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**The Role of Technology in Orienting U.S. Foreign Relations:
U.S.-Chinese Technological Competition between Trade
War and Global Dominance**

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for a Master Degree in Literature and Civilization**

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Dedication

We dedicate this work:

to our dear parents;

to all our teachers;

to all the members of our families;

to our relatives and closest friends;

to our classmates, and all the members of the Department of English;

and to all those who care for us.

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Notwithstanding the above support for this dissertation, we hereby declare that any errors, mistakes, or omissions are solely our own. Thus, we accept to take full responsibility.

Abstract

By the turn of the century, the impacts of technology on international affairs and foreign policy, especially those of manufacturing technologies, are pervasive through transforming power among nations. Correspondingly, as for the United States, technological supremacy has always been a priority in conducting both homeland and foreign policies to preserve its status as the sole superpower. However, the use of this tool has become more complicated in the face of growing nations such as China. The present research attempts to investigate the role played by high technology in shaping the U.S. foreign relations towards attaining its national interests. In connection with the U.S-China relations, the substantial development of China's technological competency, notably in wireless networking (5G), has entirely shifted their relations to open geopolitical conflict. This study sheds light on the technological race as a new dimension of U.S. foreign affairs to determine whether this struggle is a trade war or a rivalry towards global dominance. To fulfil these objectives, a combination of the descriptive-analytical method and case study approach is used, which includes some numerical data converted into graphs to express the phenomenon under investigation by both quantitatively and qualitatively. Such methods are adopted to provide rounded, detailed illustrations of the factors that affect U.S. foreign relations. The results show that the technological advancement is a pivotal instrument in maintaining the U.S. global hegemony and emerging China as an independent technology polar puts the American domination in critical condition. The study concludes that the U.S. government uses political, economic, and diplomatic measures against Chinese firms such as Huawei to protect its technological superiority.

Keywords: 5G Wireless Technologies, Advanced Technology, Global Hegemony, Huawei Ban, International Relations, Trade War, U.S.-China Relations, U.S. Foreign Policy.

List of abbreviations

5G: Fifth Generation Telecommunications Networking.

AI: Artificial Intelligence.

BRI: Belt and Road Initiative.

CCP: Chinese Communist Party.

CEO: Chief Executive Officer.

CIA: Central Intelligence Agency.

DoD: Department of Defense.

DoS: Department of State.

DSR: Digital Silk Road.

E-: Electronic.

FBI: Federal Bureau of Investigation.

G-20: Group of twenty.

GDP: Gross Domestic Product.

Gov: Government.

GPS: Global Positioning System.

ICT: Information Communication Technology.

IoT: Internet of Things.

IP: Intellectual Property.

IRA: Russian Internet Research Agency.

IT.: Information Technology.

MIC2025: Made in China 2025.

NASA: National Aeronautics and Space Administration.

NFS: National Science Foundation.

NIST: National Institute of Standards and Technology.

NPC: National People's Congress.

NSS: National Security Strategy.

NSTC: National Science and Technology Council.

OES: Bureau of Oceans and International Environmental and Scientific Affairs.

OSTC: Office of Science and Technology Cooperation.

OSTP: Office of Science and Technology Policy.

PCAST: President's Council of Advisors on Science and Technology.

PLA: People's Liberation Army.

PRC: People's Republic of China.

R&D: Research and Development.

RoC: Republic of China.

S&T: Science and Technology.

SEP: Standard Essential Patents.

STAS: Office of Science and Technology Advisor to the Secretary of State.

STI: Science, Technology and Innovation.

U.S.: United States.

USAID: United States Agency for International Development.

USTR: United States Trade Representative.

WMD: Weapons of Mass Destruction.

WTO: World Trade Organization.

WWII: Second World War.

WWW: World Wide Web.

ZTE: Zhong-Xing Telecommunications Equipment.

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General Introduction

The United States holds a prominent position in terms of technological progress and national competitiveness, which is reflected in preserving its global unipolar hegemony decades ago. As a technical dimension of international relations, technology is playing an increasingly significant role in shaping U.S. foreign policy. Such importance is mainly attributed to the considerable overlap between advanced technologies and national security, economic growth, and struggle for supremacy.

Technological prowess in the eyes of U.S. successive administrations is one requirement of power. However, China's rapid progression in research and innovation with a strong sense of self-reliance is changing the role played by technology in U.S.-Chinese relations to be an area of strategic rivalry between the two states because of the differences in political values and geopolitical pursuits. While the U.S. is using the leverage of advanced technologies to maximize benefits and maintain its global supremacy, China, with its unique political system, has made enormous investments and implemented policies based on a broad range of technological innovations to contribute its economic growth, military capability, and global influence.

1. Background of the Study

Today's globalized world is witnessing an inflection point from the information age to the connected age, which is called the fourth industrial revolution, that will be a conflict stage for domination and influence. In this respect, the remarkable growth of China's scientific and technological capabilities in recent years has raised many important questions for international political theorists about its worldwide role. Many analysts believe that China is the only power that can threaten the status of the United States. As an emerging digital giant, China has showed the country's determination to grab the global leader in the next industrial revolution through

controlling critical technologies such as artificial intelligence AI, big data, internet of things IoT, and the fifth generation of communication networks 5G. Currently, the latter has become the center interest of China's technology firms. Since 2018, the Chinese companies, notably Huawei, hold a narrow primacy in the race to 5G by dint of large-scale investments and government support.

However, the U.S. has raised economic and security concerns regarding the Chinese progress in manufacturing the global network equipment; it responded by implementing various measures to protect its interests. For instance, under the Barack Obama administration, the U.S. had made several attempts to prevent Chinese companies from investing in the domestic markets and gradually limited their access to U.S. technology through commercial procedures. Fast forward to 2016, and after coming to White House, Donald Trump has adopted a strict policy toward China's technological activities and considered its dominance in 5G networks as a threat to U.S. preeminent stature. President Trump declared his direction as regards 5G technology:

5G networks will absolutely be a vital link to America's prosperity and national security in the twenty-first century. It will make American farms more productive, American manufacturing more competitive, and American health care better and more accessible [...] We cannot allow any other country to out-compete the United States in this powerful industry of the future; the race to 5G is a race America must win (White House , 2019).

Trump's first step to diminishing the development of China's high-tech industries included a range of increasing pressure over Chinese companies such as bans and trade restrictions. These moves have shifted the US-China relationship in a fundamental way, which engaged them in an intensive economic and technological conflict. In the short term, this competition is inevitable; it is generated from China's efforts to rival the U.S. and pursuing an independent technological

development path, and the American's refusal of rising another substantial power with a distinct ideology that could threaten its status as global supremacy in science and technology. In this vein, Michael Pillsbury, an advisor to President Donald Trump, provides a succinct note of this issue, he declared that "The Americans are not going to surrender global technological supremacy without a fight, and the indictment of Huawei is the opening shot in that struggle" (Sanger, Benner, & Golds, 2019). The present research examines the impact of advanced technologies in U.S. foreign affairs choices to obstruct the Chinese global influence. These options are explored theoretically in the first two chapters and empirically taking the U.S. ban of Huawei company as a case study in the last chapter.

2. Statement of the Problem

Advanced technology has emerged as a new frontier in contemporary U.S.-China relations. As the digital industry becomes a vital resource in determining the global status of nation-states, China is advancing its technological competency by launching massive initiatives that are beginning to bear fruit through leading high-tech sectors such as the development of 5G wireless networks. On the other hand, the United States, through political and economic channels, attempts to restrain the expansion of Chinese digital equipment. In light of these developments, the present research questions the recent issues of U.S. foreign policy under the technological competition with China and attempts to provide an investigation to distinguish between the economic and dominating motives behind this competition. It also examines the impact of advanced technologies on the U.S.-Sino bilateral relations, along with its geopolitical repercussions.

3. Aims of the Study

This dissertation aims at shedding light on advanced technologies as a new dimension in U.S. foreign relations in the digital age. It goes through the following specific objectives:

- i. Distinguishing the typical partners of the interaction between new technology and international relations.
- ii. Exploring the implication of telecommunication networks technologies as a tool in U.S.-Chinese economic and geopolitical competition.
- iii. Investigating the role of high technology in shaping U.S. foreign policy.

4. Research Questions

The current study seeks to answer the following specific research questions:

Primary Research Question:

- 1) What is the role of technology in U.S. global domination, and how does it affect its relations with China?
- 2) Is the U.S.-Chinese technological competition a trade war or a struggle for global influence?
- 3) What are the foreign policy options that the U.S. adopt to maintain its technological edge?

Subsidiary Questions

- 1) How does technology affect international affairs?
- 2) What are the regulatory mechanisms through which the U.S. adopts its foreign policy in the technological issues?
- 3) If America is the leader of a capitalist economy where one of the main tenets is the free market, then how is it a capitalist nation, and "the powerhouse of free trade" puts stringent control over Chinese companies?

5. Research Hypothesis

On the ground of the above-stated questions, the hypothesis that will be tested is based on the assumption that technology as the core driver of the political, economic, and military dominance, is a critical instrument in the U.S. global competitiveness for which the whole-of-government policy has embarked towards its strategic rivals to serve its national interests as a world superpower.

6. Research Methodology

The present study is a qualitative research based on a descriptive-analytical approach combined with a case-study method, which includes statistics, graphs, and maps to provide rounded and detailed illustrations of the factors that affect U.S. foreign relations. Moreover, the historical analysis is integrated into the second chapter to unveil the changes that are produced by technological development in the United States' foreign policy decision-making, and trace back the different stages of the U.S.-China bilateral relations.

The descriptive-analytical research design is adopted to ensure effective analysis of subjects related to international relations and foreign policy; it aims at describing and explaining phenomena, consequences, and relationships. Jesmine (2020) believes that the "Analytical approach is a complex social process in which policymakers, principles of foreign policy, policy aims, interests and objectives, power inputs and outputs play an interacting roles" (p.741). Similarly, while foreign affairs analysis has several approaches, the choice of the descriptive-analytical design is motivated by the following Singer's (1961) assumptions regarding this method:

- It offers a highly accurate description of the phenomena under investigation;
- It provides much more capacity to explain the relationships among the phenomena under investigation;

- This method promises a reliable prediction of the future behaviour of the object of study.

Furthermore, in order to test the hypothesis, the content of the dissertation is enhanced by several relevant data that is collected from primary sources such as speeches, addresses, and government publications, besides secondary sources, including journal articles, book reviews, and commentaries.

7. Significance of the Study

The findings of this study contribute to the existing literature on the role of technology in international relations studies. It forms a basis for future research on the overlap between the technical sciences and the foreign affairs of the states, particularly of the United States. Hence, the project's goal is designed to provide an understanding of how the explosive growth of high technology in recent decades has dominated politics by defining a new paradigm of American foreign relations.

8. Structure of the Dissertation

The present research is composed of three themed chapters. The first two chapters are theoretical, while the third chapter is a study case. The first chapter tackles the theoretical embedding of technology in international relations, as well as the different mechanisms through which the American government is making its science and technology policies. The second chapter encompasses an overview of U.S. foreign policy towards China and the different stages of the bilateral relations between the two nations. The third chapter is a case study that sheds light on the American ban of the Chinese company, Huawei, to demonstrate the impact of advanced technologies in shaping the foreign policy of the United States.

CHAPTER ONE

Theoretical Profile of Technology in International Relations

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1. Introduction

As the central theoretical assumption of the research, this chapter is an attempt to explore the extent to which technology influences international relations. It contextualizes the notion of technology in the political stage with a conceptual understanding of how technology and the international system affect each other through investigating the impact of emerging technologies on strategic issues such as economy, military, and national interests. It also gives further analysis of how today's foreign affairs are being carried out in the digital age. Moreover, it sheds light on the technological edge of the United States and how it is served as a rationale of the American role as a global hegemonic superpower. The last section is an overview of the governmental institutions that guide the U.S. policymaking in the technology sector, which explores the roles and responsibilities of the science and technology advisers in the executive and legislative branches.

2. The Notion of Technology in the Political Context

For this paper, covering the notion of the term "technology" within the context of politics is necessary. At this point, an interesting conceptual definition is given by Brooks (1980), who has defined technology as a knowledge of how to carry out human purposes in a specifiable and reproducible way. Elaborating on this definition, Brooks notes, technology, therefore, is a way that can be used in society to attain a higher degree of power and hegemony. Similarly, Scalapino (as cited in Skolnikoff, 1993) believes that the conditions of reproducibility and dedication to fulfilling human purposes are what separates technology from other sectors. Thus, technologies have both social origins and effects; they are formed by human intent and interests.

Therefore, technology has not only been ascribed diverse values but also has been labeled in different ways, a fact that complicates all discussions about the notion of technology and its role in global affairs (Hughes, 2005). Nevertheless, technology is defined as an accumulation of

knowledge and artefacts for the realization of human purposes in a specifiable way. Namely, In terms of political dynamics and for the sake of global governance, technology is often used in this pursuit, that is, as a means of manipulating the surrounding environment in order to conduct experiments, perform a particular function, or achieve some other intelligent objective to maintain the country's economic and geopolitical interests. In other words, science and technology are the essential tools of modernization. They are a useful measure of how advanced a society is and may become over time—for this reason, analyzing technological competence to include both the fundamental scientific capacity of a state as well as a nation's technological output to determine how advanced a country is and is likely to become.

Taken together, technology is any application of organized technical knowledge about the natural world for a practical purpose or the capacity to develop and use such knowledge to be used as an instrument to achieve a nation's national objectives and interests. This definition encompasses both advanced technologies like high electronics, space, internet, information communication technology (ICT), and military technologies. In the current research, the discussion is limited to technologies based on the technical sciences.

3. Impact of Technology in International Relations

In the last few decades, the interconnection between the emerging of new technologies and international relations has increasingly expanded. Many analysts believe that the main impact of science and technology on global affairs has been through their economic significance and military developments. Fritsch (2001) indicates the dominant driver of technology in changing the world society's economic, political, military, and cultural developments. According to him, technological development plays a crucial role in the formation of the new framework of the international arena, characterized by networking, interconnectedness, and reciprocal interdependence, and its

consequences often have been mixed. For instance, communication and transportation technologies have contributed to the development of a global economic system, which has been providing a source of unprecedented economic prosperity, and in countless ways, has helped improve the living conditions of billions.

In the stage of politics, there is a direct correlation between a country's place in the global hierarchy and its science and technology capabilities. Undoubtedly, access to technology (or the lack of it) determines a country's place on the pecking order in the regional and global rank, and it plays a critical role in determining the fate of nations either by raising them higher levels or by keeping others down. In this vein, Branscomb and Kodama (1993) argue that "a strong national identity can be seen in science and technology, partially because government policy influences the mainstream of technology within each country" (p.1). As shown in Figure 1, the technological capacity is the fundamental pillar of the state's national authority which, in turn, leads to an increase in the country's dominance in the international arena.

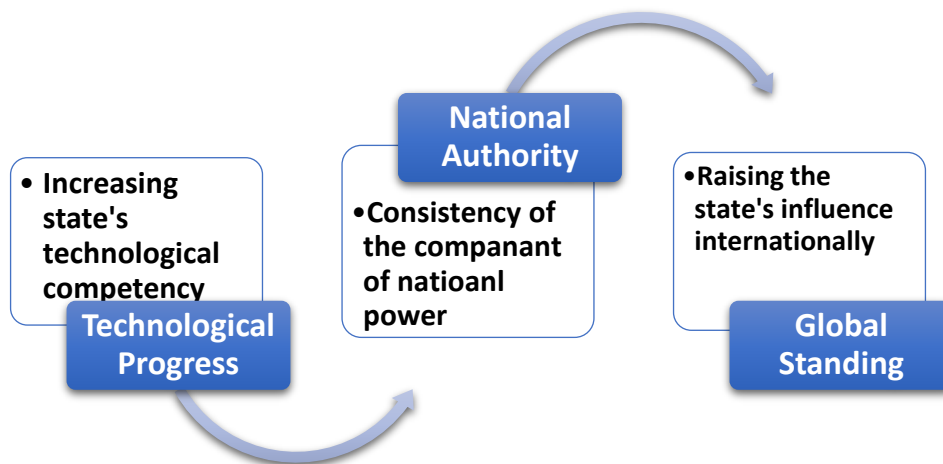


Figure 1. Impact of Technology in the Country's Status in the International Arena

Furthermore, the manipulation of new communications technologies provides plenty of options for the intervention in the domestic affairs of the states and set their internal policies. For instance, an investigation supported by the Central Intelligence Agency (CIA) and the Federal Bureau of Investigation (FBI), the U.S. Senate Select Committee on Intelligence reported in 2019 that Russia had influenced the 2016 U.S. presidential election by harming Hillary Clinton's chances of success and supporting Donald Trump under the supervision of the Kremlin. The report concluded that in 2016, under the guidance of high-level Russian government officials including President Vladimir Putin, Russian Internet Research Agency (IRA) used cyberattacks and social media, especially in Facebook and Twitter, as a platform to conduct an information warfare campaign designed to spread disinformation and societal division in the United States "aimed at influencing how this nation's citizens think about themselves, their government, and their fellow Americans" (U.S. Senate Committee, 2019, p.4).

