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Key enablers of the European security industry performance

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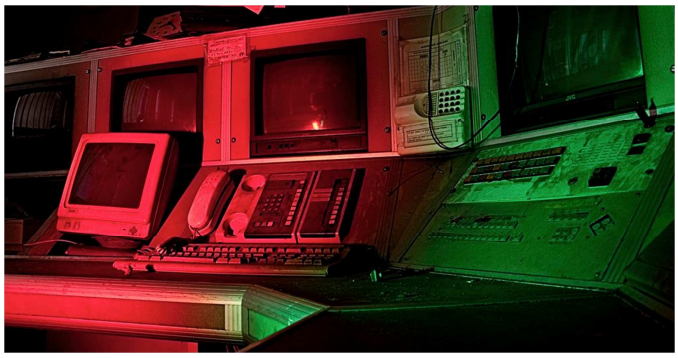

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- **What is the security industry?**
- **What have we learned so far from the EUSECON project?**
- **What issues should be addressed by an EU security industrial policy?**

Summary: One of the research areas of the *New Agenda for European Security Economics* (EUSECON) is society's response to insecurity. Solutions to enhance security often involve the development and supply of specific goods and services. This has led to an industry which has progressively evolved through the 20th century. Yet, after the 9/11 attacks, the security industry was subject to growing demand. Moreover, it raised the interest of academics and policy makers aimed at assessing its performance in terms of the efficient supply of sound security solutions. This briefing summarizes the main findings of the research already conducted, highlighting key issues for policies focused on enhancing this industry.

Introduction

The security industry can be defined as the industry which develops and supplies goods and services aimed at safeguarding people from certain events, which, due to their detrimental effects, could create concerns and feelings of insecurity.

Since there are many sources of insecurity, this industry can be considered quite large. EUSECON research has focused on the protection of citizens from the threat of terrorism and organised crime. Even when narrowing the research to this area, the boundaries of the sector are hard to define. Whereas the defence industry is mostly related to external security, internal security is usually addressed by what is known as the security industry (EC, 2010). Yet, many products used for security may be used for defence purposes and for other activities not directly related to security (e.g. ambulances used for healthcare, but also for transporting casualties after a terror attack). This large dual role of security products tends to blur the boundaries of the sector.

The security industry includes a large variety of suppliers of goods and services which cut across many manufacturing and servicing sectors. An attempt has been made to measure the size of this economic sector. Unfortunately, data is scarce and lacks any accounting rationale. However, based on different references a first rough estimate indicates that revenues in this sector are approximately €59 billion per year, which represents only 0.48% of EU GDP

(Martí, 2011). This means that the sector, despite its strategic relevance, is rather small, and in fact even smaller than defence. The size of services (mainly manned guarding) represents nearly half of sector revenues.

Basic market conditions

Different from defence, in which the State is uniquely responsible, safeguarding from insecurity requires a close collaboration between the public and private sectors. Governments, owners and operators of critical infrastructures, enterprises and individuals contribute to enhancing security and are therefore the main customers of this industry.

Assessing the main drivers of demand is difficult as calculating the utility of the investment, that is to say the amount of avoided damages, is a complex task. Apart from ethical considerations, investment decisions are made in an environment of bounded rationality (Simon, 1978), where heuristic methods, insecurity perceptions, other agents' behaviour, and discretionary decisions may play a role in determining the demand for security. Such an environment hinders the optimal allocation of resources.

Governments play a fundamental role in the security market

Technology plays a fundamental role in the security market and innovative solutions are especially important in a market where protective measures will be challenged by countermeasures unfolded by terrorism and organised crime. Hence the demand for new and sophisticated products is perennial having in mind that the perception of insecurity is never totally appeased. Thereby, product complexity, immatureness of technology, and the difficulty to develop and agree on product standards able to stimulate demand (quite relevant in a market characterized by important network effects), restrain the growth of this economic sector.

Main market segments

The security market involves many different companies as creating security requires a large variety of products and services. Apart from manned security services companies, the industries related to electronics and sensors (e.g. CCTV), communications and information systems are the most important producers in this sector, since they play an essential role in increasing awareness about potential threats. Other relevant industries are mobile platforms (air, sea, and land) as well as vehicle and personal protective vests. Most security products are made from generic technologies supplied from other manufacturing sectors (Stankiewicz, 2009).

The key role of the government

The government plays a key role in this market. The first role is as an entrepreneur since some companies, especially for systems considered essential to security, are State-owned. The second is as a supporter of the industry in terms of aids, especially in the field of R&D. The third is as a purchaser, the public sector being one of the main clients, and the leader for some innovative product and service developments. Lastly, the government is a market regulator, through the setting of minimum security requirement with the aim to achieve the desired security level when private initiative falls short, since positive externalities of investing in security will not benefit the private agent. This way, governments have a considerable influence in shaping demand and other market conditions.

