in the near future.[21] Privatisation efforts in Poland took off during the late 1990s, when major European companies like EADS and the AVIA Systems Group of Spain acquired 51 per cent stake in the Polish aircraft company, PZL Warszawa-Okecie. Also, PZL Swidnik, a company producing helicopters, has been privatised.[22] Countries like Finland and Greece have also undertaken major privatisation drives in recent times. The ball for this was set rolling by the partial privatisation of Patria Industry, the largest arms manufacturing company in Finland in 2000-01, where EADS has grabbed a major share. Similarly, Greece has taken steps to privatise its major companies like Hellenic Aerospace and Hellenic Shipyards. Privatisation efforts have this played a major role in the European defence industry and it is a trend that is expected to continue well into the next decade.

The European defence industry witnessed slow evolution in the 1990s, plagued by the creation of a single European defence market, a common code of conduct for exports, a common armaments agency, standardisation of equipment, and robust trans-Atlantic relations. The lack of, or little effort, in these areas has hindered the progress of defence industrial objectives. In fact, to realise these goals, major States have been striving to introduce relevant policy-oriented elements in the larger European project of a 'common vision' – denoted by creating common means to achieve unity among nations. The creation of common institutions has been under way for quite some time and is still continuing. Creating substantial institutional

framework to achieve a common European defence industry is an important part of this process.

In 1995, France and Germany decided to create a bilateral armaments agency, open for other European countries to join. This was considered an important step forward towards a common defence market, although it initially attracted a lukewarm response. Further intensive consultations among major States culminated in a 'Framework Agreement to Facilitate the Restructuring and Operation of the European Defence Industry', agreed upon by France, Germany, Italy, Spain, Sweden and the UK in July 1998, and signed in July 2000.[23] The Agreement, among others, emphasised harmonisation of military requirements, which included equipment cooperation and standardisation. In fact, standardisation of weapons systems has been extensively debated on by European States and many studies have been conducted on this subject, the findings of which point to the need for creating a 'European Defence Standardisation System'[24] through reforms in such implemented by different States. Broader steps for creating a common market and industrial base have similarly drawn considerable attention. The case for a European Defence Equipment Policy has been extensively discussed in a report submitted to the EU by the Commission of the European Communities in March 2003. This report, among other recommendations, strongly advocates institutionalisation of common policy guidelines for defence equipment.[25] Many policy-makers have advocated creation of a common defence industrial base. For instance, Mr Erkki Liikanen, the European Commissioner for Enterprise and Information Society, has been emphasising on the need for a common industrial base and armaments policy.[26] Finally, the establishment of a common 'EU Code of Conduct for Arms Exports'[27] has also accelerated the pace of tasks that need to be undertaken by the European States.

Three Directions: 'Fortress Europe', 'Atlantic Defence Industry' or 'Muddle Through'?

National and intra-European concentration, trans-Atlantic military industrial links, diversification and internationalisation impinged on many of the activities under way in the European defence industry in the 1990s. In what direction is it going? Is it moving towards the evolution of a single continental defence industry? Or is it trying to build a strong trans-Atlantic link? These are critical issues that have been debated by scholars and policy-makers for quite some time. It is interesting to find that both strands are moving in parallel, although it is the former, which has found stronger favour. Some scholars also argue that the current status of the European defence industry is fraught with confusion and contradictions. Such confusion, it is argued, is likely to remain unresolved unless robust institutional arrangements are put in place. Although long overdue, this is time consuming, and may take at least a decade or two.

