In this chapter we present the principal findings of our study and describe the direction of our future research efforts. The main findings are organized into two sections. First, we consider how U.S. industry has responded to globalization, the consolidation of European industry, and other trends. Then we focus on the broader implications of these trends, particularly with regard to opportunities for expanding U.S. and European cross-border business relationships. At the end of the chapter, we identify gaps in current research that will be addressed in the follow-up report for this project.

THE RESPONSE OF U.S. INDUSTRY TO GLOBALIZATION

• Numerous innovative cross-border strategic market sector agreements initiated by U.S. companies are emerging. Leading U.S. aerospace prime contractors and subcontractors are aggressively seeking creative new forms of cross-border linkages in efforts to gain or maintain foreign market access. The most innovative linkages appear to be long-term strategic teaming or joint venture agreements aimed at entire market sectors rather than the more traditional approach focusing on specific projects or systems. While most of these relationships are in the very early stages, they appear to have a high potential for promoting equipment standardization and interoperability as well as for promoting cost and innovation benefits through economic rationalization. There are indications, however, that these rela-
• **U.S. aerospace firms are not significantly increasing their acquisition of foreign defense aerospace firms and wholly owned subsidiaries.** There are few indications that U.S. defense aerospace firms have dramatically increased their interest in acquiring wholly owned foreign subsidiaries, although there seems to be some increase in U.S. M&A activity overseas in the defense industry as a whole. As noted above, the preferred industry-initiated cross-border business relationships appear to be teams and joint ventures. There are some indications that this preference is driven in part by the U.S. and European regulatory environments. Historically, U.S. firms have apparently favored teaming because of the flexibility it provides and because of its lack of long-term commitment. This may be changing, however. It is unclear what the benefits and costs of this preference are from the perspective of the U.S. government and the U.S. Air Force.

• **Teaming and joint ventures with non-UK and non-Europe-based firms are increasing.** In the past, most U.S. direct investment abroad as well as other types of U.S. industry-initiated cross-border investment and other business relationships have involved UK firms. This was in part because U.S. government technology security and third-party transfer concerns were often more easily resolved with UK companies than with companies from other countries. Over the past several years, however, there has been an apparent increase in M&As, teaming, and joint ventures with non-UK-headquartered European companies as well as with non-European companies. It is unclear from the open literature what the implications of this trend are for technology security and equipment standardization issues. Depending on the circumstances, they sometimes contribute to standardization and interoperability and sometimes do not. More often they appear to contribute to greater market competition and greater choice available to the Air Force, as well as to reduced procurement costs.
IMPLICATIONS OF EUROPEAN CONSOLIDATION AND INCREASED AEROSPACE GLOBALIZATION

- **U.S. industry collaboration with one country’s firm increasingly means collaboration with many countries’ firms.** The European defense aerospace industry is in the process of consolidating down to one or two dominant European transnational companies in nearly every major product sector. The three leading European companies—BAE Systems, EADS, and Thales—are interlocked with each other and with many other European firms through a complex web of joint ventures, collaborative programs, cross-ownership, M&As, and the like. Other important foreign industrial bases, such as those of Israel and Korea, are also consolidating and are increasingly forming strategic links with the new European megafirms (as well as U.S. firms) and with many other foreign firms located in different parts of the globe. The result is that it is increasingly unrealistic for U.S. government policymakers and industry leaders to think in terms of bilateral collaborative relationships between the United States and specific European or other foreign countries. The traditional U.S. government and U.S. industry approach of negotiating bilateral, country-specific agreements, which is continuing under the DTSI reform initiative, may have to be modified or adjusted as European and other foreign national defense aerospace firms transform into truly multinational megafirms. ¹ This may also affect the United States’ traditional emphasis on cross-border business relationships and investment with the UK. These changes may have significant implications for U.S. technology security issues.

- **Consolidated European and other foreign firms mean potentially more equal partners as well as stronger competitors.** The consolidation of the European defense aerospace industry is producing pan-European companies of roughly the same size and sales turnover as the leading U.S. firms in many product sectors. These new, pan-European companies seek to be more financially and technologically competitive in more product ar-

¹U.S. government examination of issuing umbrella program-wide export licenses is one approach that helps deal with this situation.
eas with the leading U.S. firms. Such firms are eager to offer European solutions for European and third-country weapon system requirements that are fully competitive with U.S. products. Similar consolidation trends are visible in other foreign countries. The Korean and Israeli aerospace industrial bases, for example, are undergoing extensive consolidation and are expanding their links with third-country firms.

- **European and other foreign firms seek U.S. market access but resent barriers.** With an overall smaller market and smaller R&D funding base even when all the EU nations are included, the newly emerging pan-European firms and other foreign companies strongly desire greater access both to the U.S. market and to U.S. technology. However, European and other foreign firms are insisting with increasing aggressiveness on more equal business relationships with U.S. firms as well as on less restrictive U.S. policies regarding access to the U.S. market, technology transfer, and third-party sales of technology and products. Concerns over these issues, in addition to a variety of other economic and political factors, are also encouraging the new pan-European firms to offer European solutions for European and third-country system requirements in direct competition with U.S. firms and products.