In the economy's context, within globalized world trade, countries take advantage of their comparative technological advantage over others. Most high-tech developments are driven by the competitive national quest to maintain economic superiority over others. As a result, the importance of technology to an economy has prompted politicians to support technological capacity, particularly in the advanced states. Furthermore, modern in advanced technologies such as next-generation microelectronics, nanotechnology, biotechnology, robotics, and artificial intelligence will upset existing balances of power and shape military capabilities for future conflicts (Mohan, 2012). On the contrary, technology also has multiplied the destructiveness and global reach of armed conflict, as in the case of nuclear weapons or cyberwar. Many technologies have devastatingly yielded dramatic and often unintended adverse side effects like environmental pollution, global climate change, and loss of biodiversity.

3.1. The Interplay of Science and Technology with Foreign Policy

Foreign policy dictates how a country acts towards other countries politically, socially, economically, and militarily. It is considered by Cohen (1998) as an engine room of international relations for establishing the points of contact with other nations in different dimensions. Historically, the focus of international relations or diplomacy has been on protecting one's security versus other states and resolving conflicts of interest for avoiding possible war or achieving national profits.

Additionally, considering the power as the primary factor in the calculus of international relations, represented in terms of mastery and control over vital resources and capabilities to influence global affairs. Under these circumstances, (Amitav, 2016) notes:

technology plays an essential role in exercising control or influence. Foreign policy is handled by foreign ministers, government secretaries, and ambassadors on diplomatic assignments in foreign countries, who have used every technological advantage available, to achieve the diplomatic objective [...] Technological knowledge is becoming an important component for retaining diplomatic effectiveness and for meeting challenges in global affairs. Foreign policy and diplomacy have always been important aspects of statecraft, but now the emerging 'knowledge society' demands that statecraft must include new sensitivities of the electronic medium that allow instant communication and information diffusion, thanks to the phenomenal reach and wide access of modern technologies (p.12).

As an illustration of these claims, the successful application of high technology and techniques in U.S. military operations in Iraq (2003) was a demonstration of how a world-class

superpower could exercise its foreign policy over another far-away sovereign country. By first, diplomatically convincing other nations that there was a threat of Weapons of Mass Destruction (WMD) and then using techno-military strength to devastate the target nation to change the political regime there. Regardless of its ethical results, this was an obvious case where most states diplomatically coaxed to standby, while the overwhelming techno-military power was used in a preemptive mode without being provoked militarily. As a result, this operation was indeed an example of the combination of technology and diplomacy that raised the U.S., which signalled the new era of coercive diplomacy by a superior power to enforce submission of the weaker power. Consequently, more technologically powerful and high precision weapons, along with modern network-centric strategies, have dramatically reduced the time margins for diplomacy and, thus, making the risk of a diplomatic breakdown all the higher.

Based on these conceptions, Deutsch (1959) assumed that in the globalization age, there would be a premium, not upon political warfare, but political leadership. According to him, it will require a great deal more than mere "political warfare" with its almost inevitable connotations of propaganda and the attempted manipulation of the directed "audiences." The following points are the main interconnected areas between technology and international affairs.

3.2. Digital diplomacy

Diplomacy and advanced technological activities have a significant contribution in projecting a country's foreign affairs positions to internal and foreign audiences. One vital factor that has affected diplomacy in this modern age is the revolution in information and communication technologies (ICT). They have revolutionized the way individuals communicate and exchange information. Gradually, political, social, and economic landscapes across the globe have been changed, and hence the digital diplomacy is widespread.

Along similar lines, Lewis (as cited in Adesina, 2017) defines digital diplomacy as the use of digital tools of communication technologies by diplomats to achieve national interests of the nation's foreign policy goals. Throughout this definition, digital diplomacy mainly refers to the diplomatic practices through digital and information technologies, including the internet, smart mobiles, as well as social media channels to help carry out a strategic objective and allow for effective oversight, coordination, and planning of international policy across government, in response to the internationalization of the bureaucracy. Besides this, Adesina (2017) attempts to explain the role of digital diplomacy in U.S. foreign relations: "The United States Department of State has been described as the vanguard of digital diplomacy, which it refers to as Twenty-First Century Statecraft, using new technology to engage a growing, changing set of stakeholders across the globe" (p.7). The Twenty-first Century Statecraft is a new initiative announced by the former Secretary of State, Hilary Clinton, in 2009. It is described as a strategy of expanding the conduct of foreign policy beyond traditional government-to-government relationships and leveraging the global ICT network to include people and civil society around the world in the business of diplomacy and development. Furthermore, the U.S. Department of State declared in 2014: "This is twenty-first-century statecraft complementing traditional foreign policy tools with newly innovated and adapted instruments of statecraft that fully leverage the technologies of our interconnected world" (para.4)

At the domestic level, social media has become a platform to distribute uncensored public information and put pressure on governments. Taking the case of countries like Egypt, Tunisia, Syria, and Yemen, as an example, with the so-called Arab Spring, a wave of protest and several regime shifts took place in the Arab region last decade. The social media aided Arab Spring activists creating an alternative and mainstream media by helping many to connect and share

information and sometimes helping to organize the protests throughout the online communication services such as Facebook, Twitter, and YouTube. Much the same as protests in Moldavia (2009) and Iran (2009 and 2020), these platforms have gained a pivotal role in mobilizing the opposition and feeding the resulting dynamics of revolutionary regime shifts. Correspondingly, Eckardt (2004) notes that the properties of ICT in reducing information costs and in providing low-cost communication made it compelling.

3.3. Technology as a Common Tool of Soft Power, Hard Power, and Smart Power

The new generation of emerging technologies have been changed the nature of the international framework and re-emphasized the use of intangible forms of power and influence, such as culture, ideology, and institutions. Accordingly, factors such as soft power, hard power, and soft power; the contemporary approaches of international relations and geopolitical setting, are profoundly affected by advanced technologies revolution because they provide further options to those who control them.

Initially, Hard power is defined as an ability to reach the state's goals through coercive actions that can be used to threaten or marshal force in pursuit of its national goals (Gallarotti, 2015). Hard power, therefore, is concerned with the idea of nations using military or economic might to achieve more considerable influence. Besides, the role of technology in influencing the hard power of a nation includes defence equipment and infrastructure, manufacturing, and nuclear weapons. However, intervention came most notably in the form of drone strikes, which became the method of choice when it came to the elimination of individuals or states who posed a threat to a country's national security (Amitav, 2016).

Second, Soft power rests on the ability to influence others without the use of force, coercion, or violence but through intangible assets, attractive strategies, and non-military assistance such as

culture, political values, institutions, spreading propaganda, and policies (Nye, 2008). As a result, opting for this strategy lead to exert more influence and emphasizing the legitimacy of their ideology that are considered as a lawful and moral authority. It is also notable to realize the role of technology in shaping the soft power of nations and their foreign policy imperatives which is exemplified in work undertaken by Amitav (2016) regarding the technology as an instrument of soft power in U.S foreign policy:

The exclusive management of global public goods like the World Wide Web (www) is the most important instrument of American soft power in the 21st century. The internet relies on a global network of satellites, most of which are owned by the U.S. Government. They have developed advanced terrorism intelligence systems that work in close tandem with high-tech satellites and equipment most proactively (p.14).

Third, smart power is another critical area of international relations for the best gains for the country. It is a judicious balance of hard power and soft power projections in the international arena. Smart power is defined as the ability to skillfully combine hard and soft power for the development of integrated strategies (Armitage & Nye, 2007). In other words, the integrations of elements of hard and soft power in ways that are mutually reinforcing. Significantly, this possibility is uniquely granted by technology, which can play the role of hard power and a soft power application in foreign affairs effects.

4. Technology as a Factor of U.S Global Hegemony

The international distribution of power relates to technology creation, control, and use. Technology assures political, military, and economic competitive advantage of the nations. Accordingly, Skolnikoff (1993) considered the overall impact of technology on several traditional

concepts such as sovereignty, which he defined as autonomy and authority in economic and political affairs, competition and dependency, and military force. He also examined their impact on the geopolitical assessments of a nation's global power and influence. He concluded that despite the Chinese and Russian competition, the U.S. towers over its rivals worldwide, resulting from its technological advantages and strengths. Similarly, Beckley (2018) claims that "this is the era of the U.S. as sole superpower, and the country's domination of the global order should continue for decades" (p.8). According to him, through advanced technologies, the United States has unique advantages over other nations that, if used wisely, will allow it to remain the world's sole superpower throughout this century.

4.1. Technology and Political Authority

The concept of technological authority (also called Techno-sovereignty) becomes frequently used by political leaders to insist on the need to break technological dependence on foreign nations, which also calls a nation's digital sovereignty. Nugraha et al. (2015) used the term "data sovereignty" to point out the "reasonable efforts by nation-states to subject sensitive national data flows to and across national borders" (p. 465). Rationally, knowledge generation depends on the latest research potential, scientific personnel, funding, institutional solutions, government support policies, and business organizations. In the light of this, the world's unequal potential in research and development R&D makes some countries politically leader and hegemonic, whereas others are merely imitators, and the rest are excluded, and thus, a new map of global power emerges. In a related context, Szkarła and Mojska (2016) indicate the relationship between technology and political authority in the following:

Technological power and political power are de facto intertwined; they are constitutive components of the network–national and international. The strength

and effectiveness of political power internally or internationally depends [*sic*] greatly on technology utilization in politics. This is not an easy task. Nevertheless, many governments promote overwhelming technology use in political communication, information, and propaganda, in conflict resolution and foreign policy. That is why they introduce methods, infrastructure, and devices of e-politics, e-government, and e-democracy (p.42).

From the perspective of digital hegemony, the United States and China are at a critical juncture. The U.S. is doing everything in its power to blunt China's technological momentum and maintain its techno-hegemony by keeping sensitive data out of Chinese hands. China, for its part, is eager to exceed the Westerns in the race for digital domination and cybersecurity. Therefore, the U.S. and China are aware of the importance of establishing technological dominance in the key growth areas, such as advanced electronics, communication networks, and AI.

4.2. Technology and the Dominance of U.S. Economy

Gibbons and Wells (1997) claim that technology is the engine of economic growth, as has been recognized globally by nations at all stages of economic development. This statement illustrates that investments in R&D are key to increase productivity, accounting for half or more of the growth in output per person over the past half-century, and to the creation of a legion of new products and processes. These investments and their associated advances have made the U.S. Gross Domestic Product GDP exceed \$21 trillion in 2019 (BEA Gov, 2020). It also makes the United States the enormous economic power and controlling trade in the world that served as rationales for its essential role as a global hegemonic superpower. In the same direction, the former Secretary of State, Alfred Kissinger, emphasized that technology is fundamental to economic development. He stated: "It is the technology that enables states to master the raw gifts of nature

and transform them into products needed for the well-being of our peoples." (as cited in The Social Security System, 1976, p.224).

Hence, the technological edge is the driving force of economic growth, productivity, and modernization. Electronic Technology changes the structure of the American economies and makes them networked, as in the case of e-economy, new economy, information economy, digital economy, and virtual economy, which lead to the economic leadership of the U.S.

4.3. New Technologies as a Factor of U.S Military Capabilities

Military primacy today comes from weapons quality, which can be reached through advanced high-tech. According to Paarlberg (2004), the key of the present revolution in military affairs (RMA) returns to the application of powerful technologies and engineering, particularly in fields such as physics, chemistry, and information technology to weapons design and use. It is the international supremacy of the United States in these fields of science and technology that has made worldwide dominance of the U.S. military. In this respect, Senior U.S. defence and intelligence officials have identified several emerging technologies that could have a crucial impact on U.S. national security in the years to come. These technologies include artificial intelligence, lethal autonomous weapons, internet of things IoT, quantum technology, hypersonic weapons, and directed-energy weapons (Sayler, 2019). As these technologies continue to mature, they could hold significant implications for congressional oversight, U.S. defence authorizations and appropriations, military concepts of operations, and the future of war.

The supremacy of U.S technological power in the military is evident with its armed equipment, where each service has exclusively dominating weapons not found in the arsenals of other states. At first, the U.S. Air Force has different kinds of stealth aircraft with a wide range of drones merged with laser strike technologies, while no other state has even one. Besides, the

American airborne targeting capabilities, built around a Global Positioning System (GPS) satellites, joint surveillance and target radars, and unmanned aerial vehicles are dominating and unique. Moreover, on land, the U.S. Army has around 50.000 military vehicles, each with a fire-control system so accurate it can find and destroy a distant enemy tank, usually with a single shot (Global Fire Power, 2020). Finally, at sea, the U.S. Navy now deploys Seawolf Nuclear Submarines, the fastest, quietest, and most heavily armed undersea vessels ever built, with supercarrier battle groups, each carrying scores of aircraft capable of delivering repeated precision strikes hundreds of miles inland.

5. Mechanisms of U.S Government Policymaking in Science and Technology

The American Constitution divides power between the three branches of the federal government. First, the legislative branch that makes law and is vested in a bicameral Congress: The Senate and the House of Representatives. The executive is the second branch that implements and enforces the law, and it includes the President, Vice president, Cabinet, and most federal agencies. The third is the judicial branch, which interprets and evaluates law and is composed of the Supreme Court and other Federal Courts (USA Gov, 2019). Theoretically, the American political system is constitutionally structured with the system of "checks and balances," thereby, none of the three branches of government would become too powerful.

Historically, the first formal science and technology policy decision in the U.S. government is included in the U.S. Constitution itself in 1787, when the Congress was given the power to promote the development of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective discoveries (U.S. Const. art. I, § 8, 1787). The following section discusses different mechanisms of making decisions regarding science and technology policy in the executive and legislative branches.

5.1. The Executive Branch

5.1.1. The President and the White House

The executive branch has taken the lead in supporting scientific research and relying on scientific expertise when making science and technology policy issues tend to reach the presidential level if they involve multiple agencies; have a substantial budgetary, economy, national security, or foreign policy dimensions; are highly controversial, or are highly visible to the public. When these matters reach the Oval Office, presidents generally seek information and advice from trusted sources as to the options available and their implications (Sargent & Shea, 2014).

However, President obtains S&T advice from federal scientists, specialists, and informal personal contacts. In addition to the advisory boards and committees (Knezo, 1997). Lacking a statutory foundation, these boards and committees tended to lack permanency, as subsequent Presidents often disbanded them. When again faced with the need for S&T advice, Presidents would form new advisory boards or committees, sometimes reconstituted from previously disbanded ones (Shea & Sargent, 2019). As an alternative, The White House has created several science and technology policy entities, including the Office of Science and Technology Policy OSTP, the National Science and Technology Council NSTC, and the President's Council of Advisors on Science and Technology PCAST. The role and influence of OSTP, NSTC, PCAST, and their predecessor organizations have varied among administrations, depending on the President, their directors, and the rapport between them (Shea & Sargent, 2019).

The following section discusses the current structure, roles and responsibilities, and budget of each entity.

5.1.1.1. White House Office of Science and Technology Policy (OSTP)

The OSTP was established in 1976 by Congress to provide the President and others within the Executive Office of the President with advice on the scientific, engineering, and technological aspects of the economy, national security, homeland security, health, foreign relations, the environment, and the technological recovery and use of resources, among other topics. (The White House, n.d.). The role of this office depends both on the President and the OSTP's director. However, the office works to assist the driving of science and technology policymaking and supports U.S. innovation and ingenuity by crafting effective policies aimed at strengthening America's scientific and technology enterprise. In this regard, all Presidents have had an OSTP with a stable organizational structure and a director who also serves as the President's science advisor.

5.1.1.2. National Science and Technology Council (NSTC)

The executive order of November 1993 was established the National Science and Technology Council. The NSTC is constituted of the President as a chairman, and its members include the Vice President, the Director of the Office of Science and Technology Policy, Cabinet Secretaries and Agency Heads with significant science and technology responsibilities, and other White House officials. This Cabinet-level Council is the principal means within the executive branch to coordinate science and technology policy across the diverse entities that make up the federal research and development enterprise (The White House, 2018). So far, the National Institute of Standards and Technology (2017) documents, "the essential objective of the NSTC is to establish a clear national goal for federal science and technology investments in a broad array of areas spanning virtually all the mission areas of the executive branch." Nevertheless, the council

prepares research and development strategies that are coordinated across federal agencies to form investment packages aimed at accomplishing multiple foreign policies and national goals.

