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REVIEW

La red global de cables submarinos. Geopolítica y seguridad de una infraestructura crítica

Rafael García Pérez

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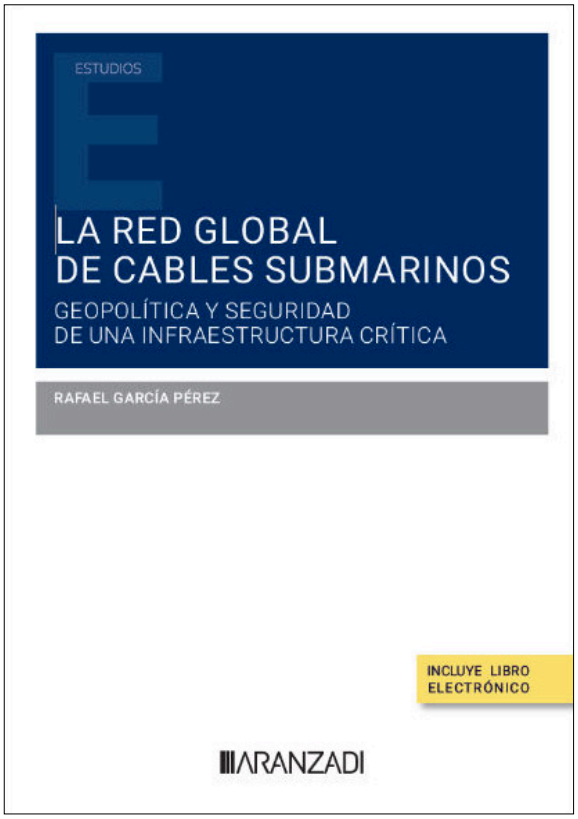

Rafael García Pérez, in addition to being a professor of International Relations accredited as a university professor, holds a PhD in History, a Diploma in Constitutional Law and Political Science, and a Diploma in National Defence Studies from CESEDEN, among other academic merits.

He is the author of numerous articles and essays on issues related to global trends, security challenges and threats, and although he has extensive knowledge of security and defence issues, his particular concern for maritime affairs and maritime security issues should be highlighted, which has allowed him, for example, to participate as an independent expert in the consultation process carried out by the Department of National Security (DSN) in the recent review of the National Maritime Security Strategy (2023). He is currently part of the team of advisers to the International Legal Advisory Service of the Ministry of Foreign Affairs, European Union and Cooperation, for the extension of the continental shelf before the United Nations Commission on the Limits of the Continental Shelf.

Highly aware of the enormous importance of maritime issues, in this book, *The Global Submarine Cable Network: Geopolitics and Security of Critical Infrastructure*, he transports us to the almost unknown world of the seabed, the ocean floor, emphasising its importance, and in particular that of the submarine telecommunications infrastructure, which is critical for today's society, something of which we are not yet fully aware.

The work begins with a magnificent foreword by Captain Antonio Notario, Head of Political-Strategic Planning at the Department of National Security, and one of the most renowned national experts on maritime security, highlighting the relevance and timeliness of the work in a changing world where the seabed is becoming increasingly important, mentioning the key elements of the submarine cable network that the author will discuss later in the book: the complexity of international law, the technological and industrial implications, geopolitics and national security, all framed within the context of interdependence and the transformative power of economic connections in diplomacy and international relations, in a scenario marked by the long-distance race between China and the US for supremacy in international hegemony.

Regarding the general content of the work, it should be noted that it is not limited to the security of these critical infrastructures, but also addresses the relevance of the global submarine cable network itself, analysing it from various perspectives such as geopolitics, international law, its technological and industrial implications, and national security. This allows the author to identify the main actors in the configuration of the global submarine cable network: states, international organisations and large private corporations. Taking a comprehensive approach, he analyses their role as geostrategic players, acting as major centres of power and influence (they have the will and the capacity to do so). The book opens our eyes to how much is at stake on the seabed: technological supremacy, leadership in the development of artificial intelligence, and above all, who is the protagonist in this new dimension and its relevance in power relations (geopolitics).

Professor García's work invites us to explore all these issues in a systematic and structured way. He begins with a glossary of terms that will allow us to better understand, from a technical perspective, what the submarine cable network is and what its various components are.

He explains that 99% of international data traffic currently travels through the submarine fibre optic cable network, making it the critical infrastructure for digital connectivity between countries, and that the United Nations has described it as the communications infrastructure of paramount importance to the global economy and the national security of states. The cables deployed on the seabed normally follow the same route as traditional shipping lanes, where merchant ships responsible for global maritime trade sail, accounting for approximately 90% of goods transported internationally.

Professor García points out that the global cable network is designed to be redundant, multiplying the number of cables that make the main connections, but the fact that they follow traditional shipping routes means that they are subject to similar geographical constraints. Thus, maritime 'choke points' such as Malacca and Suez are also critical points in the submarine cable network, highlighting the ever-present influence of geography on geopolitics, in this case in its new dimension of competition in cyberspace, where China and the United States are the main players, rivalling each other above all in content generation and in the protection of information transiting the network, which is essentially a struggle for digital hegemony.

The author analyses some of the most salient features of this network, such as the largely private nature of the management, laying and maintenance of submarine cables, and where the global Internet giants, known as GAFAM (Google, Amazon, Facebook, Apple and Meta), are increasingly prominent players. This submarine network is vulnerable to both physical attacks on the cables and cyberattacks (against the systems that manage the network or against the network itself), which is a difficult reality to manage in the absence of an appropriate legal framework. The United Nations Convention on the Law of the Sea (UNCLOS) is very limited, as it is essentially oriented towards states, while non-state actors such as GAFAM are becoming increasingly relevant. In addition, most of the maritime areas where the cables are laid are not subject to the sovereignty of any state.