A continental defence industrial base, commonly referred to as 'Fortress Europe'[28], is slowly emerging. Several reasons are cited for this scenario. First, politics at

national and intra-European levels has necessitated creation of a common defence industry. Although many differences remain within and among members of the EU, the slow evolution of institutions to facilitate policies towards greater integration and cooperation among States is a pointer to this. Second, politics has been strengthened by economic factors. Major States, having privatised most of their industrial capacities, are now moving closer to each other. This is evident in the increasing sectoral cooperation among major companies and an urge to create large European companies to face competition, especially with US companies. These motives are generally industry-led, complemented by national politics. Third, there is a need to build a common industrial base, because United Europe as a single entity will be incompatible with many distinct defence industries, with the lack of complementarities creating more chaos. Fourth, it is argued that a common defence industrial base is necessary to build a united front in the global defence market, currently dominated by the US. The latter is also way ahead in defence science and technology, with the gap growing wider. A united front, with a common pool meant for substantial emphasis on defence science and technology, is perhaps the only way to bridge the gap. Fifth, in a competitive arms market, it is argued that the European market may be flooded with foreign suppliers, making things difficult for domestic suppliers. Therefore, a protectionist policy should be followed by European States. And last but not the least, it is argued that in the event of an eventual continental drift between Europe and the US, as is evident from various instances in recent times, it is likely that Europe will be left with nothing. Hence, it must put its house in order.

While a trend towards 'Fortress Europe' is clearly visible, so is a definite inclination towards creating a larger trans-Atlantic link in the defence sector.[29] The most obvious example of this is the UK, which has been advocating such cooperation. Major companies like BAe and others have been involved in mergers and acquisitions in a substantial way during the 1990s. The trans-Atlantic links took off during the mid-1990s, with 10 merger and acquisition agreements between European and American companies finalised in just a single year (1996). Interestingly, it was the European industry that was more interested in trans-Atlantic mergers than the US industry, which adopted a cautious approach.

The reasons cited in support of what is commonly called an 'Atlantic Defence Industry' are many. First, the growing cooperation between the two continental defence industrial bases will create a common supplier whose market dominance may continue probably indefinitely. This is aided by a shrinking global arms market and increasing competition among prime contractors. Second, this will close the technology gap, in turn, paving the way for US companies to invest more in Europe, with the latter benefiting from such efforts. Third, mutual accessibility will lead to mutual benefits. Stress on standardisation of equipment in Europe, as suggested by many, is a pointer in this regard. It is argued that such efforts should follow US examples. This will eventually close the standardisation gap. Fourth, a renewed

emphasis on trans-Atlantic links in the defence industry is likely to lessen the growing tension between the two continents in politics and security.

With both trends clearly visible, the European defence industry is in a dilemma. Which way to go? The absence of any clear direction is driving the industry through a period of what is called the 'muddle through'. This trend is typified by a lack of direction in defence industrial policies, clash of national interests among States, and most importantly, lack of a clear roadmap for the future. Many argue that this trend is likely to continue for many reasons. First, moving in parallel yet often-contradictory directions creates of a state of confusion in the European defence industry, worsening matters policy-makers. Second, Europe is yet to evolve a clear roadmap, the processes for which, although underway for quite some time, will take several more years to mature. In its absence, the defence industry is likely to follow traditional approaches. Third, in the absence of anything common, States in Europe will be driven by their own national interests, creating more chaos than order. Fourth, unity among major States is still not mature enough to inspire newly admitted countries or smaller ones. There are more disagreements than agreements between States like France, UK and Germany. Anglo-French, Anglo-German and Franco-German collaborative efforts are exist, but one rarely finds common concerns voiced by the three. Fifth, the security concerns of the newly admitted members and those 'to-be-admitted-soon' (by 2005) have not adequately been addressed by the major countries. Creation of a common rapid reaction force is considered important but not sufficient to address all security concerns of the European States because its primary objectives are confined to crisis management. Lastly, slow progress in finalising common institutional arrangements, is likely to delay the evolution of a common European defence industry.

Conclusion

The future of the European defence industry presents a mixed bag of optimistic and pessimistic scenarios. At best, it is likely to become a rival of the US, which is indeed a chimera. At worst, it may never become a united defence industrial base. A realistic assessment is that it is likely to muddle through amid all difficulties for the next few years. Although some progress has been made, more still remains to be accomplished. If this is the future scenario, then what are the implications for India? What are India's options towards Europe in general and its defence industry in particular? It is time that a debate on this subject commences.

