

Emergent Challenges in International Investment Law: Investing in ICT

Abstract

Information and communication technologies (ICTs) represent a comprehensive sector of communication devices, applications, and services. As this sector has rapidly developed, its transformative impact on nearly every component of modern life has made sustainable development a priority, as detailed in many national economic agendas, as well as the 2030 Agenda for Sustainable Development. Countries around the world invest in and/or receive investments in ICTs to support their growth and development goals. International investment laws, namely bilateral investment treaties govern these investments and attempt to balance the interests of the host states with those of foreign investors. These competing interests and laws raise questions and create unique challenges for the respective parties - challenges that emerge within the context of the international investment laws governing foreign investment in ICTs. This article explores three particularly tenacious categories: strategic, structural, and substantive. Strategic challenges threaten macro-level interests and major policy aims that influence the survival and inherent functions of a nation state when considering and allowing actors from other locales to own and/or control technologies that have far reaching public policy implications including economic progress, national security, and human development. In contrast, structural challenges in this context relate to the compositional and definitional makeup of the investment agreements, demonstrating the incompatibility of terms and coverage detailed in investment agreements and treaties for investments in the ICT sector's intellectual property and digital assets. Finally, substantive challenges relate to the rights and duties included in investment agreement provisions and are key to determining what investors and host states can/cannot do post-investment.

Keywords: Information and communication technology (ICTs), foreign investment, human development, international law.

I. Introduction

Information and communication technologies (ICTs) represent a comprehensive sector of communication devices, applications, and services. As this sector has rapidly developed, its transformative impact on nearly every component of modern life has made it an economic and developmental priority, both domestically and internationally because it either enhances or contributes to the growth and sustainability of various economic sectors, including but not limited to healthcare, education, energy, and civics. As such, the prevalence and ubiquity of the technologies demonstrates their importance to international development goals, such as those detailed in the 2030 Agenda for Sustainable Development.¹

Countries around the world invest in and/or receive investments in ICTs to support their social and economic growth goals. Bilateral investment treaties govern these investments and attempt to balance the interests of the host states with those of foreign investors. Competing interests and sometimes poorly fit laws raise questions and create unique challenges for the respective parties - challenges that emerge within the context of the international investment laws governing foreign investment in ICTs. Because prior research has demonstrated the importance of ICTs for development, inconsistent laws and policies potentially limit the dissemination of the technologies, thereby preventing them from being taken up throughout key development sectors, such as education, healthcare, and transportation.

This article provides an exploration of the emergent challenges foreign investment in ICTs creates for international

¹ A/RES/70/1

investment law, noting three particularly tenacious categories: strategic, structural, and substantive. The remainder of this article will proceed as follows. Part II provides an overview of information and communication technology and ICT regulation, highlighting its defining characteristics and the importance of regulation. Part III discusses the emergent strategic, structural, and substantive challenges that emerge pre- and post- foreign investment in ICT. It provides an overview of each category, and highlights specific instances when the challenges emerge. And part IV concludes with a brief summary of the emergent challenges, as well as their implications on development, security, and investment.

II. Background

Information and computer technology (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.² Over the last 70 years, this sector has dramatically evolved from mere telephone and telegraph systems to one of the most dynamic technological systems of all time, accounting for around 10 per cent of GDP in most developed countries, and up to 20 percent of global economic growth.³ It is now a crucial driver of both economic and social growth in both international and domestic arenas, not only providing the infrastructure for modern economies to function, but also fostering efficiency and growth in other sectors such as healthcare, education, and commerce. It “provides one of the most important and ubiquitous infrastructures of the modern economy and society, the infrastructure that facilitates information processing and storage and communication.”⁴ This foundation, coupled with electricity and transportation networks, provides the infrastructural basis on which all human activity in the modern world depends.

A. ICT Regulation

As the benefits of ICT investment continue to materialize, foreign direct investment (FDI) in the sector has become a global phenomenon, with the technology serving a dual role as a traded product and a facilitator of trade in other products and services.⁵ Globalization has made it increasingly important to connect to international communication and trade networks. So, at the same time that international free trade became the norm for many countries, investment in and prioritization of information and communication technologies became necessary. Liberalized foreign investment in ICTs promote economic gains including infrastructural development, new and improved telecommunication products and services, lower prices and additional investment, as well as increased technological skills, funds, and market competition. Specifically, ICTs are key to the development of modern infrastructure including wireless grids for telecommunication services, lights and signals for transportation networks, and systems needed for energy pipelines and terminals. As such, many countries have sought to increase their global competitiveness and levels of development by utilizing foreign investments in information and communication technologies.