5.1.2. Department of State (DoS)

Within the Executive Branch, the Department of State is the formal U.S. foreign affairs office that develops and implements the President's foreign policy or his doctrine. Practically, the fifth title of the Foreign Relations Authorization Act (1979) provided the current legislative guidance for U.S. international S&T policy and made the Department of State DoS the prime federal agency in developing S&T agreements. The official goals of S&T policy as explained in the agenda of the U.S. Department of state are creating frameworks to facilitate the exchange of scientific results, provide for protection and allocation of intellectual property rights and benefit-sharing, and respond to the complex set of issues associated with economic development, domestic security and regional stability (U.S Department of State, 2010). In that act, Congress established the framework of U.S. foreign policy in modern S&T advances and its primary significance. In many respects, DoS deals with a variety of international issues in technology and works in problems and opportunities related to the American interests. By implication, DoS sets the overall policy direction for U.S. international S&T diplomacy and works with other federal agencies as needed. Consequently, its diplomacy workforce should have a commendable level of knowledge concerning this matter. Further, Nanto (2011) reminds that this workforce should conduct comprehensive preparation to make effective use of S&T in international affairs and consult with the public and private industrial, academic, and research institutions in the formulation, implementation, and evaluation of U.S. foreign policy.

Additionally, to accomplish the already stated duties, Jeff Miotke, a Deputy Assistant Secretary for Science and Technology in the Department of State declared that DoS uses a variety

of diplomatic tools such S&T cooperation compromises and integrating different technologies as elements of soft power in foreign policy, and seed funding for scientific programs and innovation activities (2008). At the same time, the State Department includes two principal offices for independent science and technology advising, and they serve as an advocate for science and technology policies at the Department of State; the Bureau of Oceans and International Environmental and Scientific Affairs (OES) and office of Science and Technology Advisor to the Secretary of State (STAS).

5.1.2.1. Bureau of Oceans and International Environmental and Scientific Affairs

Created by Congress in 1974, OES manages international S&T activities throughout the federal government and works to ensure U.S. economic growth in this area. In the foreign affairs stage, OES pursues an effort through the establishment of bilateral and multilateral S&T cooperation agreements (Miotke, 2008). These agreements are assumed as an instrumental in advancing the diplomatic relationships with key countries such as Japan, China, and Russia, as well as strengthening political relationships with the others to achieve the state's interests. Under this bureau, the Office of Science and Technology Cooperation (STC) is a part of OES with the function of developing science, technology, and innovation STI ecosystems to support U.S. foreign and economic policy priorities. It leverages a wide variety of tools and foreign partnerships to strengthen American science, technology and innovation STI (U.S. Department of State, n.d.).

On the ground, the OES has a long and practical experience in promoting U.S. strategic interests in several fields as science, technology, environment, health, and outer space to make sure American organizations and companies benefit from international opportunities in these sectors.

5.1.2.2. Science and Technology Advisor to the Secretary of State (STAS)

Within the framework of fulfilling valuable assistance in the executive branch, the U.S. Department of state incorporates the office of Science and Technology Advisor to the Secretary of State STAS. It was established in 2000, based on recommendations from a National Research Council study, which highlighted the importance of S&T to all aspects of foreign policy. Equally, the goals of this office are to enhance the S&T literacy and capacity of DoS by building partnerships with the outside S&T community and within the U.S. government as well as with foreign embassies in the United States (U.S. Department of State, n.d.). In other words, it uses science diplomacy to achieve foreign policy goals and to integrate STI into the Department's priorities for building knowledge-based societies globally and consequently provide accurate S&T advice to DoS and shape a global perspective on the emerging S&T developments anticipated to affect current and future U.S. foreign affairs. Expressing caution regarding the role of STAS, Fedoroff (2008) noted, "The Office of the Science and Technology Adviser is actively involved in long-term strategic planning and dialogues about the importance of science, engineering, and technology to the future security our nation" (p.4).

5.1.2.3. United States Agency for International Development (USAID)

USAID is an independent federal government agency established by the U.S. Congress in 1961 to integrate the products of S&T in order to meet the challenges of economic, environmental, and social development. It plays a significant role in supporting transformational development, planning the U.S. geostrategic interests, addressing global problems, and providing humanitarian relief (U.S. Agency for International Development, 2006). Although independent, USAID's overall foreign policy guidance comes from the Secretary of State and promoted by STAS. At one

time, S&T had a significant role at USAID. Today, however, S&T capacity, staffing, and funding, particularly in overseas missions, are far less than in the past (National Research Council, 2006).

The official purpose of this office is declared by its former Administrator, Fedoroff (2008) "to ensure that the use of science and technology achieves our goals in public diplomacy, increases the efficacy of our foreign assistance programs, and meets our foreign policy objectives of transformational diplomacy and stabilization of the international system" (p.8). In contrast, it has been stated that the objective of this agency is to strengthening fragile states, support partners to become self-reliant and capable of leading their development journeys, and of counteracting the drivers of violence, instability, transnational crime and other security threat (USAID, 2018). However, many analysts demonstrate that such foreign assistance through the development activities of organizations has been a critical instrument of America's soft power.

5.2. Making Decisions in Science and Technology Policy in the U.S. Congress

As the legislative division of the federal government, the American Congress is on the front line of many battles over the directions of science and technology strategy. Constitutionally, the U.S. Congress has taken a leading role in foreign affairs in S&T issues through its foreign relations committees as well as through its appropriations and oversight role. In a Congressional Research Service, Deborah Stine (2009) indicated that the U.S. Congress makes decisions regarding the S&T policy facets, which can be used to frame policy issues, craft legislation, oversee federal activities, and government. He added, "in making its decisions, Congress receives advice from both internal sources such as congressional staff, S&T policy fellows, hearings, and congressional support agencies "(p.14). Additionally, Congress can obtain information, advice, and analysis of technical issues from many external sources. Besides that, the members can also seek assistance from personal and committee staff, legislative conferences and study organizations, and each other.

5.2.1. Congressional Committees of Science and Technology

The American Congress is a bicameral legislature that consists of two chambers: The House of Representatives and the Senate, their committees play an essential role in appropriations of S&T policy guidance. For example, the funding for many technological organizations as the National Science Foundation NSF, National Institute of Standards and Technology NIST, the National Aeronautics and Space Administration (NASA) and the White House Office of Science and Technology Policy (OSTP) are generally debated by the House and Senate Committees on appropriations' committees of related agencies (Deborah Stine, 2009). Accordingly, most congressional committees are involved in S&T policy decision-making or use the scientific and technical knowledge currently available to help them make decisions. The following are the major congressional committees specialized in S&T policy.

5.2.1.1. U.S. House of Representatives Committee on Science, Space, and Technology

The Committee on Science, Space, and Technology was first created as the Committee on Science and Astronautics on July 1958, as a reaction to the Soviet Union's 1957 founding of the first artificial Earth satellite (Sputnik 1). The Science Committee was created to support the U.S. innovation in its technological competition with the Communist camp. Gradually, the name changed in 1974 to the House Committee on Science and Technology. Building on the rules of the House of Representatives, "Committee on Science, Space, and Technology shall review and study on continuing basis laws, programs, and government activities relating to non-military research and development" (p.10). This mandate provides the Committee with wide-ranging oversight authority over science and technology issues throughout the government includes cybersecurity, academic espionage, access to the international space station (ISS), earth observations satellite, and foreign technology transfer.

By way of illustration, the House of Representatives passed the Secure and Trusted Communications Networks Act of 2019 establishes a mechanism to prevent communications equipment or services that pose a national security risk from entering U.S. networks and a program to remove any such equipment or services currently used in U.S. networks. Specifically, the bill prohibits the use of certain federal funds to obtain communications equipment or services from a company that poses a national security risk to U.S. communications networks and national security such as Chinese telecom giant Huawei and Zhong Xing Telecommunications Equipment Corporation ZTE.

5.2.1.2. Senate Committee on Commerce, Science, and Transportation

The United States Senate Committee on Commerce, Science, and Transportation is a permanent committee of the United States Senate. It has broad jurisdiction over all matters concerning interstate commerce, science and technology policy, and transportation and economic development. With 27 members in the 116th Congress, the Senate Commerce Committee is the largest of the Senate's standing committees, yet it is composed of six subcommittees includes aviation and space communications, technology, innovation, internet manufacturing, trade, and security issues. Furthermore, this committee may hold hearings on policy issues and on specific bill proposals, consider and further develop bill proposals through a markup process, and report legislation and recommended changes to the full chamber (U.S. Senate, n.d.). Digitally, the Senate's committee discusses different national strategies to protect Americans' data, promote the competitiveness of American firms, and secure cyber information and technology infrastructure.

6. Conclusion

The theoretical framework was discussed in this chapter to provide an understanding of how the explosive growth of high technology in recent decades has dominated politics by defining a

new paradigm of the international system. It has focused on the process by which technology is changing the political, economic, and geopolitical environment for diplomatic activities in the international negotiations. It also comprehensively assessed the contribution of technological advances in presenting the United States as a global superpower. Moreover, this chapter tackled the different mechanisms through which the American government is making its science and technology policies.

The first section conclusively demonstrated that technology is not just a physical artifact but a critical part of the international political system, and intensively becomes a medium of interaction between the states. Knowledge of trends in science and technology is also a key element for the successful national implementation of international agreements. Thus far, the spread of digital information technologies has led to a profound impact on economic and military dimensions. In the economic stage, technological change unlocks the power of market economies growth; it is the technological progress that keeps the commercial moving based on industrial infrastructure. Militarily, the political power of the government is closely associated with the military power of the state, and both are based on technological military build-up, space exploration, and the arms trade. Moreover, it has been noted that the development of nuclear weapons, intercontinental ballistic missiles ICBM, and the different technologies of drones have changed the nature of warfare and geopolitics landscape.

The second section shed light on the changes that have been raised on diplomacy by the emerging of information and communication technologies ICTs. The impact of ICTs may well shift the attention to the political conduct of foreign affairs in two ways: information-gathering within the foreign ministries and among diplomatic actors, and the political and security agenda of foreign affairs. Second, the rise of social media has increased the pace of and provided new

instruments for the more traditional forms between governments and public diplomacy through official statements, propaganda, and manipulate public opinion.

The last section brought under light the role of technological development in maintaining the U.S. hegemony over the world courtesy of elaborate S&T policy. Such a policy has contributed to conducting a dominant economy, and a powerful military system incorporates sophisticated technologies. As this paper analyses the role of U.S. technological policy in strengthening its global leadership, this chapter highlighted the most common differing perspectives that generate discussion regarding science and technology policy in its competent authority. Consequently, the system of checks and balances makes the S&T policy distributed between the executive the legislative entities. Each of which has its own offices and committees that ensure an effective technological policy in order to maximize the U.S. interest's achievement. The executive division involves and OSTP and NSTP, they assist the President in designing policies in scientific and technological aspects of foreign policy, economy, national security homeland authority. The following chapter will be dedicated to American foreign affairs with a further account of its role in directing the U.S.-Chinese relations.

CHAPTER TWO

An Overview of U.S. Foreign Policy towards China

CHAPTER II

An Overview of U.S. Foreign Policy towards China

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1. Introduction

In the first chapter, the study has shown that the new technologies become an essential factor in shaping the international relations between the nations, and how the United States has invested in its technological advancement to create an integrated political, economic, and military system serves as the basis of its unipolar dominant power. In this end, modern technologies as a critical tool of U.S. foreign policy plays a fundamental role in maintaining the American hegemony over the international system, particularly in dealing with the competitor superpowers such as Russia and China. To shed light on this issue, the present chapter is devoted to a summary of the foreign policy of the United States and its orientations toward rising China. It includes six sections. The first section provides a theoretical scope of U.S. foreign policy. The second one tackles the political integration of technology in U.S. foreign policy concerns, and the role played by the technological development in the foreign relations of the United States since the Second World War. While the third section discusses the factors that are leading China to track the global superpowers, the next section attempts to elaborate on various stages of U.S.-Sino relations since the establishment of the People's Republic of China. The final section sheds light on the U.S.-China trade war and technological race as the current issues between the two nations.

2. Theoretical Aspects of U.S. Foreign Policy

Generally, a country's foreign policy refers to the way it interacts with other nations to achieve national interests. However, the ability of the United States to shape international events as a global superpower in ways that advance its interests makes the U.S. foreign policy continues to be one of the most controversial topics in the field of international relations. The U.S. Department of State clearly states the officially defines goals of the American foreign policy:

Advance freedom for the benefit of the American people and the international community by helping to build and sustain a more democratic, secure, and prosperous world composed of well-governed states that respond to the needs of their people, reduce widespread poverty, and act responsibly within the international system (U.S. Department of State, n.d.).

In simpler terms, America's foreign policy is the expression of its goals and self-interest strategies chosen by the state to achieve them within the international arena. It includes sovereignty, democracy, economic security, and protection of U.S. citizens. Correspondingly, some scholars state that U.S. foreign relation is any results of its foreign policy; it refers to the management of relationships and dealings between countries. Therefore, Kumar (1967) describes the foreign policy as "a thought-out course of action for achieving objectives in foreign relations as dictated by the ideology of national interest" (p.352). In this respect, Kumar suggested that the components of U.S. foreign policy consist of the policymakers (includes the American government), the interests of the state, the doctrines, and tools of foreign policy which includes political and diplomatic, economic, and military options. Ultimately, the executive branch, headed by the President, and the legislative branch (U.S. Congress) are the two parts of the government that have been given most of the responsibility for making and for implementing foreign policy.

2.1. Economic Sanctions in the U.S. Foreign policy

The U.S. foreign economic policy derives from its national interests, which attach foremost priority to the success of its economy. These interests include the balancing of income and expenditure, the achievement of maximum economic growth, and creating a sustainable foreign economic policy to provide "shock absorbers" against the rival powers.

In this direction, the American economic sanctions have emerged as an effective instrument of the foreign policy against the states that threaten in one way or another the U.S. interests. In an appraisal of this policy, Hufbauer and Schott (1985) argue that by comparison with other options of the diplomatic armoury, the economic sanctions including trade ban, tariff over the imported-exported goods, and the financial control are an efficient way to achieve foreign policy goals and demonstrate resolve without taking dangerous confrontation that may involve unaccounted risks. However, many analysts criticize this policy; they claim that these sanctions are used in unfair competition for American companies and their private sector. This assumption comes from the premise that the U.S. advocates the free markets; in the meantime, it imposes restrictions on foreign companies under the pretence of a national security threat.

2.2. Nexus of Technology and U.S. Foreign Policy

In the last few decades, technology became an integral element in shaping U.S. foreign policy. In order to measure the growing role of technology in the foreign affairs of the United States, the National Research Council (1999) completed a report for the Department of State. The report declared the main 16 objectives of U.S. foreign policy, most of them encompass science and technology considerations.

Historically, science and technology entered a new phase in American foreign relations under President Franklin Roosevelt, who served in office from 1933 until his death in April 1945. That period, which witnessed fierce wars and strategic conflicts, convinced the decision-makers and military leaders that more considerable attention had to be paid to the technological developments that might aid the United States and its allies. Thus far, the country has a long and distinguished history of using modern technology to achieve its foreign policy and national security objectives. By way of example, technology has enabled the U.S. to pursue inter-state rivalries and make direct

military interventions and counter asymmetrical threats, strengthened the ability of the U.S. to influence the course of the world event, and maintaining its economic performance (Saxena, 2018).

2.3. The Role of Technology in U.S. Foreign Policy Since the Second World War

For several decades, the foreign policy of the United States was characterized by isolationism (others prefer to call it unilateralism). However, the Second World War witnessed the American decision to use the ultimate weapons technology, the atomic bombs, on Japan's Hiroshima and Nagasaki in three days (6 & 9 of August 1945), which led to a quick end to the war, thereby, minimizing further American casualties. Such an unprecedented intervention was the turning point of the U.S. foreign policy doctrine from isolationism to internationalism. In this release, the White House realized the role of technology in changing the nature of warfare. As a result, The U.S. government established new entities in this sector to deal with the intersection of modern technologies and national security issue, among which the Office of Scientific Intelligence of CIA, and the Office of Science Adviser and Special Assistant to the Secretary of State which later became the Office of International Scientific and Technological Affairs. Fasting forward to the Cold War era, technology had been closely associated with military affairs, the United States poured billions of dollars into their technology programs as part of the arms race with the Soviet Union, slightly for strategic purposes such as the production of nuclear weapons, space satellite surveillance, and spy devices of intelligence and espionage.