The book addresses all these issues in a five-chapter structure, which systematically analyses the key elements of the global submarine cable network.

The first chapter analyses the legal dimension of an infrastructure that makes communications possible across the globe, but which does not have a specific international legal regime. After a brief historical review of the most relevant regulations since the 19th century, the current situation is analysed from the perspective of UNCLOS, a legal framework that is essentially limited to the territorial waters of states and does not provide a coherent and adequate regime for their protection. In fact, the author points out that, under international law, submarine cables are legitimate military targets, and he draws on various real-life examples to

emphasise this situation and the need for an adequate regulatory framework for fibre optic cables.

The second chapter seeks to identify the main actors involved in submarine cable networks. Although these are mostly private companies competing with each other, the author questions whether the strategic design of the networks is driven by the interests of these companies, whether it is directed by states, or whether it is actually a combination of both. With regard to security, he points out that knowing the players makes it easier to identify vulnerabilities, either against the network itself or against the information circulating through it.

Although in the early days, the high cost and complexity of managing the cables meant that international consortia (usually centred around a large telecommunications company) had to be used to sell the use of the cable, the new reality is that increased demand in recent decades has led to full ownership, where content companies (GAFAM), the traditional customers, have become owners (of the cable itself and what it transmits), and their financial and technological capacity is allowing them to drive their competitors out of the market, imposing conditions of access and exploitation that are even above the sovereign authority of many states. This forces countries without technological capacity to accept the conditions or give up connectivity, and the states where these large corporations are based (GAFAM are all American) have the political and regulatory capacity to use these companies as vectors in geopolitical competition. Other business actors involved in the manufacture, laying, repair, recycling and removal of submarine cables are also analysed.

Building on the above analysis, the third chapter delves into the geopolitics (power relations explained on the basis of geography) of the global submarine cable network, addressing both its physical dimension (the material structure of the network and the geographical location of the cables) and its virtual dimension (the content that circulates through the network, the exploitation of user data, and, above all, the development and control of a new technology that will be the driving force behind the new production model: Artificial Intelligence (AI). These elements are addressed from the perspective of connectivity and the use that different states make of the Internet (the US uses it as a mechanism for the extraction and economic exploitation of user-generated data; China as a tool for control and surveillance; and Russia as an instrument for subverting other states).

Geopolitical competition (power struggle) for control of the network is becoming increasingly intense; it has gone from being a critical infrastructure in need of protection to an instrument of influence and a threat factor. China and the US, the two main players, are not only competing for control of the network, but also for the data that flows through it, which is indispensable for the development of AI.

Professor García delves into the three main areas of this geopolitical competition: business, security and technical-diplomatic, paying special attention to the latter in this chapter (as in the case of the US veto on Chinese companies, the struggle for the deployment of new large projects, etc.).

The chapter ends with a very interesting view of the geopolitics of cyberspace, concluding that control of the network will allow access (presumably illegitimate) to the information circulating through it, which gives an idea of its strategic importance and why it is therefore the central object of geopolitical competition between the major powers.

The fourth chapter analyses in detail the issue of submarine cable security. It addresses both unintentional threats (natural phenomena, accidents resulting from human activity, etc.) and intentional threats (sabotage of the physical integrity of the network, hostile cyber actions directed at cable management centres either to interrupt data traffic or to extract information transmitted via the cable). The author delves specifically into the protection of submarine cables in the North Atlantic, the actions and initiatives taken by NATO, the European Union, and the states themselves.

The work concludes with a final chapter devoted to the role of Spain, and the Iberian Peninsula in general, in the global submarine cable network, given its excellent geographical position for connectivity between Africa, America and the Middle East. It details the characteristics of the different cables that pass through our waters, how their laying has evolved, and the importance of the main stations and landing points. It argues that in the coming years, 70% of the data reaching Europe will do so via the Iberian Peninsula.

Rafael concludes his work with some final reflections that invite the reader to reflect on the enormous importance of the global submarine cable network, both for its physical size and for the information and data that circulate through it. He points out that although the network initially received little attention from states (different jurisdictions, different companies, insufficient regulation, impossibility of protecting its integrity, etc.), it is now becoming the main focus of geopolitical competition between major powers for control of cyberspace, essentially the US and China, and is characterised by the presence of large technology companies (mostly private, such as GAFAM, in addition to Chinese companies) where governments express their interest in using the network to project power.

Professor García also reflects on the worrying passivity of the EU with regard to the security of information transmitted via cables, which in practice means renouncing European digital sovereignty. Between accepting submission or opting for rupture, he ventures to propose various substantive measures with a view to increasing Europe's role in the geopolitical game for control of cyberspace.

The centrality of the submarine cable network to the international agenda is undeniable, and if the next technological frontier is the development and application of AI, the immense volume of data and the ability to process it almost instantaneously can only be achieved through cables.

Professor Rafael García's book is not only detailed and solidly argued, but also highly relevant at a time of growing geopolitical competition in an increasingly multipolar world, with the United States and China as the main poles, and where data and information, the main fuel for the development of AI, travel through submarine

cables. Despite being a little-known reality, control of the submarine cable network, both in its physical and cybernetic dimensions (the data that travels through the network), has become an essential and priority objective for maintaining (in the case of the US) or achieving (in the case of China) global hegemony in the coming years. The author introduces us to the ins and outs of this new geopolitical reality in a way that is easily understandable for non-experts, but above all entertaining, allowing the reader to take an enjoyable and interesting dive into these submarine matters.

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