But opening one’s market to foreign investment also creates a variety of challenges, especially in the ICT sector. Telecommunications have a substantial role in national security, social stability, and economic development, so foreign investment opportunities in the sector have historically been limited.⁶ As countries work to achieve economic development and meet the 2030 Sustainable Development (amongst other international) goals, they seek to utilize investment in the information and communication technologies that have come to promote well-being, inclusive and equitable education and engagement. But with liberalized private ICT markets, national issues of sovereignty and security collide with the priorities and interests of investor.⁷ Nevertheless, countries not willing to make investor-friendly commitments may find it difficult to attract foreign investment in ICT, potentially limiting their infrastructural development, access to technology, and access to modern skills and knowledge.

² Martin Fransman, *The New ICT Ecosystem* (Cambridge, UK, Cambridge University Press, 2010).

³ *Idem*, pg. xi.

⁴ *Ibidem*.

⁵ Lin, *Selected International Rules of Foreign Direct Investment in the Telecommunications Sector and its Influence on Taiwan’s Telecommunications Legislation* (Annual Survey of International & Comparative Law. 2010).

⁶ *Idem*, pg. 30

⁷ *Idem*, pg. 31

Varied benefits and competing interests between host states and foreign investors reveal the complexities that have emerged at the intersection of two prevalent global phenomena: the growth and development of information and communication technologies and regulation of FDI by bilateral investment treaties. While technology and investment laws both purportedly support international development goals, the characteristics of information and communication technologies and the geopolitical climate governing modern international investment are not inherently compatible. And these incompatibilities create a variety of strategic, structural, and substantive challenges for international investment law.

III. Emergent Challenges for International Investment Law in the Context of ICTs

A. Strategic Challenges

As noted above, the intersection of ICTs and international investment law is very complex and results in a myriad of challenges. One category of emergent challenges is strategic. Strategic challenges threaten macro-level interests and major policy aims that influence the survival and inherent functions of a nation state. With regard to foreign investment in the ICT sector, the most notable and apparent strategic challenges require balancing competing investment interests with economic growth, national security, and human development.

1. Economic Growth

There is no precise definition of a strategic industry; in fact it varies greatly with time and national priorities. In the modern world however, most, in both the developed and developing world, will agree that ICTs are strategic because of their expansive economic implications. And the international community and the United Nations, as reflected in the Sustainable Development Goals,⁸ continue to highlight the importance of these technologies in sustained and inclusive economic growth, quality education, healthy lives, and infrastructural development. In the field of economic development, an industry is considered to be strategic if it provides services that facilitate a variety of economic activities, is highly public, and has backward and forward linkages to suppliers and users that lead to more growth and innovation.⁹ The United States, Western European countries, South Korea and China have targeted ICTs as central component of their national economic strategies, noting their importance in promoting competitiveness.¹⁰

As communication technology has developed over the past few decades, the ICT sector differentiated itself from other regulated industries because telecom consumers want and need access to their counterparts in virtually every geographic location in the world to communicate internationally. This continued interconnectivity is key to the inclusivity, reliability, and access needed for the growth and engagement of sustainable societies. Thus, national ICT regulation and FDI seeks to provide service to the population by facilitating investment and trade in services and infrastructure. Allowing foreign investment let developing states to take advantage of the knowledge and resources of developed states, while developed states grow their domestic enterprises. Additionally, foreign investment in ICT provides more competition, improving consumer choice and lowering overall costs.¹¹

While international investment in ICTs can be lucrative for investors and economically beneficial for host countries, further inquiry evinces some cause for concern. First, because ICT is so transformative economically, foreign control and ownership of it is not always welcome. Foreign investors, like all business actors, seek to maximize their profits; this can be done in a variety of ways that could limit or inhibit national economic competitiveness. And because Bilateral Investment Treaties (BITs) often provide more stringent protection for foreign investors than what national laws provide, an erosion of economic competitiveness resulting from investor actions and protected by international agreements could cause financial setbacks or even crisis and social unrest.¹² Strategically, this creates a

⁸ A/RES/70/1

⁹ Robert G. Harris, *Telecommunications Services as a Strategic Industry: Implications for United States Public Policy, Competition and the Regulation of Utilities* (United States, Springer, 1991), p. 101.

¹⁰ *Idem*, p. 98.