Besides the arms race, the annual report submitted to Congress by President Bill Clinton in 1995, covered the role of science and technology in supporting the U.S. foreign policy in the Post-Cold War. It revolves around five major and mutually reinforcing tenets as follows: Firstly, building and spreading democracy through cooperation on information and communications technologies. Secondly, promoting and maintaining peace by binding civilian nuclear power

research and development and non-proliferation of nuclear weapons material. Thirdly, advancing economic growth and protection of intellectual property rights. Forth, S&T cooperation plays a significant role in assessing and correcting the critical problems of global challenges through applying current and new technologies in technical fields such as climate change, world pandemics, or agricultural issues. Finally, the U.S. as a world leader in research and development, deem science and technology as an integral component in providing humanitarian assistance in the world.

In the twenty-first century, as the advanced technologies have developed from the information era to the connected age, the American governments sought to utilize them in foreign policy to project the country's soft power, hard power, and smart power to maintain its status as the global superpower. Moreover, the past decade's growing use of autonomous military technologies such as drones and killer robots has promoted in shifting the U.S. policy in war-fighting form direct intervention to the proxy warfare. Not surprisingly, this claims is supported by Carnegie Commission on Science, Technology, and Government (1992), which reported that the explicit goal of the U.S. governments is to "tap the country's extraordinary strengths in science and technology to achieve American purposes in foreign policy" (p.38).

3. U.S.–China Bilateral Relations

The relationship between the United States and China is arguably the most important and the most critical bilateral relations in the world today. Respectively, the two countries represent the largest and the second largest global economies and trading nations, as well as each other's most important trading partners. However, looking into China's recent history and interactions with other nations is necessary to have a better understanding of the different aspects of U.S.-Sino relations. The following is an overall picture of the Chinese political and economic system.

3.1. Basic Facts About the People's Republic of China

3.1.1. Brief Account of the Chinese Political System

China is located on the Pacific coast of South-East Asia, comprises 23 provinces. Its total population stood at 1.4 billion, makes up about 23% of the total population in the world as the most populous country. The Chinese Communist Party (CCP or the Party) established the People's Republic of China in 1949 through years of civil war against the forces of nationalists of The Republic of China (ROC), who moved to the island of Taiwan; the CCP is the country's sole political party in power (China's Political System, n.d.). In the same year, The Communists named their new regime the People's Republic of China PRC under Leader Mao Ze Dong. China's Communist Party dominates both state and society; it is committed to maintaining a permanent monopoly on power and is intolerant of those who question its right to rule. Although other minor political parties exist, they are authorized by the Communist Party of China, and virtually powerless. No independently organized and established political parties are tolerated, effectively making the PRC a one-party state (Dumbaugh & Martin, 2009). Today, China is a state of the Group of Twenty G-20 grouping of major economies in the world, and one of five permanent members of the U.N. Security Council.

China's political power structure is guided by the CCP, which makes up the National People's Congress (NPC); it is a unicameral legislative power of the state, elected for a term of five years. According to the Chinese Constitution (1982), the NPC is "the highest organ of state power."(p.15). Its role is to supervise the work of the four other political bodies, which are: The State Presidency, State Council, Supreme People's Court, and Supreme People's Procuratorate.

First, the State Presidency consists of the President and Vice-President of the People's Republic of China; they are elected by the National People's Congress. The State President serves

as China's head of state. Between 1982 and 2018, the constitution stipulated that the president could not serve more than two consecutive terms of five-year. However, in 2018 the limit of two five-year terms for these posts was removed to be with no term limits attached to this office. Yet, since 1993, as a matter of convention, the presidency has been held simultaneously by the CCP's General Secretary, who is the top leader in the one-party system (Lawrence, 2013). At present, General Secretary of the CCP Xi Jinping is the Chinese President. According to the constitution, the President promulgates laws that are passed by the NPC and ratifies treaties that are agreed to by the NPC. Also, he receives foreign diplomatic representatives and conducting foreign affairs.

Second, The State Council is defined as the Central People's Government of the People's Republic of China, it is "the executive body of the highest organ of state power; it is the highest organ of state administration." (Constitution of the People's Republic of China, 1982, p.66). The State Council is headed by a Premier who serves as the first minister, He is appointed to his post by the State President with the duty of it and running all ministries, including the People's Bank of China, the central bank. Moreover, the State Council is officially responsible for implementing policies formulated by the Communist Party and laws passed by the National People's Congress, and for overseeing the day-to-day work of the State bureaucracy (Lawrence, 2013).

3.1.2. Development Path of China

Since 1980, Chinese economic development and military modernization programs have witnessed radical expansion. Once a sleeping giant, China today is the world's fastest-growing economy, it is working to delegitimize the U.S.-led world order, and function as a spoiler aiming to build a new globe structure, its core national security objectives are to protect its sovereignty, achieve modernity, and maintain permanency. According to the U.S. Department of Defense annual report to Congress for 2014, the China's benchmark goals include restructuring the

economy to maintain growth and improving the standard of living for Chinese citizens in order to promote its stability (as cited in Eikenberry, 2015). To pursue these objectives, China has realized complementary political, economic, and technological strategies.

Politically speaking, the bureaucratic stability of the PRC system has provided a productive environment for development and growth in various fields. China's leaders also firmly believe that the Communist Party must maintain its monopoly on political power for the sake of internal stability. For instance, Dumbaugh & Martin (2009) reported a recommendation to the U.S. Congress to draw their attention to this concern:

Because the inner workings of China's government has [*sic*] been shrouded in secrecy, it would be easy to presume that a "one-party state" would think, speak, and act with one mind, one voice, and one purpose. This report has attempted to challenge this line of reasoning by providing a glimpse behind China's curtain of secrecy and into the internal dynamics of Chinese politics (p.20)

By implication, China's foreign policy has restructured its relations with the world under the famous slogan "Peaceful Rise" which adopted by the Chinese government as a strategic direction in global affairs, has increased China's interest and attention of the world. Peaceful Rise insists that China's growth is not only beneficial for China, but it is beneficial for the region. Along the same lines, Ford (as cited in Okuda, 2016) stated that the principal goal of China's diplomacy is to create a peaceful and stable international relation for its development. Through this initiative, Beijing believes that it could become a global power in the future. Nevertheless, peace will remain critical for its development, and China has no reason to deviate from the path of peaceful development.

In the economic stage, the rise of China is singularly considerable. It has experienced exponential growth over the past few decades to be the second-largest economy and trading power in the world with Gross Domestic Product GDP of \$14.14 trillion in 2018 (Silver, 2020). Besides, China has become the world's first exporter and manufacturer. In truth, such massive progress was not made lightly but a consequence of long-term policies pursued by the government. By way of illustration, in 1978, paramount leader of the Chinese Communist Party Deng Xiaoping launched the Reform and Opening-up programs, through this economic open-door policy, China laid the foundation for a successful transition from a planned economy to a market economy oriented towards the global market, which termed a "market economy with socialist characteristics." With this vision, China has achieved continuously high economic growth under controllable inflation pressure. Similarly, for more than four decades, the average annual GDP growth in the country has been around nine percent (9 %), leading to significant rises in incomes. In this matter, while the reforms have left the pillar of one-party rule untouched, Zanaa (2018) believes that this remarkable economic success did not happen following the western world's favoured developmental tools, but instead through China's unique path. The reforms have led to a significant liberalization of previous regime practice in terms of party control over the economy and society.

Finally, yet importantly, The Chinese are now at the groundbreaking of science and technology in many areas. China witnessed a technological revolution characterized by intensive development in strategical fields like fifth-generation telecommunications networking (5G), artificial intelligence, big data, nuclear energy, robotics and the Internet of Things (IoT). Such technological capabilities have significantly put the People's Republic of China within striking distance from the excess U.S. as the global superpower.

As the most effective tool for power and national interests, China uses collaborations and relationships with universities to gain specific research and access to high-end equipment. As a result, Wilsdon and Keeley (as cited in Fels et al., 2012) stated that China represents the "world's largest technocracy: a country ruled by scientists and engineers who believe in the power of new technologies to deliver social and economic progress" (p.299). For instance, since 1999, to strengthen its technological capacity, China's spending on research and development has increased by more than 22% each year. As reported by the European Commission, it reached about \$293 billion in 2018, accounting for 2.19% of the country's GDP and representing more than 20% of total world R&D expenditure. Moreover, in that year, China overtook the United States and ranked the first publisher of the scientific and technical journal articles with more than 500 million papers (The World Bank, 2018). Taken together, this demonstrates the increasing pace of China's development to be one of the most powerful states in the international system and takes its place as a regional hegemon.

4. Historical Highlights of the U.S.-Sino Relations Since 1949

For over half a century, the United States and China relations alternated between cooperation, negotiation, and competition. Similarly, three main stages of the bilateral relationship between the countries have developed. It started from the ideological conflict to cooperation and common interests, and down to the competition over the global hegemony.

4.1. Military and Ideological Conflict (1949-1969)

During the Chinese civil war between the Communist Party CCP and the Nationalist Party (1927-1949), the U.S. tried to destabilize and weaken the Communist government of China. The American President Harry Truman (1945-1953) had supported non-communist nationalists headed by Chiang Kai-shek with military and financial assistance in an effort to impede the Communists

from controlling the state (U.S. Congressional Quarterly, 1969). However, the Communist Party took power in China in 1949 and forced Chiang and thousands of his troops to flee to Taiwan. Consequently, the American administration refused to recognize or establish relations with the PRC as an official government. In contrast, the U.S. continued to treat Chiang Kai-shek's RoC government in Taiwan as the legitimate administration of all China. A year later, the United States and China found themselves on opposite sides of the Korean War. Fische et al. (2015) cited that this conflict killed more than 36000 U.S. military personnel and at least 180,000 Chinese military personnel. Furthermore, during the first decades of the Cold War, Washington was continuing to support RoC in Taiwan as the official government of China. Indeed, many historians claim that this stage is one the longest and bloodiest period of Sino-American tension.

4.2. Beginning of Warming Relations (1970-1978)

Because of the changing of the Cold War dynamics and the Sino-Soviet split, U.S.-China unofficial relations began to develop, with economic, educational, and cultural exchanges. Equally, the 1972 historic visit of the U.S. President Richard Nixon to Beijing, which ended 25 years of separation between the two nations, was the first step toward normalizing relations with the communist PRC. It is followed by the reciprocal opening of liaison offices in each other's capitals. Later, Nixon called his "eight-day visit" to China as "the week that changed the world" (MacMillan, 2008). It widened the gap between the two most significant communist powers, the Soviet Union and China, and therefore helped the U.S. in its Cold War standoff with the Soviets. This landmark stage has concluded with the signing of "Shanghai Communiqué" by Nixon and Chinese Premier Zhou Enlai In 1972, which paved the way for enhancing the diplomatic relationships between the two countries and contributes to the relaxation of tension in Asia and the

world (Phillips & Keefer, 2006). Without a doubt, this convention has changed the strategic landscape and served as the foundation for U.S.-China relations since that time.

4.3. The Post Normalization Era (1979-2000)

The American acceptance of Joint Communiqué's conditions led to establishing full diplomatic relations between the two countries in 1972. The Joint Communiqué was three principles raised by China for normalizing diplomatic relations. They included cutting off the U.S. political relations with Taiwan and recognized Beijing as the capital of the People's republic of China for the first time (U.S. Department of State, 1982). It also states that "the people of the United States will maintain cultural, commercial, and other unofficial relations with the people of Taiwan" (Lawrence, et al., 2019, p.9).

Between the 1970s and 1980s, the vital strategic rationale for the U.S.-China relations was counterbalancing by a shared enemy, the Soviet Union. However, with the disintegration of the Soviets in 1991, the U.S. and Chinese administrations considered a new rationale for their relationship. Going forward, the U.S. became more aware of its economic interests in China as a gateway to East Asia and the Pacific. In this direction, China-U.S business ties have moved from a predominantly trade relationship to one that covers almost all aspects of economic life, and it coincided with the beginning of China's reform and opening (IBP, 2015). As far as the economy was concerned, the increase of the U.S. economic benefits in the Chinese market promoted the President Bill Clinton to sign a Public Law in 2000 which granted China permanent normal trade relations and paving the way for China to join the World Trade Organization WTO, which it did in December 2001 (Lawrence, et al., 2019).

The U.S. officials at that time were keen to consolidate relations with the Chinese side as a part of engagement policy and ensuring a strategic ally in the Asia Pacific. In his speech, the former

U.S. President Ronald Reagan declared that building a strong and lasting relationship with China is an important foreign policy goal of the American administration. He added: "Such a relationship is vital to our long-term national security interests and contributes to stability in East Asia. It is in the national interest of the United States that this important strategic relationship be *[sic]* advanced." (U.S. Department of State, 1982, p.4).

4.4. The Twenty-First Century Relations: Between Cooperation and Disputes

During the 2000s, U.S.-Chinese economic relations were mutually beneficial. Many economists believe that cooperation in the commercial relationships between the two countries has been profound. Such relations established a critical pillar for the economic interest of the U.S., which amounted to \$70 billion of exports in 2008, representing 12.1% of total U.S. trade. Therefore, China was the third-largest buyer of U.S. goods and services (U.S. Department of Commerce, 2009). On the other hand, according to American statistics (as cited in Wang, 2010), by the year 2009, China became the second-largest exporter to the American market. Because of these facts, it can be said that the volume of economic exchange, including economic investments, commercial relations, and technological transfer, made the U.S. and China among the largest and most important trade partners.

Paradoxically, while the U.S.-Chinese economic relations were getting closer in the first decade of the twenty-first century, their political relations have diverged. They have had a political conflict in several issues that remained unresolved. On the American side, China's rise is widely seen as a threat to America's preeminent international position. Steinberg and O'Hanlon (2014) explained the symptoms of the Chinese rise, they believe that its remarkable economic growth has made it possible for China to increase its military capacity and ramp up its political role in the region and the world and hence, threatening the U.S. geopolitical domination. Correspondingly,

China's military growth increasingly complicated China's relations with the United States and some Asian neighbours, notably Taiwan and Japan. In this connection, Dick Cheney, the vice president of the former U.S. President Barack Obama, criticized the Chinese increase of its military spending, he stated that the military buildup and the anti-satellite test were "not consistent with Beijing's stated goal of a peaceful rise" (Buckley, 2007). Besides, the U.S. frequently expresses concern regarding the Chinese human rights policies in addition to its dissatisfaction with the PRC's political system under the "dictatorship" of the Communist Party.

However, on the Chinese side, the biggest issue is continued American arms sales to Taiwan. In addition to this, China criticized American global foreign policy as one who tried to enforce American interests and did not pay enough attention to the interests of other countries, specifically with China. For instance, Zhu (2006) considers the U.S. foreign policy towards China as a hidden aspect of containment strategies. He said that American decisions such as forbidding technology transfer to China, selling weapons to Taiwan, but preventing others from selling weapons to the Chinese army and firming up the U.S.–Japan military alliance are sufficient evidence to convince many Chinese that the U.S. is trying to contain China.

5. New Trends of the U.S.-China Relations Under Trump Administration

After President Donald Trump arrived at the White House in 2016, the U.S. has shifted from viewing China as an economic partner to a strategic competitor. In fact, the change of U.S. foreign policy towards China is not fortuitous, it is a result of two decades of simmering geopolitical suspicion between Washington and Beijing. The 2017 National Security Strategy declared that "China is a strategic competitor using predatory economics to intimidate its neighbours while militarizing features in the South China Sea" (U.S. Department of Defense, 2018, p.1). In a definite statement, Trump's administration described China as a "revisionist" power that seeks to displace

the United States in the Indo-Pacific region, expand the reaches of its state-driven economic model, and reorder the region in its favour which also defined by China's rapid technological change. Against this background, Tellis et al. (2019) pointed out the principal challenges of the U.S. administration against China, which include: economic and trade war, the pursuit of advanced technologies dominance, geopolitical conflict over the Indo-Pacific rimland, and the military advancement of People's Liberation Army PLA. However, this contestation is complicated due to both the close economic relationship between the U.S. and China and the interconnectedness of global trade networks. The following points shed light on the two critical areas of U.S.-Chinese issues under the current U.S. administration.