India's defence industry has been witnessing significant changes during the 1990s. The 'self-sufficiency' model adopted by India since independence has undergone significant changes during the last 50 years. Initially, there was a need to make the defence industry self-sufficient through enhancement of indigenous production capabilities. While indigenous capabilities have certainly grown over the years, India is still far short of a desirable level of self-sufficiency in defence production. Since the early 1990s, renewed efforts have been made to achieve this goal, for which a set of significant changes has been initiated. Prominent among

these is the recent announcement by the Indian government to open the hitherto closed defence industrial sector to private investment. Among others, this change in policy has three components – raising the level of defence production to reach respectability, enhancing defence science and technology to achieve global standards, and making the industry globally competitive. In order to achieve these objectives, the defence industrial strategies emphasise on the participation of the Indian private sector as well as encourage more collaborative efforts with international partners. In this, the European defence industry plays an important role. In short, one can argue that as far as India is concerned, it should go in for what is called a 'select bonding' approach towards Europe. This approach emphasises cooperation among select European and Indian companies that are considered mutually beneficial to each other.

There are three primary reasons favouring this approach. First, as Europe is in transition, India should try to develop ties with select countries for defence industrial partnerships. For instance, France, UK and Germany are far more important than Belgium or Luxembourg. Strengthening bilateral relations with these countries is likely to benefit India in many ways. Second, companies like British Aerospace, Thales, DCN, HDW, EADS are prime players in Europe. Select partnerships with some of these companies will help India not only in defence industrial terms but also in politico-strategic terms; the latter points towards greater Indo-European cooperation. While French companies like Thales, DCN and others are extremely keen to have ties with Indian companies, select partnerships like that between HAL and EADS, MBDA and BDL are examples that are likely to bring in positive results. Third, European companies increasingly realise the importance of India not only as a prime buyer but also as a major international player. India here has a distinct advantage, as collaborative efforts are likely to bring in technologies that will be beneficial to India, if India plays its cards well. The bargaining card seems to have paid dividends in the case of the Russians, who are now willing to go in for transfer of technology arrangements in a number of product systems like aerospace and missiles, something unheard of in the past. The same may also bring in European majors into India.

Appendices

Table 1

Comparative Economic and Other Indicators of Select European Countries – 1980/1989

Country	GDP (in US$bn)	Population (m)	Per capita GDP ($)	Growth Rate (%)	Military Expenditure ($b)
FRG	1030.5/1239.7	61.6/61.64	16729/20112	2.6/1.9	33.8/35
France	810.3/990.4	53.9/56.1	15033/17635	3/1.4	32.2/36.4
UK	658.3/836.7	56/57.2	11755/14628	1.8/2.6	31.1/34.2
Italy	669.9/858.9	56.4/57.5	11878/14932	2.4/2	14.01/20.5

Source : *SIPRI Yearbook 1991*, pp. 136-7.

Table 2

Expenditure on Military R&D by Select European Countries: 1986-97 (in US $ Million at 1995 constant prices)

Country	1986	1989	1992	1993	1994	1995	1996	1997
France	6200	7100	6800	6200	6000	5200	5000	4600
UK	5400	4100	3500	3800	3300	3300	3400	3300
Germany	--	--	2400	1900	1900	2000	2200	2100
Italy	540	750	600	620	590	560	680	-
Sweden	660	680	690	650	500	570	570	580
Spain	-	460	410	340	280	300	-	-

Source: *SIPRI Yearbook 1998*

Table 3

National Arms Sales and Exports by Select European Countries 1990-2000 (in US $ million at constant 2000 prices – Arms Exports in parenthesis)

Country	1990	1995	1996	1997	1998	1999	2000
UK	24,470 (9,140)	19,940 (8,170)	21,910 (10,430)	22,730 (10,940)	22,530 (9,950)	19,410 (6,630)	- (6,680)
France	20,740 (6,430)	13,940 (2,840)	14,280 (4,300)	15,170 (6,260)	14,810 (5,920)	12,370 (3,560)	11,060 (2,490)
Germany	12,930 (890)	5,790 (1,000)	- (500)	- (680)	- (650)\	- (870)	- (630)
Italy	- (980)	3,220 (660)	- (620)	- (750)	- (960)	- (840)	- (560)
Netherlands	1,920 (850)	1,140 (420)	1,190 (730)	1,520 (850)	1,490 -	- -	- -
Sweden	1,020 (460)	1,040 (370)	1,110 (340)	1,300 (340)	1,490 (390)	1,230 (400)	1,210 (480)
Spain	2,770 (360)	2,100 -	2,170 -	2,310 (500)	2,350 (450)	2,600 -	- -

Source: Table 7.1, *SIPRI Yearbook 2002*, p. 324.