¹¹ Laura S. Huffman, Comparative Review of Foreign Direct Investment Policies for Telecom Services in the United States, India, and Australia: Why Back to the Multilateral Future is the Best Choice for States, Consumers, and Suppliers, *Emory Int'l L. Rev.* vol. 22 (2008), p.308.

¹² UNCTAD/DIAE/IA/2008/5

seemingly never-ending cost-benefit analysis between protecting an economically strategic industry and fostering development by allowing foreign investment into it.

For example, for years now, there have been negotiations aimed at developing a BIT between the United States and China. Because of the divergent geo-political, economic, and social priorities between the two, no such agreement has been reached. These efforts, in conjunction with other policy developments reveal the potential benefits for both states, but also highlight the ways in which foreign investment could inhibit economic progress. Professor Daniel C.K. Chow identifies objectives that China could achieve by reaching an investment agreement with the US, objectives that include investment in ICTs, but that threaten the economic interest and growth of the United States.¹³

By providing market access and injecting international trade law principles into the domestic legal systems to protect from discriminatory measures, first, the BIT would allow China to expand the reach of its state owned enterprises, which are already massive.¹⁴ State owned enterprises (SOEs) are government owned, but (supposedly) operate as independent commercial entities. Historically, China has had a policy of promoting its SOEs to be able to compete with the world's largest multinational companies. Increasing the dominance of SOEs by allowing them to invest in the US ICT sector threatens the stability and progress of US firms. The United States believe SOEs operate as instruments of the state and Communist Party and thus "threaten the economic viability of US firms at home and abroad."¹⁵ Because mergers and acquisitions are the common mode by which FDI occurs in the US today, when China acquires a US Company, it would obtain the tangible and intangible assets such as its portfolio of intellectual property, as well as confidential business information. As such, the BIT would allow Chinese SOEs to gain access to key technology and infrastructure, allowing China to "further its national goal of becoming a global leader in technology innovation."¹⁶ While this is very beneficial for competition, allowing such investments threaten the position of the US economy as a world leader in information and communication technologies.

In addition to such threats to national economic progress, international investment agreements challenge all economic progress because, functionally, it has been argued that they are inadequate regulatory mechanisms for ICTs.¹⁷ From a consumer standpoint, BITs are potentially counterproductive. The goal of modern telecommunication service regulations is to foster a global network with common technology, wherever possible, thus the technology encourages coherent regulation.¹⁸ Investment agreements between two countries make the overall system more difficult by requiring numerous agreements per country and throughout the global ICT ecosystem. And these conflicting regulations increase transaction costs. "Conflicting regulations drive the costs of service up, diverting investment in cost reductions and technology enhancements, which provide a better end result for the consumers."¹⁹ Strategically, existing international investment law wastes diplomatic resources by requiring a plethora of bilateral agreements, which vary in structure and substance, and create divergent policies for a comprehensive and yet rapidly changing ICT sector, potentially costing consumers and investors.

2. National Security

Another strategic challenge that emerges at the intersection of international investment law and foreign investment in ICT is national security. National security is a collective term for the defence and foreign relations of a country and the protection of that country's interest.²⁰ Essentially, countries face a paradox of wanting to reap the benefits of international trade and investment, but also wanting to protect themselves, their territory, and their citizens. ICTs create new and prevalent threats to peace and security. And because ICTs are such integral parts of life, they make modern states especially vulnerable. But in their efforts to promote peace, inclusivity and accountability, countries recognize the importance and sensitivity of the technologies and thus try to manage the threats and enhance the

¹³ Daniel C.K. Chow, Why China Wants a Bilateral Investment Treaty with the United States, *Boston University International Law Review*, Vol XX, (2015).

¹⁴ *Idem*, p. 426.

¹⁵ *Ibidem*.

¹⁶ *Idem*, p. 427.

¹⁷ Mila, Gasco-Hernandez, ed. *Information Communication Technologies and Human Development: Opportunities and Challenges: Opportunities and Challenges*. (London, UK, Idea Group Publishing Global, 2006.)

¹⁸ *Idem*, p. 312.

¹⁹ *Ibidem*.