5.1. U.S.-China Trade War

The term "trade war " is generally understood to mean an economic conflict resulting from extreme protectionism, whereby states raise or create tariffs or other trade barriers against each other in response to trade barriers created by the other party. Trade war has been used by Akdeniz (2019) to refer a situation in which two rival countries try their best to attack and affect each other's economic condition and trade as much as possible, mainly through imposing different types of taxes, tariffs, or quota restrictions.

Historically, many states are engaged in trade wars. However, the U.S.-China case is reigning the trade rivalry with each other at the current time. After he arrived at the Oval Office, Donald Trump has focused on reversing Chinese dominated trade and reshaping the U.S.-China economic relationship to eliminate what he calls the "unfair Chinese trading practice." Over the course of 2018, the Trump administration has imposed tariffs on more than \$280 billion of China's exports to the U.S., with rates ranging between 10% and 50%. These Chinese goods are in strategic sectors such as information technology, new energy vehicles, robotics, advanced rail and shipping, and

high-technology medicine and health care. In China, there is a perception that the U.S. is trying to curb its rise as a global economic power. As a reaction, China has retaliated with tariffs on more than \$110 billion worth of U.S. products. This tit-for-tat exchange of tariffs has launched the most massive economic conflict in recent history. It was followed by a series of reciprocal implementing customs tariffs between the two economic superpowers. (see Appendix A for the complete timeline of the U.S.-Chinese trade war).

5.1.1. Motives Behind the U.S. Trade War Against China

In fulfilment of his election pledges "Make America Great Again," and based on Section 301 of the Trade Act of 1974, President Trump signed in 2018 a memorandum directing the Office of the United States Trade Representative USTR to conduct the following acts: imposing tariffs on Chinese products, filing a WTO case against China for discriminatory licensing practices, and restricting investment by China in key technology sectors. To justify this economic war against China, White House argued that these actions are "an appropriate response to China's harmful trade acts, policies and practices related to technology transfer, intellectual property and innovation" (USTR Gov, 2018, p.4). On the other hand, many analysts believe that the growth of the U.S. trade deficit with China and the race for technological dominance are the leading causes of the trade war.

5.1.1.1. China's "Unfair" Trade Practices

One of the fundamental motives of the U.S. in waging an economic war is China's unfair trade practices. In an investigation report of the USTR Office (2018), which contained a scathing critique of China, the U.S. administration argued the following four claims against China: First, China uses foreign ownership restrictions to require and pressure technology transfer from U.S. companies to Chinese entities. Second, China uses unfair trade practices through imposing

substantial restrictions on, and intervenes in, U.S. firms' investments and activities. Third, China directs and facilitates the systematic investment in, and acquisition of, U.S. companies and assets by Chinese companies to obtain innovative technologies and intellectual property and to generate large-scale technology transfer in industries deemed necessary by the Chinese government industrial plans. Finally, through cyber espionage, China conducts and supports unauthorized intrusions into, and theft from, the computer networks of U.S. companies.

5.1.1.2. U.S. Trade Deficit with China

On the contrary, other analysts argue that the U.S. trade war is caused by its continued increase in the trade deficit with China. According to Piros & Pinto (2013), "A balance of trade deficit means that the domestic economy is spending more on foreign goods and services than foreign economies are spending on domestic goods and services" (p.211). In other words, A trade deficit occurs when the total value of a country's imports minus the total value of its exports during a given period.

The one area that President Trump has often lamented is the large and persistent U.S. trade deficit in goods with China. For this reason, the trade war is supposed to reduce the U.S. economic deficit with China and bring American jobs back home (Kapustina, Lipková, & Silin, 2020). For instance, figure 2 shows that this issue has been emerging for many years. Over the entire period from 2009 through 2018, Chinese goods exported to the United States jumped from \$297 billion to \$540 billion. Under these circumstances, the American deficit with China has risen from \$227 billion to \$420 billion (increased by 55%) as the world's largest trade deficit. Such long-term trade gap hurts the economy and increases the national debt, which leads to weakening the country's competitiveness.

Because of this massive increase in the U.S. trade in goods deficit with China, President Donald Trump began imposing import tariffs on billions worth of Chinese imports in 2018 to manage the U.S. trade imbalance and to curb the Chinese commercial surplus. Consequently, in 2019 the U.S. trade deficit fell with a percentage of 17.5% to \$347 billion. Commenting on this step, Trump argued that substantially cutting the trade deficit with China would boost annual economic growth to 3% on a sustainable basis (as cited in Mutikani, 2020).

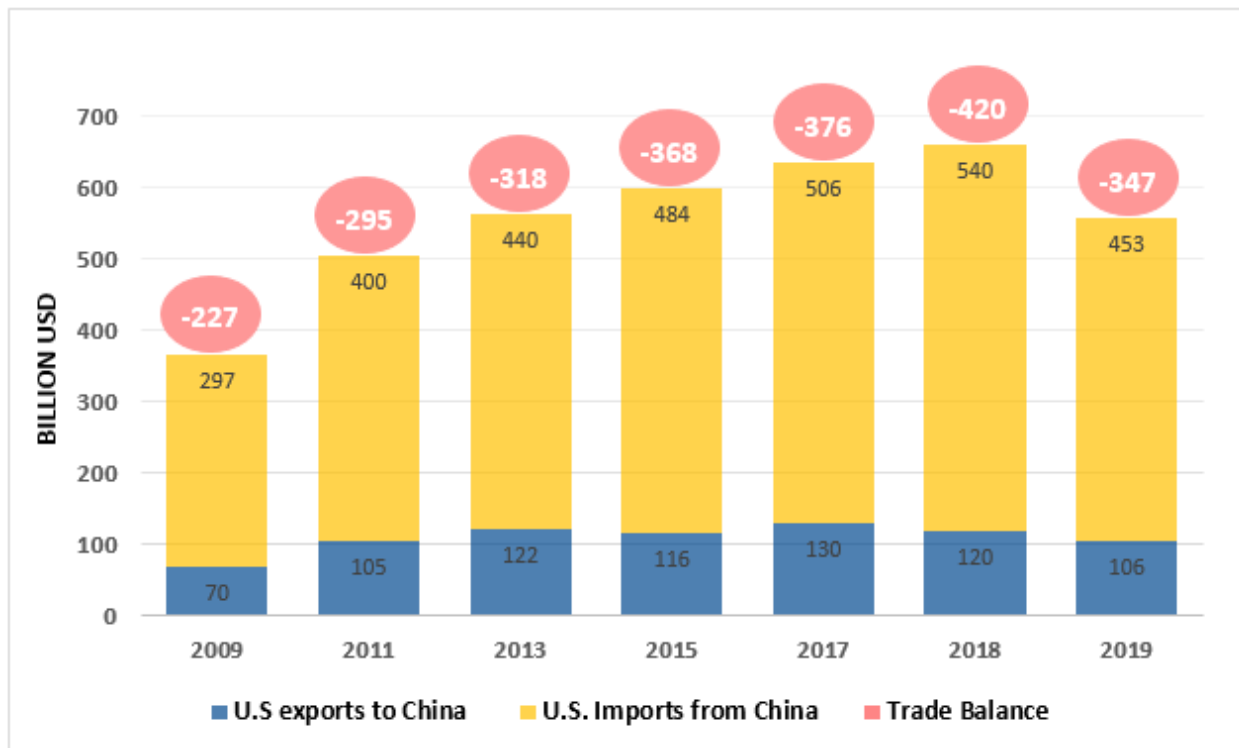


Figure 2. U.S. Trade Deficit with China from 2009 to 2019. Adopted from the CENSUS report 2020.

5.2. Technological Competition

U.S.-Sino relations have entered a period of technological rivalry after China's progress in the field technology industries and the launch of large-scale projects with entirely technological nature. Heath and Thompson (2018) assert that the U.S.-Chinese race for technological leadership becomes more intense because of integrating new groundbreaking technologies which create an

economic growth and secures competitive advantages for geopolitical and military superiority. To cite an example, Chinese hackers regularly attack the American military computers and Pentagon, which have stolen hundreds of terabytes of data, including designs of advanced U.S. weapons systems and nuclear codes. Furthermore, China has built anti-satellite systems and anti-ship ballistic missiles to counter U.S. strengths in space and on the high seas. For this reason, the Trump administration has raised national security concerns over the Chinese of advanced technologies products and waged a campaign against leading Chinese ICT firms.

For the United States, China's emerging dominance in high technologies has a broad threat to strategical, economic, and national security dimensions of American interests. The 2017 National Security Strategy NSS provided an assessment of the perceived dangers of Chinese technological advancements. It argued that Chinese tech companies use a variety of legal and illicit means to acquire U.S. technology. The rapport considered China as having achieved an alarming rivals' capacity to use information as the primary weapon in its geopolitical contest with the United States. Hence, these capabilities lead to the closing of military and technological distance between the two countries, the implication being that those advances must be stopped.

6. Conclusion

This chapter has been an attempt to provide an understanding of U.S foreign policy and its different orientations towards China. While the American foreign policy encompasses all aspects and areas of its engagement with the worldwide to safeguard its interests and to achieve national goals, the strong partnership between advanced technologies and American statecraft has had a significant impact on U.S. hegemony and taking the role of "the globe's policeman." This integration has been evident in the militarization of American foreign policy since the Second World War, which contributed to the emergence of the United States as a global superpower.

Meanwhile, the present chapter has revealed that U.S. foreign policy is confined not only to the state's domestic affairs but also affects overseas countries, notably China. Thereupon, U.S. foreign policy towards China was addressed in this part to highlight the overall picture of U.S.-Sino relations, which driven in recent decades by China's remarkable economic and technological rise. Similarly, since the establishment of the People's Republic of China, the U.S.-Chinese relations have developed by twists and turns. After the military confrontation between the two States during the cold war, Richard Nixon's 1972 visit to China has paved the way to create a new stage between them, especially at the economic level, which culminated in the 21st century. Such an economic corporation covered a deep political disagreement between the two different ideologies.

However, the election of Donald Trump as a president and China's technological growth have increasingly reshaped the U.S. policy towards China from an economic partner to a strategic competitor. Firstly, in order to curb the U.S. trade deficit with China, the Trump administration imposed a trade war consisting of tariffs over the Chinese tech giants. Furthermore, the technological miracle of China, in turn, has been seen by the Americans as a potential threat to their security interests. They claim that through these technologies, China can increase its military capacity and ramp up its political role in the region and beyond. So far, this section was a primer of the subsequent chapter that will concentrate on the role of technology in orienting the American foreign policy towards China.

CHAPTER THREE

The Role of Technology in Shaping U.S. Foreign Policy Towards China

Case Study: U.S. Ban of Huawei Company

CHAPTER III

The Role of Technology in Shaping U.S. Foreign Policy Towards China

Case Study: U.S. Ban of Huawei Company

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1. Introduction

The previous chapter demonstrated that the U.S.-Sino relation under Donald Trump's presidency is witnessing a new stage distinct from its predecessors. While prior presidential administrations have attempted to create a stable balance in the U.S. foreign relation with China that equalizes between competition and cooperation in a changeable bilateral relationship, the Trump's policy has shifted the balance with a sharp tendency toward competition and even confrontation with more complexity of economic and technological rivalry. The present study claims that the emerging of advanced technology race marks a turning point of the U.S. foreign policy towards China, which becomes observable through the tech war that was launched by the White House against the Chinese tech companies. Hence, the choice of U.S. ban of Huawei company as a case study aims to shed light on the technological dimension of the U.S.-Chinese conflict for the global influence in the digital age.

Huawei had played an essential role in the construction and development of 4G networks globally and has its equipment and services already deployed around the world as well as the track for 5G technical leadership. It is no coincidence, therefore, that 5G networks are at the center of the U.S.-Sino dispute. Thus, the U.S. and China have adopted different strategies to lead the exclusive deployment of 5G technology.

While the United States has mostly controlled innovation on 4G networks, since 2012, China has been expanding its coordinated effort to dominate the manufacturing of 5G networks and determine operating standards around the world. Chinese omnipresence in 5G infrastructure rollout, embodied in its national telecommunications leader, Huawei, has raised security concerns for the U.S. and hence moved the 5G debate from the technical realm into a geopolitical issue.

2. Donald Trump and Xi Jinping as a Techno-Nationalist Leaders

The term "Techno-Nationalism" coined by Robert B. Reich in 1987, it alludes to the belief that the competitiveness of the nation-state is associated with its scientific and technological development (Li, 1994). Policymakers who adopt this approach use advanced technologies as a tool of national power and economic prosperity. Based on this criterion, many analysts believe that the techno-nationalistic tendency of the current U.S. and China presidents is the primary driver of their technological conflicts. Hence, it is proceeding to determine the entire relations of the two states.

Starting with Chinese president Xi Jinping, the eight years of his leadership have been punctuated by the renewed emphasis on technology as a national strategy of "China Dream" to build a powerful nation that competes with rivals in the U.S., Europe, and Japan. As an example, since 2013, Xi has launched massive technological initiatives such as Made in China 2025, Road and Belt, and Innovation-driven Development Strategy which consists of three stages: The first is to make China an innovative country by 2020, the second is to move China to the forefront of innovative countries by 2030, and the third is to build an innovation power by 2050 (Litao, 2016). In response to this hallmark, the former Australian Prime Minister Kevin Michael Rudd stated that Xi Jinping is much more of a nationalist and ideological than previous leaders of China (CNBC, 2018).

On the other side, after agonizing concerns among pundits and think tanks about the new trajectory of U.S. foreign policy, which generated by the fact that President Trump has never subscribed to a consistent ideology, it has become clear that the latter adopts a techno-nationalistic approach which aims to maximize the economic interests and maintain U.S. global hegemony. As an illustration, in the 2017 National Security Strategy, Donald Trump increasingly acknowledges

the importance of coordinated national innovation, R&D, and the tech industry on the U.S. competitive advantage and its economic growth, such as nanotechnology, quantum, big data science, encryption, and artificial intelligence. Furthermore, under suspicion of a threat to U.S. National Security Innovation Base (NSIB), Trump's administration is eager to restrict the flow of technology to China as a defensive strategy against the competitors.

3. Huawei as the Center of U.S.-China Tech War

3.1.1 An Overview of Huawei Company

Huawei is a privately-owned provider of information and communications technology (ICT), infrastructure and smart equipment; it was founded by Ren Zhengfei, a former engineer with the Chinese army. Zhengfei served in the unit of Information Technology Research of People's Liberation Army (PLA) between 1974 and 1983 before establishing Huawei Technologies in 1987. In 2018, Huawei started in launching the fifth-generation wireless network technology 5G. Currently, Huawei is the first developer and vendor of 5G technologies hardware. Such success is based on substantial investments in R&D, which exceeded \$15.3 billion in 2018 to rank the first in the world. It can be seen from the data in the figure 3 that Huawei is the largest network service supplier in the world; it has as much as 30 percent of the global market share of mobile infrastructure equipment with a significant amount from the most competitors, Ericson and Nokia. Huawei operates in more than 170 countries, serving over three billion users around the world, with an estimated brand value of around 90 billion U.S. dollars in 2019 (Wong, 2020).

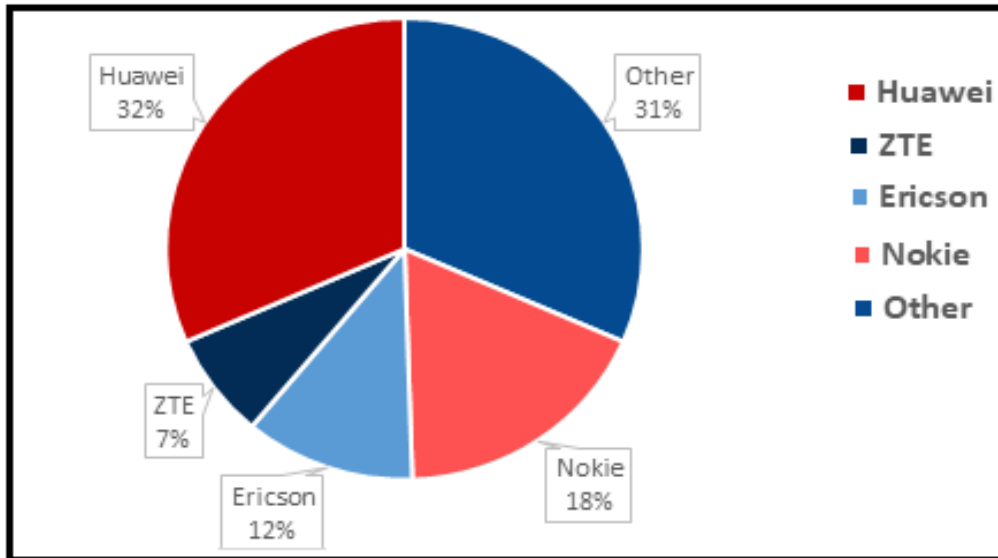


Figure 3. Market Share of Network Infrastructure Equipment Companies in 2019. Adopted from “Statistica” By S. O’Dea, 2020.