- **European and other foreign firms view the acquisition of U.S. firms that primarily service DoD as the most effective means of penetrating the U.S. market.** The most successful recent penetrations of the U.S. market by European firms, especially those headquartered in the UK, have been through the acquisition of existing U.S. firms rather than through joint ventures or programs. To date, however, newly acquired foreign subsidiaries primarily service the U.S. DoD and are often restricted with regard to technology flow back to Europe. Thus, such market penetration does not necessarily promote equipment standardization or interoperability or help close the capability gap with Europe. In addition, while DoD officials believe that the CFIUS process has been significantly liberalized over the past decade, European industry still views U.S. regulation of foreign direct investment to be onerous.
• **Non-European foreign firms are forming strategic relationships with European and U.S. firms, potentially enhancing competition but complicating standardization and interoperability objectives.** The defense industries of some other important non-NATO allies have been aggressively seeking U.S. and European market access through the formation of new business relationships based on strategic alliances. Israeli industry has been particularly active in this area, forging important business alliances with both U.S. and European companies. In many cases, these alliances have clearly increased competition in key niche product sectors within both the U.S. and European markets in a manner that appears to be beneficial to the Air Force. In some cases, however, these relationships seem to have undermined U.S. attempts to promote equipment standardization if not interoperability. In addition, based on the open literature, the efficacy of the controls on technology security and third-party transfer remains unclear.

• **The findings above suggest that European and other foreign industry consolidation presents U.S. government and industry with unprecedented opportunities as well as risks.** If new cross-border collaborative business relationships that are mutually beneficial take hold, the consolidation of European and other foreign industries greatly increases the prospects for allied procurement of standardized or interoperable systems, thus enhancing the cohesion of U.S. alliances and the ability to conduct combined operations while potentially reducing system costs. On the other hand, the persistence of frictions over technology transfer and security issues and over foreign direct investment, combined with the increased capabilities and competitiveness of European and other multinational defense industries, means that the Europeans and other allies may be tempted to move increasingly toward indigenous solutions and more widespread global competition with U.S. firms. This could reduce alliance cohesion and equipment standardization and interoperability. Thus far the evidence is mixed, but there appears to be an emerging trend toward more nonstandardized indigenous
solutions to European weapon system requirements, at least on the platform and major system and subsystem levels.  

DIRECTIONS FOR FUTURE RESEARCH

The findings of this initial study point to the need for greater understanding of the opportunities and problems associated with an increasingly globalized and consolidated aerospace industrial base. Three issues in particular stand out.

First, the tension between the goal of enhanced competition and that of allied equipment standardization may be indicative of a potentially much greater tension inherent in the three primary Air Force objectives regarding defense industry globalization, particularly when the national security objective is balanced against the other two. Put another way, to what extent are greater competition and allied equipment standardization possible given the United States’ need to safeguard its defense technology in the interests of national security? This question needs to be explored in depth.

The outlook for increased competition and interoperability depends in large part on the U.S. regulatory environment, which leads to a second key issue in need of further research. As discussed in Chapter Four, critics of the existing regulatory regime—which is designed to provide technology security and to protect domestic capabilities—have alleged that the regime impedes U.S. industry–initiated attempts to gain the benefits of greater globalization. In response to such concerns, a large-scale effort was launched under the Clinton administration to reduce these impediments by reforming the U.S. export regime. In Europe, the six leading defense producers have initiated export control harmonization through the Letter of Intent (LOI) and Framework Agreement process. Significant questions remain, however, with regard to the impact of these reforms. What is the effect of these measures in enhancing globalization while also protecting U.S. national security objectives such as technology se-

2A dramatic case in point is the Hungarian decision, finalized in late 2000, to acquire the JAS 39 Gripen fighter, marketed by a BAE Systems/Saab joint venture, instead of the Lockheed Martin F-16. This decision was closely followed by a similar decision by the Czech Republic. U.S. government and industry officials fear a similar decision by Poland.
curity and maintaining critical national capabilities? What do key government players consider to be potential problems with the reforms? The follow-up study will address these questions in detail.

The third issue concerns the need for a deeper understanding of the industrial, political, and military environments in Europe. The consolidation of the European aerospace industry, as well as that of other important foreign industrial bases, is resulting in a changed landscape for global collaboration and competition in the aerospace industry. But to what extent and in what specific ways will the changes taking place in Europe affect the prospects for global reform and greater transatlantic collaboration? And how will political and military factors in Europe affect prospects for the expansion of the U.S. defense industry into overseas markets? The new study will take a closer look at the opportunities and problems involved in pursuing new cross-border collaborative business relationships.

Further analysis of these broad questions, together with additional in-depth case study analysis of the type described in the previous chapter, will help fill the gaps in our understanding and provide guidance to the Air Force in developing new strategies and policies regarding the globalization of the industrial base.