Table 4

Major Cases of Company Privatisation in Europe 1990-2000

Country	Company	Year	Comments
Norway	Raufoss NFT	1990 1993	47% private share 49% private share
Sweden	Celsius Celsius	1993 1999	75% private shares 25% private company

Germany	IABG	1994	Sold to domestic company
France	Thomson-CSF	1998	33% private shares
Italy	Finmeccanica	2000	38% private shares
Spain	CASA	2000	Merger
Finland	Patria Industries	2000	26% sold to European companies
Poland	PZL group	2000	Private sale
Greece	Hellenic Industries	2000	43% private shares

Source: *SIPRI Yearbook 2002*, p. 342

Table 5

Structure of Major European Arms Companies in 2000

Sector	**Major Companies**	**Arms Sales in 1998 (in US $m)**
Aircraft	BAe	8,700
	EADS	1,500
	Dassault Aviation	1,870
	Alenia Aeronautica (Finmeccanica)	600
	New Saab (BAe)	410
	Aermacchi	180
Helicopters	EADS	830
	GKN Westland	-
	Agusta (Finmeccanica)	400
Missiles	MBDA	2,700
	Thomson-CSF	-
	New Saab	590
	LFK (DASA & MBDA)	390
	Diehl	180
Space	Astrium (EADS)	-
	Alcatel Space	240
	Alenia Spazio (Finmeccanica)	-
Electronics	Thomson-CSF	4,900
	BAe	-
	EADS	1,200
	Smiths	460
	Ericsson	260
Land Systems	Rheinmetall	2,00
	GIAT	1,200
	Royal Ordnance	800
	Vickers(Rolls Royce)	570
	Alenia Difesa (Finmeccanica)	300
Shipbuilding	DCN	1,840
	HDW	500
	Bazan	420

Source: *SIPRI Yearbook 2000*, p. 308.