3.1.2. The Back Story of Huawei's Ban by the U.S.

In May 2019, President Donald Trump signed an executive order adding Huawei to the trade blacklist of the domestic market. Following this order, the U.S. Commerce Department listed Huawei and its 68 affiliates on the Entity List, which prohibits it from doing business or conducting transactions with the U.S. companies without approval by the American government. Under this procedure, the giant corporations such as Google, Intel, and Qualcomm had cut ties with Huawei. Such a blockade would make the Chinese company in intractable problems in terms of marketing and supply of raw materials, particularly concerning the semiconductors and electronic chips, which rely on U.S. companies by 40 percent (Ge, 2019). In fact, this interdiction extends various restrictions exercised by the U.S. government against the technological units of China. They notably started during Barack Obama's reign. Accordingly, Huawei is not the first Chinese high-tech company banned by the U.S., it followed ZTE firms and another smaller Chinese telecommunications companies, and followed by a dozen of technological entities such as NetPosa, China's most prominent artificial intelligence manufacturers.

Fundamentally, the U.S. officials have attributed this ban to "a critical national security" threats. According to the Federal Communications Commission (2019), Huawei's fifth-generation wireless networks pose severe risks to American national security, including the threat of industrial espionage and the future of 5G in the United States. Additionally, Trump's administration declared a "national emergency" regarding Huawei's Chief Executive Officer Ren Zhengfei due to his previous career with the Chinese military, which is considered as a connection to the Chinese Communist Party and its intelligence services. However, the signs of economic and geopolitical conflict for global hegemony are manifestly reflected through these tensions.

4. Real Issues Behind Huawei Ban

The U.S. alleged against Huawei seems heterogeneous. After over a year of the banning, the U.S. government shows no concrete evidence of espionage or illegal transactions over Huawei. Similarly, Microsoft President and Chief Legal Officer Brad Smith asked the American government to provide a sufficient substantiation backing up the Trump administration's ban on the Chinese company. He added that the U.S. decision-makers are mistreating Huawei, and they have not enough proof about the national security threat posed by Huawei (Bass, 2019). Meanwhile, Huawei's founder and chief executive officer, Ren Zhengfei, accused the U.S. attempts to demolish the company because of its growing success. He vehemently refuted that Huawei spy for China's government and described the U.S. ban of Huawei "as politically motivated" (Zaamout, Alton, & Houlden, 2019). This questionable case raises many queries about the actual causes of these disputes. All in all, most specialists agree that the main issue vis-à-vis this rivalry is surrounding 5G, which in turn, radiates into economic, security, and geopolitical factors.

4.1. Race For 5G Wireless Networks

4.1.1. A Glimpse of 5G Technology

The fifth generation of telecommunications wireless (5G) is the state-of-the-art technology of mobile broadband that was eventually followed the 4G/LTE networks. 5G offers hugely fast data transmission speeds as high as 20 gigabits-per-second; up to 100 times that of 4G networks, as illustrated in the table below. Such speed provides massive benefits for future economic development and national competitiveness, including specific military applications. In this regard, Kaska et al. (2019) argue that 5G rollout is recognized as a strategic choice rather than merely a technological medium for its expected role in the digitalization of economies, societies, and military systems.

Table 1.

Compared Item	4G Networks	5G Networks
Latency (taken time between when data is sent and when it arrives)	10 Milli Second	< 1 Milli Second
Data Transmission Speed	1 Gigabits per second (max)	Up to 20 Gigabits per second
Maximum Download Speed	150 Megabits/s	1 to 10 Gigabits/s
Connection Density	10 ⁴ devices per Km ²	<Million devices per Km ²
Applications	High-speed uses, mobile TV, wearable devices.	Remote precision medicine, smart cities, connected cars, Internet of Things (IoT), Device to Device control (D2D), broad control of drones, Robots, AI.

Note 1. Comparison of the key parameters of 4G and 5G technologies. Adapted from “ICT-Based Business Communication with Customers in the 4th Industrial Revolution Era,” by B. Kim, 2019, *Business Communication Research and Practice*, 2(2), p.56.

Strictly speaking, 5G is a set of technical grounds that is changing the way interaction with technology on a day-to-day basis. At first, 5G will enable the Internet of Things (IoT), which

supports the simultaneous access of massive numbers of devices to the network. In 2018, the American Institute of networking for the Internet, CISCO, estimated that more than 500 billion devices will be connected to the internet through IoT by 2030. This technology brings a much more flexible network to support interconnected or autonomous devices, such as smart cities, self-driving vehicles, ensure artificial intelligence functions seamlessly, industrial machinery, and advanced robotics. Besides, with its higher level of scalability and flexibility, 5G is considered the beginning of the fourth Industrial Revolution that can enable new industries and contribute to a dynamic digital economy. In this vein, Johnson and Groll (2019) expect that 5G will be the central nervous system of the 21st-century economy. Moreover, 5G's high data rates and low latency possess promising implications for military operations, particularly for autonomous vehicles, tasked satellites, and drones. Likewise, it provides significant operational advantages in the systems and processing of intelligence, surveillance, and reconnaissance (ISR).

4.1.2. Emerging 5G in the U.S.-China Geopolitical Rivalry

The United States and China, as nation-states, are dominating the global race to deploy 5G networks. The geopolitical competitions of the two great powers firmly restrain the intrinsic actors of 5G, such as vendors and operators, and Huawei is a stakeholder in this equation. In this regard, it has been noted that the global introduction of 5G is often portrayed as a technological race between political systems (Gu, et al., 2019). It is by far compared with the space race between the United States and the Soviet Union during the Cold War.

Unlike the rest of civilian technologies, the full scope of 5G networks is not confined to telecom providers and equipment manufactures but also encompasses the governments and regulatory bodies. Michael Kratsios, the Deputy U.S. Chief Technology Officer in the White House Office of Science and Technology Policy OSTP, stated that "In the information age, the

nation that leads the world in wireless technology wins" (White House Gov, 2019). The U.S. is making all possible efforts to move forward in implementing this technology as a "strategic resource" in achieving its national interests, such as standard-setting, patents, and the global supply chain.

So far, the U.S.-Chinese geopolitical struggle for technological leadership is reflected in the variety of strategies pursued by the governments lead in 5G technology development and deployment, which have mirrored on the relations between the two countries. On the one hand, the American sustainable strategy is based on the idea that the state's competitiveness is mainly contingent on the extent of its dominance of wireless technology. Therefore, the U.S. continues to invest in its rewarding experience with 4G leadership in 5G's race (Gu, et al., 2019). However, looking at table 2, it is apparent that the lack of efficient competitors in the U.S. stands as an obstacle to rival the Chinese tech giants such as Huawei, ZTE, and CATT. On the other hand, China's plan focuses on high series of public investments with a government-coordinated guiding program, which made 5G platforms as a strategic priority based on a long-term approach (refer to table 2).

Table 2.

	United States	China
Degree of Strategic Planning	Upper-intermediate	High
Roll-Out	Launch in 2019 and broad coverage by 2025	Launch in 2020 and broad coverage by 2025
Biggest Gap	Lack of national competitor	Launch in 2020, the U.S. restrictions
Area Coverage	Upper-intermediate	Vast
Biggest Asset	4G Leadership	Government dedication, large investments in 5G R&D

Note2. Comparison between the U.S. and Chinese Strategies in the 5G race. Adapted from "Geopolitics and the Global Race for 5G," by G. Xuewu, 2019, *Center for Global Studies*, p.19.

The strategic spectrum policy of 5G adopted by the U.S. and China is vital in the process of its standardization to establish norms and requirements for technical systems, which in turn, enables interoperability and ensures the widespread commercialization of this technology under the custodianship of the controlling party of this technology. Perez (2020) believes that standards-setting is critically important because it ultimately determines the provider of 5G networks globally. For instance, the development of 5G's standards-setting relies on technical contributions of the technological companies, containing patented technologies that are known as Standard Essential Patents (SEP). Currently, China has been expanding its influence on the 5G standardization process due to the large number of patents held by its companies. Figure 3 shows the considerable lead of Chinese companies in the race to 5G SEPs, accounting for 36 percent of the global 5G patents and make Chinese 5G technology in practice indispensable. Meanwhile, U.S. companies are lagging with only 14 percent. Such a ratio gives an advantage to China to have the most substantial influence on 5G standards-setting

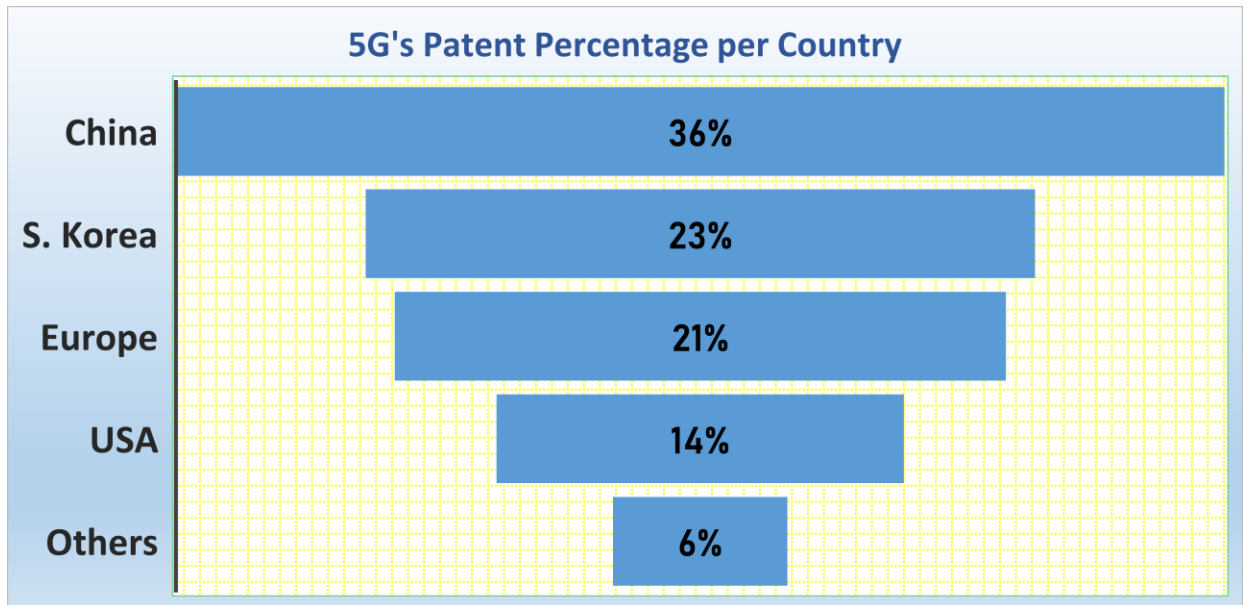


Figure 4. Major 5G Patent Holders in 2019. Adapted from Geopolitics and the Global Race for 5G, by G. Xuewu et al., 2019, p.23, Center for Global Studies.

4.2. Cybersecurity Concerns of Huawei Networks

Even though the features of 5G generation bring a host of new opportunities to the technological landscape in various areas, it will be accompanied by severe risks and novel insecurity of disruption or exploitation. As an illustration, a large number of connected devices through IoT and big-data transfers make them easy prey for attackers and malicious purposes. Consequently, The U.S. government is concerned that vulnerabilities in Chinese equipment could be used to conduct cyberattacks, military threats, or industrial espionage. In this vein, the National Security Adviser in the Trump's administration, Robert C. O'Brien, declared: "We have evidence that Huawei has the capability secretly to access sensitive and personal information in systems it maintains and sells around the world." (Palli , 2020).

Similarly, some specialists believe that the main fear of the U.S. is that Huawei could install snooping devices for the Chinese government and its intelligence service. On this matter, two presumptions support these concerns: the first is that Huawei has a history of strong state support and apparent linkages to the Chinese military and intelligence. The second is the potential hidden "backdoors" in Huawei equipment, which allows full access to the sensitive database, espionage, and IP theft. As a result, Trump's administration has taken steps to block Huawei and the other Chinese companies from the construction of the 5G network in the U.S.

4.3. Threats of Huawei's Economic Competitiveness on the U.S. Tech Firms

The U.S. technology companies have risen to prominence as a critical contributor to economic growth, national security, and the state's competitive edge. For instance, high-tech firms such as Apple, IBM, Alphabet, and the others do not affect only the American market, but also drive the global economic activity. According to the Consumer Technology Association (2019), in 2018, the U.S. technology sector has supported more than 18 million jobs and provided \$2.3 trillion to

the national economy, which represents 12% of the American GDP. However, the exponential growth of Chinese technological entities, notably Huawei, has become a serious challenger to U.S. economic supremacy. By way of illustration, the leading U.S. technology company, Apple, which was the highest seller of smartphones, as shown in the graph of figure 5. In 2018, Huawei exceeded Apple to be the first smartphone shipper in the world by the second quarter of 2020. This significant growth was one of the main reasons that lead the U.S. government to ban Huawei from its local market.

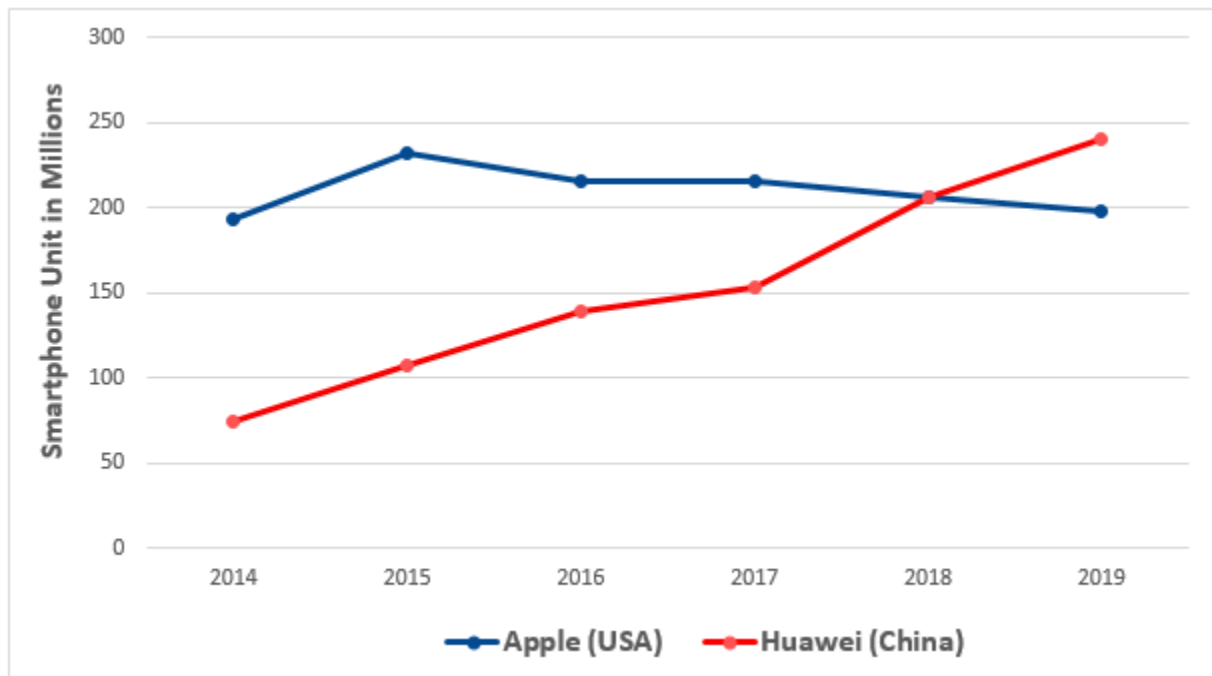


Figure 5. Huawei vs. Apple Smartphone Shipments' Growth 2014-2019. Adapted from Statista, by S. O'Dea, 2020.

5. The Role of Technology in U.S.-China Trade War

The U.S.-Sino economic rivalry is primarily based on the technological competition. In his influential article, Gros (2019) has shown that the reasoning behind trade war between the U.S. and China is not due to the bilateral trade deficit or frustration about lost economic opportunities, but because of the U.S. concern that China is on course to outcompete its technological dominance

in several sectors considered critical for national security. As an example, China is grounded in information and communications technology (ICT) networks to provide the fundamental communication channels for global connectivity of two substantial economic projects, Digital Silk Road and Made in China 2025. For this purpose, many analysts believe that the final policy of Donald Trump to address the economic tide of China is to target its technologies sector by all means at its disposal.