²⁰ Kim R. Holmes, "What is National Security?", 2015 Index of U.S. Military Strength, 2016", 2016, Available from <http://index.heritage.org/military/2015/important-essays-analysis/national-security/>

security of foreign investments in ICTs that influence infrastructure, defence and security. The increased dependency on technology creates security threats ranging from everyday activities such as banking, but also, more serious and potentially life threatening activities such as air traffic control.²¹

This prevalence and dependence has changed the traditional notion of national security. Most notably, it has made state governments dependent on private industry and commercial infrastructure.²² The ICT industry and its critical infrastructure are so interlinked that an organized attack or disruption could have a significant impact on a state's ability to defend it.²³ The President of the United States issued an Executive Order noting specifically, that incapacity or destruction of telecommunications would have a debilitating impact on the defence or economic security of the country.²⁴ Additionally, the US developed the National Security Telecommunications Advisory Committee.²⁵ The committee is composed of a group of CEOs from some of the nation's leading telecommunications and information technology corporations, tasked to focus on the private sector's relationship and support of specified national security applications. These efforts and assertions represent the real and perceived threats ICTs pose to national security and highlight the importance of the interaction between government and the private ICT sector.

As the adoption for information-based products and services have become a trend, countries struggle to balance their pecuniary interests from investments with the national security threats that could potentially emerge. Private investors have a variety of motives that may or may not inhibit security, including but not limited to profit maximization, maintaining economically efficient operations, protecting trade secrets and other intellectual property, and maintaining a satisfied customer base.²⁶ Because ICTs are so strategic and critical to enhancing and maintaining security, some countries have elected to take a more restrictive approach toward foreign investment in the sector. Foreign control over critical communications infrastructure could have numerous and insurmountable repercussions if and when the investor's ownership or investment rights are one day misused.

For example, in 2008, the Committee of Foreign Investment in the United States (CFIUS) blocked a \$2.2 billion bid by the Chinese Company Huawei Technologies to purchase the US company 3Com.²⁷ Huawei allegedly has ties to the Chinese military and government and 3Com is an insolvent US Technology firms. US officials, including the Secretary of Treasury, argued that Huawei's acquisition of US technology would pose a threat to national security interests.²⁸ In particular, CFIUS noted that it believed large national Chinese companies to be controlled by the Chinese government so any investments it make could become tools that the Chinese government uses to accomplish strategic geo-political and military objectives.²⁹ Additionally, permitting Huawei to acquire 3Com would provide China's government a medium to gain access to sensitive information technology.³⁰

Arguably, states could voice the same concern about their own nationals owning and controlling critical ICT infrastructure. But because international investment agreements are often more stringent than national laws and require compromise and consensus building, BITs impose certain limitations on the rights of each country to regulate foreign investment in its territory, exclusively. In most cases, there may be national security exceptions in investment agreements, but it remains unclear whether or not the restrictions are broad enough to cover restrictions on foreign investment to protect critical infrastructure or whether the exceptions are limited to traditional military defence efforts.³¹ It is thus a continued challenge for the host state's government to find the appropriate balance

²¹ Peter Gross, *An Introduction to the Impact of Information Technology on National Security* (Duke Journal of Comparative & International Law, 1999) at 395.

²² Walter Gary Sharp Sr., *Redefining National Security in Today's World of Information Technology and Emergent Threats*, *Duke J. Comp. & Int'l L.*, vol. 9 (1998), p. 383.

²³ *Idem*, p. 384

²⁴ Clinton, William J. "Executive Order 13010." *Critical Infrastructure Protection* (1996): 13.

²⁵ William Gravel, *Some Observations Along the Road to National Information Power*, *Duke J. Comp. & Int'l L.*, vol. XX (1998).

²⁶ *Idem*, p. 401

²⁷ Wayne M, Morrison, Cong. Research Serv. RL33536, *China U.S. Trade Issues 3*, (Current Politics and Economics of Northern and Western Asia 20.3, 2011)

²⁸ Tina Lam, *The Legal Hurdles Preventing a U.S. China Bilateral Investment Treaty: Problems With National Security, Environmental and Labor Standards, and Investor State Dispute Settlement Mechanisms* (Florida Coastal Law Review, 2014).

²⁹ *Idem*, p. 309.

³⁰ *Idem*, p. 310.

³¹ UNCTAD/DIAE/IA/2008/5

between reaping the benefits of foreign investment in the ICT sector and being able to secure and protect its strategic interests impacted by the ICT sector.