References/End Notes

1. *For details, see, 'National Strategy for Home Land Security', Washington, D.C., September 2002, available at http://www.dhs.gov.interweb/assetlibrary/nat_strat_hls.pdf*
2. *'Major Armed Conflict' as defined by the Stockholm International Peace Research Institute (hereafter, SIPRI), refers to 'a contested incompatibility that concerns government / or territory over which the use of armed forces of two parties, of which at least one party is the government of a state, has resulted in at least 1,000 battle-related deaths in a single year'. See, SIPRI Yearbook 2004*. Oxford: Oxford University Press; 2004, p. 95.
3. *Note 2, p. 132.*
4. *Note 2, p. 305-07.*
5. *The genesis of this desire to find an European 'pillar' of the Atlantic alliance is traced to the early 1960s, when President Kennedy advocated for greater integration among the states of Europe and burden-sharing in the Atlantic. See, Jeffrey Becker, "The Future of Atlantic Defense Procurement", Defense Analysis*, 16 (1), April 2000, p. 20.
6. *An excellent account of arguments in favour of an 'Atlantic Defence Industry' has been given by Jeffrey Becker. See note 5, pp. 9-32.*
7. *For a detailed description of trends in global defence industry, see, Herbert Wulf (ed.) Arms Industry Limited*. Oxford: Oxford University Press; 1993. SIPRI Yearbook, published annually, also contains trends and analyses of issues related to military industry, production and trade. For an authoritative assessment of trends in European defence industry, see, Michael Brzoska, "Too Small to Vanish, Too Large to Flourish: Dilemmas and Practices of Defence Industry Restructuring in West European Countries", in Benzion Zilberfarb (eds.), *The Politics and Economics of Defence Industries*. London: Frank Cass; 1998, pp. 71-94.
8. *Europe accounted for roughly 18 per cent of the world's total military expenditure in the late 1940s. The same trend continued till the late 1960s. See, SIPRI Yearbook 1968*. London: Taylor & Francis Ltd.; 1968, pp. 200-1.
9. *For details of arms exports by major European countries, see, Table 1.D, SIPRI Yearbook 2002*, Oxford: Oxford University Press; 2002, pp. 230-40.
10. *SIPRI Yearbook 1981*, p. 7.
11. *Data related to various military systems produced by major European companies during the 1970s are available in Tables 3.1 and 3.2, note 10, pp. 84-90.*
12. *Globalisation of arms industries was a product of changes in the international security landscape. For details, see, Richard A Bitzinger, "The Globalization of the Arms Industry"', International Security*, 19 (2), Fall 1994, pp. 170-88. Also see, Keith Heyward, "The Globalisation of Defence Industries", *Survival*, 42 (2), Summer 2000, pp. 115-32.
13. *Terrence Guay and Robert Callum, "The Transformation and Future Prospects of Europe's Defence Industry", International Affairs*, 78 (4), October 2002, pp. 757-76.
14. *For details, see, chapters on 'Military Expenditure' and 'Arms Production' in SIPRI Yearbook 1995.*
15. *SIPRI Yearbook 1992*, pp. 366-67.
16. *For an early account of this trend, see, P. de Vestel, "Defence Markets and Industries in Europe: Time for Decisions?", Chailliot Paper No. 21, Institute for Security Studies (ISS, Western European Union), Paris, November 1995.*
17. *"Mergers win go-ahead for missile venture", Financial Times* (London), December 30, 2001.
18. *For transatlantic military industrial links and their effects, see, Jens van Scherpenberg, "Transatlantic Competition and European Defence Industries: A New Look at the Trade Defence linkage", International Affairs*, 73 (1), January 1997, pp. 99-122.

19. *SIPRI Yearbook 2002*, p. 312.

20. *"British Aerospace to Boost Denel", Defense News*, January 25, 1999.

21. *"DCN Approaches Privatisation with Task List", Defense News*, November 12, 2001.

22. *For details, see, "Country Briefing: Poland, an Uphill Task", Jane's Defence Weekly*, September 26, 2001, pp. 24-25.

23. *Details of the 'Title of Treaty' are available at www.bod.uk/issues/edi*

24. *For a detailed study on standardisation of defence systems as well as defence industries, see, 'Standardisation of Systems in Defence Industries of the European Union and the United States', report submitted to the European Commission by SPRU (Science and Technology Policy Research, University of Sussex), September 1999, available at www.europa.eu.int*

25. *Details of proposals, contained in the report titled 'European Defence Industrial Market Issues: Toward and EU Defence Equipment Policy', submitted by the CEC to the European Council on March 11, 2003, available at www.europa.eu.int*

26. *Erkki Liikanen, "Remarks at the European Parliament on Defence Policy and Industry", European Parliament Plenary Session, Strasbourg, April 9, 2002. The full report is available at www.europa.eu.int Also see, Erkki Liikanen, "The role of the EU and European Commission initiatives to promote a competitive European defence technological and industrial base", paper presented at the Forum Europe 5th European Defence Industries Conference on "Europe's New Defence Era", Brussels, May 23, 2000. The full version of the paper is available at www.europa.eu.int*

27. *The detailed guidelines for 'EU Code of Conduct for Arms Exports' are available at http://project.sipri.se/expcon/eucode.htm*

28. *This term is generally used by American scholars. European scholars refer to it as a common defence industrial base. In private conversations with many scholars from Europe, I find that they object to the use of such terms, which they feel gives a negative inward looking connotation.*

29. *See, Thomas Lansford, "Security and Market Share: Bridging the Transatlantic Divide in the Defence Industry", European Security*, 10 (1), Spring, 2001, pp. 1-21.

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