5.1. Digital Silk Road Challenges

China is intensifying its interest on the Digital Silk Road (DSR) as a subset of its broader Belt and Road Initiative (BRI). The latter was established in 2013 in order to enhance connectivity and economic collaboration across Asia, Europe, Africa, and Latin America and close to 100 partner countries (as shown in figure 6). DSR is projected to provide BRI countries with advanced IT infrastructures, such as broadband networks, e-commerce hubs, and smart cities (Wenyan, 2018).

Through this project, China leverages technology to increase its strategic influence to create its own digital highway with its standards using 5G as a baseline for other technologies like artificial intelligence, data analytics, and IoT. However, U.S. policymakers see the DSR as “an unacceptable risk to international security, including attempts to persuade allies to prohibit Chinese corporations from contributing to their critical digital infrastructure.” (Council of Foreign Relations, 2019). In addition to considering it as a model of exploiting technology by the governments to repress their population. Therefore, as a reaction to these challenges, the U.S. government has significantly increased the investment of its resources to develop national technology and advance innovation. Furthermore, The United States is working with its allies along the BRI to counteract the spread of Chinese technologies.

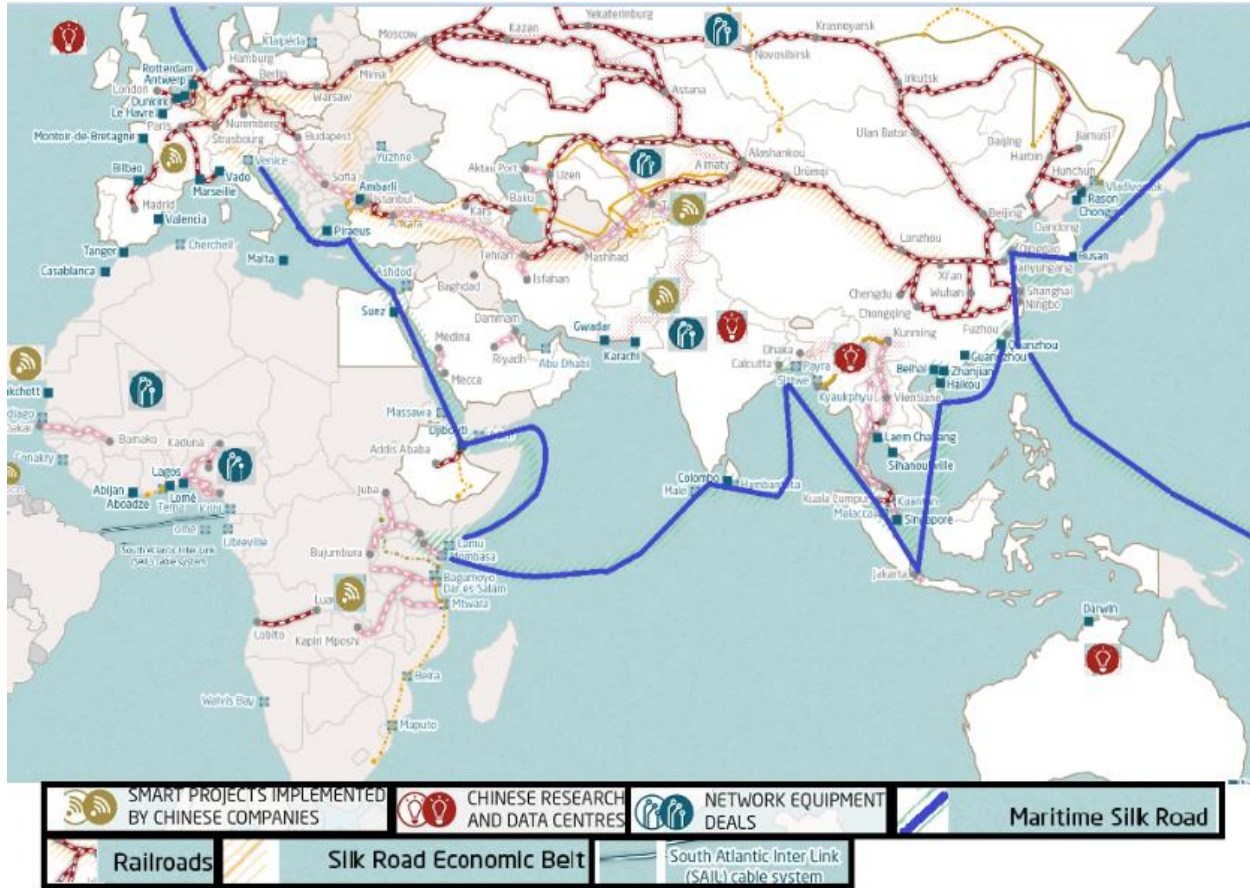


Figure 6. Digital Silk Road Networking. Adapted from The Mercator Institute for China Studies, by T. Eder, 2019.

5.2 Made in China 2025: Economic Plan for Technological Implementation

In 2015, the Chinese government launched Made in China 2025 (MIC 2025) initiative, which sets to modernize the technological capabilities in ten key sectors of the manufacturing industries. This initiative aims at transforming China from a manufacturing giant into a world manufacturing power (Huimin, 2018).

Policymakers and security officials in the United States increasingly see China's efforts to become a dominant player in high technologies as national security threats because they have "blurred the lines" between civilian and military purposes. In this end, the U.S. Trade Representative, Robert Lighthizer, stated that MIC2025 is an example of Chinese intentions to

undermine America's high-tech industries and its economic leadership through unfair trade practices and industrial policies (USTR Gov, 2018). Besides, the U.S. executive branch has introduced a package of policies and specialized plans to hinder the initiative through a trade war, including levy tariffs and other trade measures in order to restrict Chinese investment in critical industries. Furthermore, the U.S. government is targeting Chinese companies by restriction and ban from tech-related acquisition since technology is a vital part of MIC2025.

6. Repercussions on the U.S. in Case of Losing its Technological Superiority

Many American think tanks and politicians today caution that the U.S. is in danger of losing its competitive edge in advanced technology. Galama and Hosek (2008) stated two drivers of this concern. Firstly, globalization and the rapid technological growth of other nations, particularly China and India. Secondly, fear that the American policy in science and technology is unsustainable. Strengthening the S&T capacities of the state is directly linked to America's economic and military strength as well as its global strategic leadership. Therefore, losing technological superiority puts the U.S. dominance at stake by decrease the country's capabilities and furthering limitation of its political influence, hurt the U.S. economy, living standards, and national security, especially since China is paving the way to become a world leader in many high-tech industries through intensifying its investment in R&D. Accordingly, Donald Trump signed the American AI Initiative executive order in implementing a range of policies that are designed to promote sustained investment to train the next generation of American researchers and collaboration with industry, academia, international partners and allies (USA Gov, 2019).

7. U.S. Foreign Policy Options to Hamper Chinese Technological Edge

For the United States, the broad national security dimension of China's technology expansion presents unique challenges to the American policymakers in formulating a coherent and effective policy. While some experts believe that U.S. foreign policy tools to restrain the Chinese technological edge are limited, Trump's administration is eager to integrate the economic and political policies to protect American national interests. The following are a range of steps undertaken by the U.S. to resist Chinese influence through its advanced technologies.

7.1. Semiconductors as Leverage Resource

Semiconductors are compounds that provide the necessary materials and circuitry necessary to produce the microchips, which in turn, are required to operate all the electronic products. The U.S. is the leading supplier, manufacturer and developer of semiconductor chips worldwide. On the other hand, China is critically reliant on the U.S. to supply semiconductors for its technology industry, with more than 60% of global consumption in 2019, as the largest importer exceeding its imports of oil (Alsop, 2020). Consequently, Trump's administration exploits Chinese dependency of U.S. semiconductors as a crucial point of leverage in its attempt to limit Chinese dominance of 5G and in the broader advanced technologies. Going forward, through an executive order of May 2020, the U.S. tightened its restrictions by requiring semiconductor manufacturers to obtain an exclusive license to sell to China entities. The U.S. Department of Commerce considered this decision as a measure to mitigate the dangers posed by Chinese industrial policy (USA Gov).

7.2. Economic Coercion

The clues have confirmed beyond any doubt that the U.S.-Sino trade restrictions are driven by technology vying between them. Yet, the economic sanctions have become an essential

instrument in the U.S. containment strategy against China's high-tech programs. Among such measures is the following:

- Imposing tariffs and trade remedies on Chinese tech products;
- Banning from the domestic market;
- Promoting the role of the Committee on Foreign Investment to block Chinese foreign investments and acquisitions;
- Make a grievance procedure to the World Trade Organization against China's tech firms.

7.3. Pressure on the Allied States

Through the diplomatic mechanisms with its partners, The United States is trying to dissuade other countries from further developing technology ties with China. In this direction, Washington has warned the strategic alliances from Chinese infrastructure projects and urged their governments to follow its lead and ban or restrict Huawei from the core network functions on grounds China could use its equipment for spying and violation of digital sovereignty of the states and threatened them with limit the intelligence sharing in the case of allowing the Chinese equipment into their networks. By way of illustration, Vice President Mike Pence at the 2019 Munich Security Conference unambiguously declared:

The United States has also been very clear with our security partners on the threat posed by Huawei and other Chinese telecom companies, as Chinese law requires them to provide Beijing's vast security apparatus with access to any data that touches their network or equipment. We must protect our critical telecom infrastructure, and America is calling on all our security partners to be vigilant and to reject any enterprise that would

compromise the integrity of our communications technology or our national security systems (The White House, 2019).

To date, foreign governments' reaction to the U.S. insistence has been uneven, while successful among some of its allies such as Australia, Japan, the United Kingdom, and New Zealand. Instead, other partners have preferred to review and increase scrutiny rather than excluding China's equipment. (see Appendix B for the geographical representation of Huawei's situation worldwide).

8. Conclusion

There is a consensus that Huawei's 5G infrastructure has led to a U.S. tech war against China based on a geopolitical consideration, interest calculation, and perceived gap in values between the U.S. and China. This case study attempted to cast light on the role played by China's advanced technologies in shaping the U.S. foreign policy towards China, exploring Trump's economic and political options to minimize China's influence and the consequences of the technology race in the U.S.-China bilateral relations.

The present chapter illustrated that the U.S. policymakers are convinced that the 5G networks technology is a crucial tool for economic prosperity, military capacity, and national interests and, thus, securing its global dominance. However, the rapid expansion of China's programs in high-tech capabilities, notably Huawei's success in 5G manufacturing, as well as its linkages to the Chinese military and intelligence, has raised the U.S. concerns about espionage and national security by the Chinese government. In this context, the controversy over 5G standardization turned the U.S.-Chinese relations from a race for technological superiority into a geopolitical and economic battleground.

Ultimately, The White House is currently taking all the possible measures to protect the U.S. interests and hold back Huawei's growing influence. Consequently, the U.S. imposed economic sanctions through imposing tariffs and banning to limit Chinese technology products on the American local market. Also, Trump's administration has activated its diplomatic relations to pressure its allies to prevent Huawei from building their next-generation wireless networks.

General Conclusion

General Conclusion

The present research set out to highlight the extent to which high technology and its ownership influence the foreign relation of the United States in the digital age. This dissertation contains three main chapters. The first chapter has focused attention on how new technologies have been integrated into the framework of the study of international relations. It is argued that with technological advancement and globalization, the interaction between the states' domestic policies and foreign relations has been more frequent and dynamic. The chapter also tackled the official bodies by which the U.S. government adopts determinations regarding science and technology issues.

The first theoretical chapter has revealed that the state's ability to innovate and produce advanced technologies provides economic prosperity, military strength, and an intangible benefit of perceived leadership. Thus far, the supremacy of digital information technologies determines the country's role and status in the world's hierarchical structure. Besides, it has shown that the expansion of ICT platforms has shifted the political conduct of foreign affairs between the nations where they provided new diplomatic instruments for the more traditional forms between governments. Moreover, the advances in industrialized countries exert such leverages to pursue their national interests.

The study has also demonstrated that the global hegemony of the U.S. is mainly a result of its domestic policy in science and technology, which reflected on its technological competency in the critical sectors. Such policy is an interdependence of the executive and legislative branches whereby each entity involved several regulatory offices and bodies that specially designed to

establish a sustained procedure in science and technology to maximize the U.S. interest's achievement.

The second chapter has put forward an understanding of U.S. foreign policy and its repercussion on the bilateral relation with China. It has been noted that while the central objective of U.S. foreign policy cannot be changed, the tools of its implementation are fluctuating as appropriate in the global circumstances. In this respect, the current section has shown that economic sanctions and advanced technology are vital instruments in U.S. foreign policy. The former is a crucial means in the U.S. containment strategy against any competitive power; it is used to limit rival's access to the military, industrial or economic advantages. At the same time, technology became critically pivotal in conducting U.S. foreign affairs. During the Second World War and the Cold War, the new technologies had shifted the U.S. foreign policy from the isolation to militarization, which was decisive in ending the wars and emergence of the U.S. as the only superpower in a unipolar world.

Moreover, this chapter has analyzed the development of U.S.-Chinese relations since 1949. The bilateral relations between the two states are increasingly enhanced by the common interests and tensed by conflicting ideologies. Accordingly, from 1979 to the first decade of the twenty-first century, the two nations have developed a mutually productive array of ties and interactions in a growing multitude of domains, particularly in economy and investment, technological cooperation, and cultural exchanges. However, the exponential growth of China, most notably in the technological sector and Trump's arrival to the White House, have radically reshaped the American policy toward China from an economic partner to a strategic competitor that represents existential threats to U.S. national security. Ultimately, the two states have engaged in a trade war and technological competition; throughout these constraints, U.S. policymakers attempt to abort

the Chinese Communist Party's ambitions to establish a new global power with a different ideology.

The third chapter brought under light the American embargo of the Chinese company, Huawei, as a case to examine the overlap between the advanced technologies and U.S. foreign affairs. This part revealed that the techno-nationalist propensity of both U.S. and China current leaders drowned them in an economic and geopolitical struggle for dominating the critical modern technologies, namely 5G networks manufacturing, which emerged as the principal front in U.S.-China rivalry because it is widely expected to be a vital platform to realize the full potential of military and civilian systems.

The quantitative analysis of this research has proven that China, through its giants Huawei and ZTE, is in a narrow lead to dominate the race of 5G standards thanks to a combination of industry momentum and government support. The U.S. treats such developments as blurring the lines of its national security. Consequently, Trump's administration carried out packages of restrictions against China's tech firms that include economic coercion, ban from the local market, and the diplomatic pressure on the U.S. partners to prevent them on the grounds of espionage and intelligence, unfair trade practice, military use, and security concerns.

All things considered, the results of the present research have validated the hypothesis that modern technologies are the crucial instrument by which the U.S. is maintaining its global competitive edge, which leads to other advantages, from economic prosperity to military superiority. Taken together, this dissertation has been indicating that the overall rivalry waged by the U.S. against China aims at technological supremacy, which leads to global domination. To this end, the U.S. employs the political, economic, and diplomatic tools to preserve its global hegemony.

The challenge for future research will be to investigate the consequences of the technological race on the distribution of power and the world's polarity. Besides, it is recommended that further studies be undertaken to assess the impact of U.S.-China technology competition on the European States and the developing countries.