3. Human Development

Another strategic challenge that could potentially emerge at the intersection of international investment law and foreign investment in ICTs concerns human development. Human development is understood as the process of expanding people's choices, "that is, the range of things that a person could do and be in life, or the functioning and capabilities to function such as to be healthy and well nourished, to be knowledgeable, or to participate in the life of a community."³² Scholars, civil society, and policy makers assert that there is undeniably a link between the adoption of ICTs and human development, because they improve how well resources are allocated, expands the possibilities of fulfilling capacities, create a foundation for other substantial benefits.³³ While ICTs are not considered to be a development panacea by anyone, they are undeniably a piece of the puzzle because they are essential to economic success, personal advancement, entry into good career and educational opportunities, full access to social networks, and opportunities for civic engagement.³⁴ Furthermore, they have been included in the Millennium Development Goals and in the UN 2016 Sustainable Development goals.³⁵ And while these development implications are far-reaching and pervasive, they are rarely the concerns of investors, particularly those with few or no ties to the nation because of their narrowly focused, pecuniary goals.

As such, domestic policy makers must find an effective mix of strategies to attract foreign investment while complying with the rules of BITs and furthering their domestic human development goals. Research has shown that outside control and top-down approaches to ICT investment in the developing world does not work and endangers stability. And even in developed markets, there is usually a divide between what ICT service providers are willing and/or able to do on commercial grounds and what the government considers to be necessary from a development perspective.³⁶ When investing internationally, ICT owners are seeking new markets, higher returns, and diversified exposure. Additionally, in poor and rural communities (of both developed and developing countries), ICTs cost more and the spending capacity of the local communities is lower than operating costs. So governments focusing on human development goals must work diligently and strategically to attract substantial foreign investment in ICTs, while also developing domestic policies that support and enhance infrastructural development, universal access, and affordability, health and well-being, quality education, gender equality, safety, resiliency, and peace.

Not only are these interests difficult to balance, the imposition of the rules contained in BITs limit domestic governments' ability to achieve that balance. BITs are parts of a modern liberalization agenda, and thus are inherently designed to limit government control. So while some suggest that governments could catalyse foreign investment in ICTs by awarding subsidies to targeted beneficiaries, this practice would conflict with several of the key provisions of investment agreements such as fair and equitable treatment, national treatment, and most favoured nation. Governments also need to encourage the investors to provide access to all and at prices they can afford. But because BITs provide investors with strict protection, government's development goals must work within the margins of privatization, liberalization, intellectual property rights and investor protection. In Timor-Leste, ICT service costs are far beyond the budgets of the local communities because private investors are focused on profit maximization.³⁷ Consequently, there is substantial investment in the sector, but the majority of the population still lacks service and thus, access to knowledge, personal advancement tools, and other resources for civic engagement. In this and many other cases, each with varying structures, working within those margins to achieve strategic human development goals through foreign investment in ICTs has proved especially challenging.

³² Gasco-Hernandez, Information Communication Technologies, footnote 17, p. viii

³³ Idem, p. vi

³⁴ Idem, p. 2

³⁵ A/RES/70/1

³⁶ Qiang, C. Z. W., Lanvin, B., Mingos, M., Swanson, E., Wellenius, B., Clarke, G. R. & Safdar, Z. Information and Communications for Development: Global Trends and Policies (The World Bank Group, 2006)

³⁷ HDRP2010/37

B. Structural Challenges

In addition to the aforementioned strategic challenges, several structural challenges also emerge at the intersection of ICTs and international investment law. Structural challenges in this context relate to the compositional and definitional makeup of the investment agreements and determine what the law governs and whether it threatens the rule of law by failing to establish clarity and order within the legal text. With regard to foreign investment in the ICT sector and international investment law the two structural challenges relate to intellectual property protection and digital assets.

1. Intellectual Property

ICTs do not easily fit into the existing rules and structures of international investment agreements. As the proliferation of ICT hardware, software, multimedia networks, and digital communications technology has produced a new global information infrastructure, investment in the sector around the world has proven to be particularly lucrative for those owning the intellectual property rights to the technologies. Nevertheless, the rapid development of the sector and the pressing development needs of many nations left little time for a clear and functional understanding of what (national and/or international) and to what the laws apply.

Intellectual property (IP) is a work or invention that is the result of creativity, to which one has rights and for which one may apply for a patent, copyright, trademark, or trade secret protection.³⁸ Around the world, national and international standards vary regarding how to protect the IP within the ideas, tools, functions, hardware, and software that makeup ICTs. National laws determine the scope, content and form of IP rights in their country if they have the characteristics of investments. While bilateral investment treaties and multilateral agreements, such as the WTO's Agreement on Trade-Related Aspect of Intellectual Property Rights (TRIPS), have different, and often more inclusive, definitions of "investment," these differences often result in different levels of protection of IP rights.