Market structure, conduct and performance

The security market is characterised as having many buyers and sellers. Yet, from the demand side there are some market segments where the public sector is the only buyer. However, as opposed to defence, public administration purchases are not centralized. This means a more fragmented demand with many purchasers with smaller purchasing and bargaining powers. To a wide extent, barriers to entry determine the market structure. Economies of scale, product differentiation (achieved mainly through R&D), absolute costs advantages and sunk costs favour the formation of oligopolistic and monopolistic structures which may impair market efficiency. However, in some market segments, such as security products for homes

and small firms, there are many value-added resellers, local distributors and installers, possibly too many for a good productive efficiency due to their small size. The competitive advantage of these companies is mainly rooted in their flexibility to adapt and satisfy users' needs. Imports are common in this market, reducing the chance of national monopolies. Nevertheless, large government purchases, such as national biometric identity cards and emergency communication systems, do usually involve national industries.

The large number of suppliers and competition in most market segments improves market performance by limiting the price-setting ability of market participants. However, there may be more chances to fix prices in high-end markets like public administration or organisations managing critical infrastructures, where there are only a few or even a single provider, capable of providing the complex products required. Competition within the supply chain may also be restricted due to vertical integration and long-term agreements.

Product strategy in the security market mainly focuses on product differentiation through often intensive R&D activities, a less aggressive way to increase market share than price wars. The large variety of security products in many market segments suggests that this strategy is widely used. Whereas the industry may overinvest in too much variety, it seems that consumers do appreciate such differences in terms of better supporting their security needs.

Another area of potential low market performance is contract execution where problems related to principal-agent relations, i.e. hidden action and hidden information, may impair on efficiency (Arrow, 1985). This may be especially relevant in security services (manned guarding) and the supply of complex solutions which involves developments where the capability to monitor suppliers' behaviour may be hard to achieve.

EUSECON has also assessed the performance of this industry. Allocative efficiency is achievable in many market segments, as explained before, due to rather strong competition. In markets where there are few providers, the changing percentage of market share and top companies suggest also a rather competitive environment. Yet, some government acquisitions may be more subject to bilateral monopoly where the mentioned principal-agent problems, namely adverse selection and moral hazard, can be a source of low market performance. The market structure does reflect the search of productive efficiency through a bigger size to profit from economies of scale, scope and learning (e.g. CCTV suppliers). Lastly, dynamic efficiency, namely the rate of technological progress, can also be seen as rather high in this industry boosted by user needs and the evolving threat of terrorism and organised crime. Yet, the technical complexity of security solutions, the immatureness of some technologies, and the small size of some market segments in term of demand impede the consolidation of many markets segments that remain in a development stage where only prototypes and pilot projects exists (e.g. biometrics, RFID in the supply chain). In such cases, government support and public purchases (pre-commercial procurement) may help to disentangle this situation. Here the danger is the tipping tendency of the market which provides advantages to first movers. Hence, openness, transparency, objective awarding, rigorous monitoring of aids, and even compulsory licensing may be required to avoid such tendencies.

Security goods often depend on advanced technologies, which involve large R&D spending

Finally, the different views on security on both sides of the Atlantic create an environment where US industry faces a larger domestic demand and benefits from more R&D support than the European industry. That means on the one hand that the EU industry can free-ride on developments from the US, but on the other hand that the industry is unable to play a leading role in many market segments. Thus the European industry faces a somewhat adverse environment when it tries to sell their security systems and products worldwide. Furthermore, the need to be competitive is displacing manufacturing capabilities to Eastern Asia,

while keeping design and integration capabilities (the ones which add more value to the product) in Europe. Whereas this model is working well, it will inevitably open the door in the long run to new competitors from these countries, as shown by the growing capability of Eastern Asian companies to sell their products internationally.

Policy recommendations

This study has identified several areas where the security market may suffer from low performance. Whereas horizontal industrial policies may be applied to solve some of these problems, since they are common to many industries, there are cases, where inefficiency can be more specific to this industry. The diversity of the industry suggests that policies need to be fine-tuned, on a case-by-case basis to be effective. This requires a cost-benefit analysis to assess their adequacy, something that can only be done with a deep knowledge of the industry, which certainly demands further research. On top of that, policies will require *ex post* analysis to assess their effectiveness.

One of the main problems in security is the proper allocation of resources to this activity. Investment decisions are difficult when risks are not easy to measure and performance of solutions to abate these risks is arduous to assess (and designs only exist as blueprints). This may give way to insufficient or disproportionate investments and industrial solutions whose effectiveness is not demonstrated. Information problems (including asymmetries) may impair decision-makers and result in suboptimal choices. The promotion of information diffusion and exchange (which favours coordination of market agents when it aims to improve market performance), may therefore be a matter of industrial policy.

Areas able to increase the performance and capabilities of this industry include the consolidation of a security market in Europe (e.g. barriers due to diverse product certification), the collaboration of Member States in some security complex programmes where cooperation may make more sense than separate but similar national projects, profiting from the externalities of US technological advances in the security field when they fit European demand, and the reuse of defence and civilian technologies and expertise in the development of security solutions.

Credits

This EUSECON Policy Briefing was authored by Carlos Martí Sempere from Ingeniería de Sistemas para la Defensa de España. The views expressed in this briefing are the authors' alone.

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