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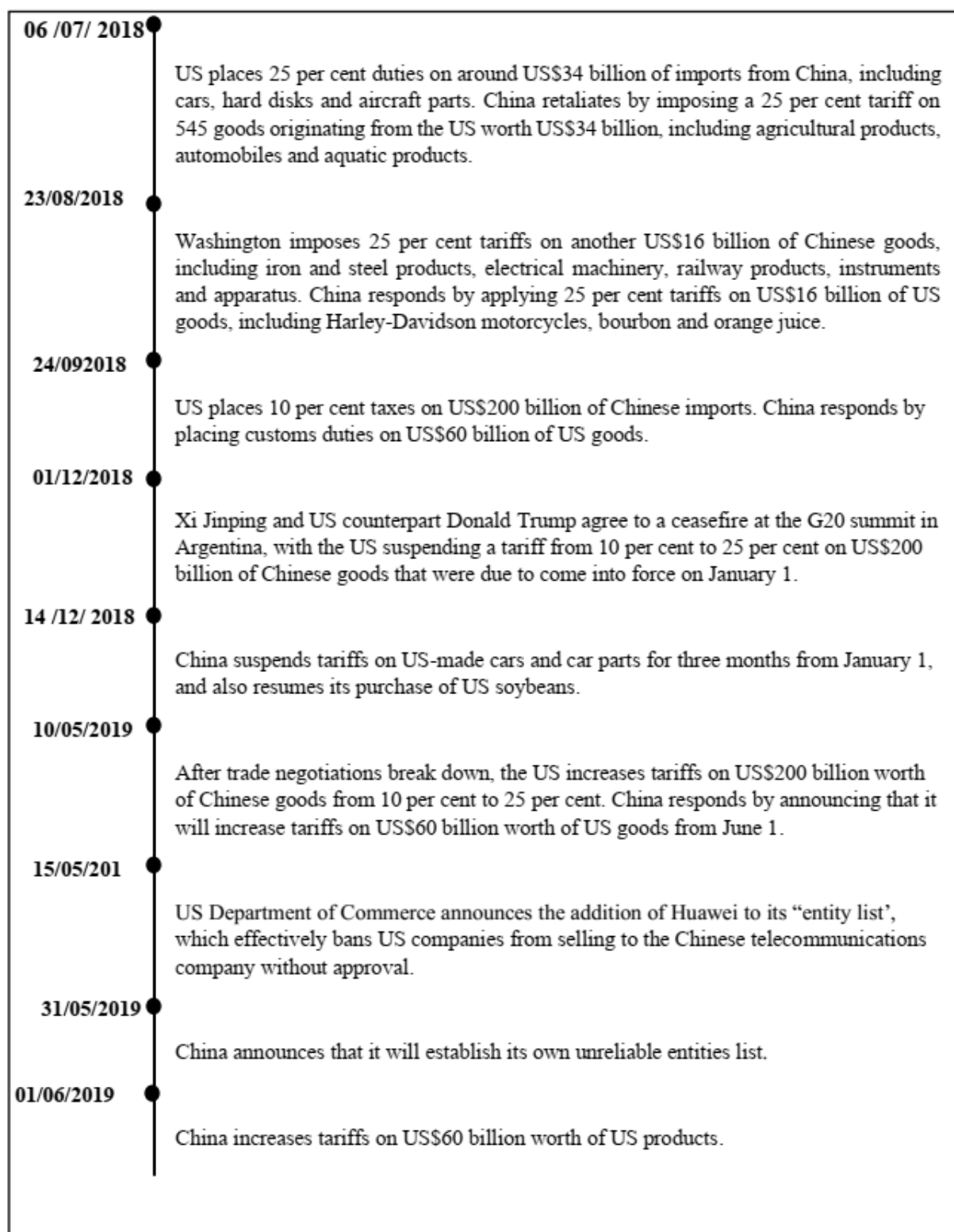
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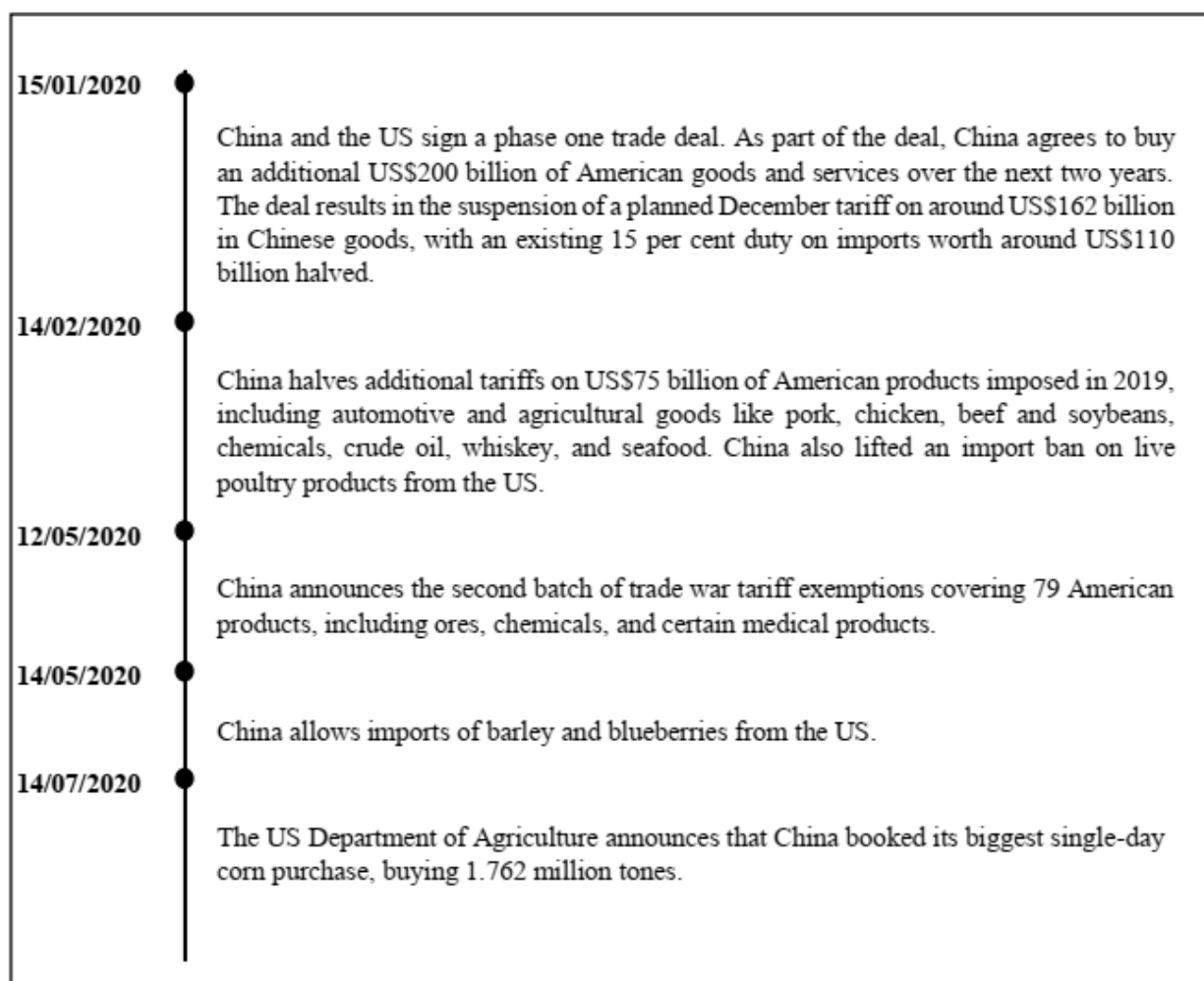
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Appendices

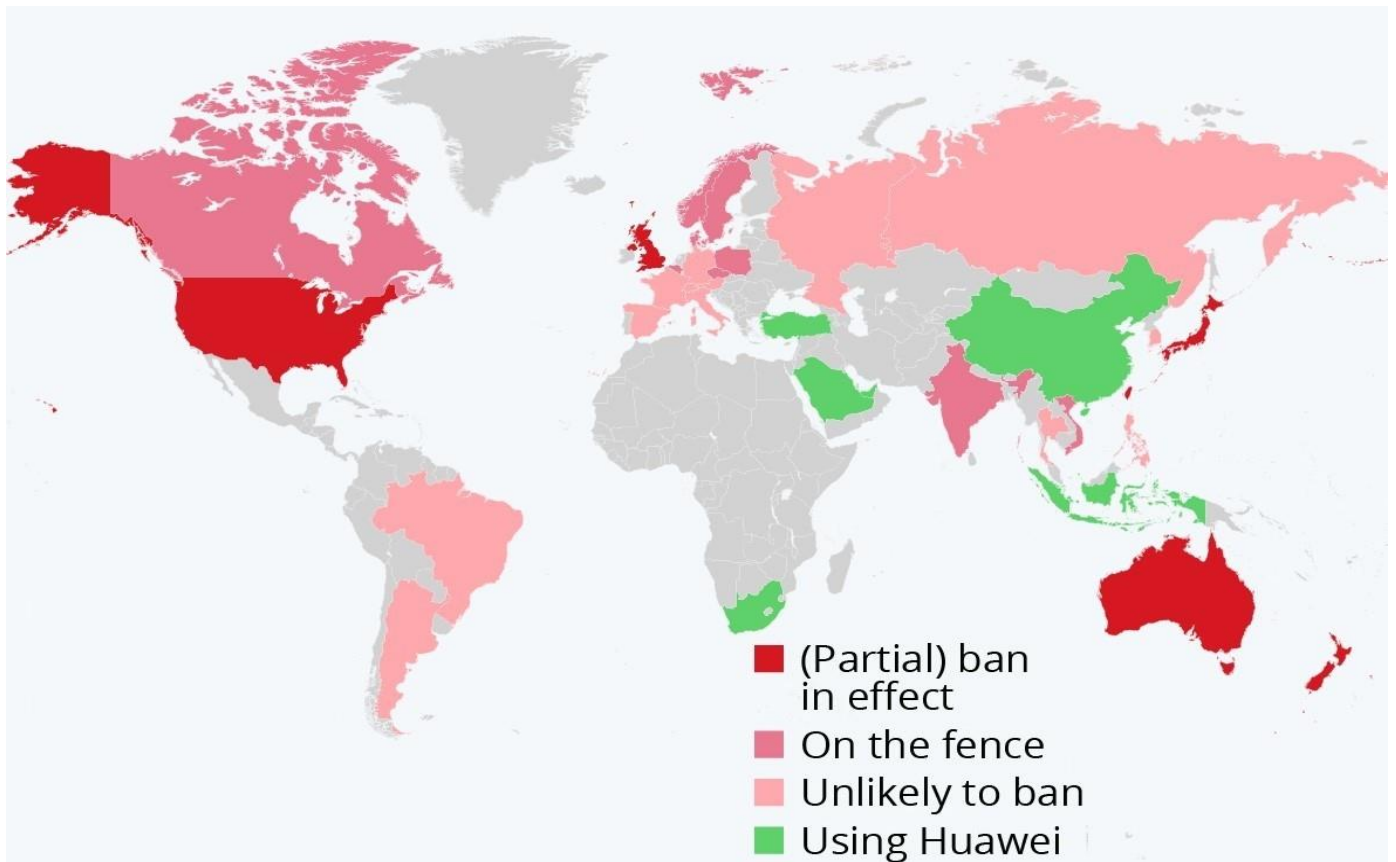
Appendix A US-China Trade War Timeline (All the key dates since July 2018)



01/08/2019	<p>Donald Trump announces plans to impose a 10 per cent tariff on US\$300 billion of Chinese goods from September 1.</p>
05/08/2019	<p>US designates China as a "currency manipulator" after the yuan weakened to below 7 to the US dollar.</p>
13/08/2019	<p>Donald Trump announces that planned levies on many of the US\$300 billion of Chinese products threatened to start in September 2019 have either been delayed or removed. Levies of 10 per cent on US\$155 billion of products such as including phones, laptop computers, and video game consoles will be delayed until December 15.</p>
23/08/2019	<p>China announces tariffs of 5 and 10 per cent on US\$75 billion of US goods from September 1 and December 15. China also confirms it will reinstate tariffs on US cars and car parts from December 15.</p>
01/09/2019	<p>US tariffs on more than US\$125 billion worth of Chinese imports begins as expected.</p>
11/10/2019	<p>China announces that it will offer exemptions to 16 types of US imports from additional tariffs, which include products such as pesticides, animal feeds, lubricants, and cancer drugs. Donald Trump agrees to delay new tariffs on US\$250 billion worth of Chinese goods from October 1 to October 15 as a goodwill gesture to avoid the 70th anniversary of the People's Republic of China.</p>
13/10/2019.	<p>China announces it will exclude imports of US soybeans, pork, and other farm goods from additional trade war tariffs.</p>
11/10/2019	<p>US announces that it will delay a planned tariff increase of 25 percent to 30 percent on US\$250 billion of Chinese goods set for October 15 following trade talks in Washington.</p>
13/12/2019	<p>China and the US agree to a phase one trade deal days before a 15 percent tariff was set to be imposed on around US\$160 billion of Chinese goods. The US agrees to reduce tariffs on US\$120 billion of Chinese goods imposed in September. China suspended tariffs on US goods also due to come into force on December 15.</p>



Appendix B The Geographical Representation of Huawei's Situation Worldwide



الملخص

مع مطلع القرن الواحد والعشرين، أصبح للتكنولوجيا دورا حاسما في رسم تغيرات النظام العالمي؛ حيث يبرز تأثيرها في العلاقات الدولية والسياسات الخارجية للدول، والذي يتجلى خاصة في توزيع القوى حول العالم. في هذا السياق، يشكل التفوق التكنولوجي الجزء الأهم في تحديد معالم السياسة الداخلية والخارجية للولايات المتحدة الأمريكية، والذي تحافظ من خلاله على مكانتها كقوة عظمى في العالم. لكن بزوغ قوى جديدة كالصين مثلا، التي تركز على تصنيع التكنولوجيات العالية خصوصا الجيل الخامس لشبكات الانترنت، يجعل من استعمال التكنولوجيا كأداة للعلاقات الخارجية لأمريكا أمرا شديدا الأهمية. يهدف هذا البحث لتوضيح دور التكنولوجيا في توجيه السياسة الخارجية للولايات المتحدة وكذا تحديد ماهية صراعها مع الصين، والذي يأخذ منحى الحرب التجارية والتنافس على الهيمنة والنفوذ العالمي. في سبيل الاجابة على هذه التساؤلات، تتبنى هذه الدراسة المنهج الوصفي التحليلي مقرونا مع دراسة حالة افرادية وذلك في محاولة الإحاطة الكمية والكيفية للبحث. اظهرت نتائج الدراسة ان التكنولوجيا المتطورة تمثل الحلقة الرئيسية في استمرارية سيطرة الولايات المتحدة على العالم كقطب وحيد، كما اثبتت ان التقدم التكنولوجي المافيت للصين يشكل خطرا محققا على ريادة الولايات المتحدة للعالم. وكنتيجة لهذا البحث، تشير القرائن ان الولايات المتحدة ومن اجل حماية مصالحها تستعمل أدواتها السياسية، الاقتصادية والدبلوماسية في سبيل كبح التقدم التكنولوجي للصين وشركاتها، وعلى وجه الخصوص العملاق التكنولوجي هـواوي.

الكلمات المفتاحية :

التطور التكنولوجي؛ الحرب التجارية؛ السياسة الخارجية للولايات المتحدة؛ شبكات الجيل الخامس؛ صراع الهيمنة؛ العلاقات الدولية.

Résumé

Le développement des technologies de pointe joue un rôle crucial dans le processus de transformation dynamique du système international. Au tournant du siècle, l'impact de la technologie sur les affaires internationales et la politique étrangère, en particulier ceux des technologies de fabrication, est particulièrement omniprésents par le biais de la transformation du pouvoir entre les nations. Par conséquent, comme pour les États-Unis, la suprématie technologique a toujours été une priorité dans la conduite de la politique intérieure et étrangère afin de préserver son statut de superpuissance mondiale. Cependant, l'utilisation de cet outil est devenue plus compliquée face à des nations en pleine croissance comme la Chine. Les recherches actuelles tentent d'étudier le rôle joué par la haute technologie dans l'orientation des relations étrangères des États-Unis vers la réalisation de leurs intérêts nationaux. En ce qui concerne les relations entre les États-Unis et la Chine, le développement substantiel des compétences technologiques de la Chine, notamment dans le domaine des réseaux sans fil (5G), a entièrement déplacé leurs relations vers un conflit géopolitique ouvert. Cette étude met en lumière la course technologique en tant que nouvelle dimension de la politique étrangère américaine afin de déterminer si cette lutte est une guerre commerciale ou une rivalité pour la domination mondiale. Pour atteindre ces objectifs, une combinaison de la méthode descriptive-analytique et de l'approche par étude de cas est utilisée, qui comprend certaines données numériques converties en graphiques pour exprimer le phénomène étudié à la fois quantitativement et qualitativement. Ces méthodes sont adoptées pour fournir des illustrations arrondies et détaillées des facteurs qui affectent les relations étrangères des États-Unis. Les résultats indiquent que le progrès technologique est un instrument essentiel pour maintenir l'hégémonie mondiale des États-Unis et que l'émergence de la Chine en tant que pôle technologique indépendant met la domination américaine dans une situation critique. L'étude conclut que le gouvernement américain utilise des mesures politiques, économiques et diplomatiques contre les géants de la technologie Chinoise comme Huawei pour protéger sa supériorité technologique.

Mots-clés: Guerre commerciale; Hégémonie mondiale; Interdiction de Huawei; Politique étrangère des États-Unis; Relations internationales, Relations sino-américaines; Technologies avancées; Technologies sans fil 5G.