For example, if a bilateral investment treaty provides IP protection for an encrypted program carrying satellite signals,³⁹ but one member party does not include IP protection for such technologies in its domestic law because it does not recognize it as an investment (perhaps because it is a developing country, with no access or knowledge to the technology), that domestic law clashes with the agreement to which the host country has signed. Because neither the domestic law nor the BIT explicitly includes or excludes the rapidly developing technology, leaving the terms open for interpretation so the coverage is left to interpretation. This issue is especially important for ICT investors because it determines if, when and how their investment will be protected. Both intellectual property law and international investment law attempt to create conditions that encourage private companies to invest in ways that benefit the company and the state, such inconsistencies in the structure of the laws raises questions about the rights of the property holder and potentially, the legality of the state's conduct.⁴⁰

Structurally, the rules governing the protection of IP rights for ICTs are inconsistent and out-dated, as they were created in a different technological context. These deficits in international investment law regarding if and when intellectual property constitutes an investment asset and what kind of IP rights apply to the technology have great implications for the future of foreign investment in ICTs. The definition of "investment" sets out the subject matter coverage of the agreement and establishes the scope and breadth of investments being covered. If BITs include IP in their definition of investment, the substantive provisions of the agreement are applicable, but may require states to update their domestic standards of protection. For ICT in particular, this prevents host states from being able to license or utilize the digital, and seemingly intangible, components of the technologies. It also grants the owner/investor the temporary monopoly that allows them to make profits, encouraging more investment.

Unfortunately, the dissonance and conflicts between the laws are particularly challenging for both sustainable development and economic growth generally, but also for many of the specific goals particularly. For example, in many cases, BITs and domestic IP laws limit the amount of technology transfer that could occur. Technology

³⁸ Ermias Tekeste Biadgleng, *IP Rights Under Investment Agreements: The TRIPS-Plus Implications for Enforcement and Protection of Public Interest*, (2006), Available at SSRN 943013

³⁹ *Idem*

⁴⁰ Peter B. Rutledge, TRIPS and BITS: An essay on compulsory licenses, expropriation, and international arbitration, (*NCJL & Tech.* vol. 13 (2012), pp.149-287.

transfer refers to the uptake and utilization of modern and innovative technologies used by the general public, but also, within industries. Limiting the transfer of technology from investors to the host countries forces the individuals in the host country to continually rely on investors. This is especially unsustainable because the laws may change and the investor's interest frequently changes so the technology could be taken away. The unsustainability of the current investment in ICTs as intellectual property practices threatens the long-term goals detailed in the 2030 Agenda for Sustainable Development.

2. Services and Digital Assets

As a result of recent technological advancements and economic policies, many countries have shifted their foci from manufacturing to services. Services comprise a diverse set of activities and in the ICT space they touch nearly every economic sector.⁴¹ Furthermore, within the modern technology driven service economy, a variety of digital assets and service mechanisms, such as websites, have arisen and provide an enabling framework for other social, political, and economic activities. And while services and digital assets are of utmost importance, their innate characteristics have proven especially challenging to fit into existing regulatory structures, including the BITs that govern foreign investment. Essentially, the issue comes down to whether or not ICT services and digital assets are considered investments or not because if they are, then the BITs apply.

While "investment" does not explicitly include or exclude digital assets or services in BITs, it is understood in broad terms to encompass every kind of asset owned by the investor.⁴² Furthermore, "services" covers a heterogeneous range of intangible products and activities that are difficult to categorize and distinguish from products in the ICT space.⁴³ Because the activities are occurring ubiquitously they are often assumed to be included in the investment agreements as "investments".⁴⁴ Yet, because it has not been explicitly resolved, if a dispute arises, investors or host states struggle to determine how BIT terms apply. This is especially challenging because the intangible and constantly changing nature of ICT services and digital assets do not fit the mould of existing asset categories that exist in foreign investment law.

Notably, arbitrators have interpreted the terms broadly, with one detailing the difficulties arising in the space as follows, "the IT industry has grown out of a convergence of telecommunications, computer technology and software and the combination with services from more content oriented industries such as broadcasting and publishing which were on the horizon, resulting in a blend of hybrid IT services cloud and is therefore more difficult to categorize into any particular sector."⁴⁵ Then going further to say, "if a service activity falls within the scope of the defining of a sector, then the activity does not explicitly have to be enumerated in the defining, and the mere fact that separate suppliers provide one particular component of a service does not imply that the service is to be classified as a distinct service."⁴⁶ In the few cases that have been brought to arbitration, the trend has been to acknowledge the services and digital assets of the ICT sector as investments. Nevertheless, the equal treatment of electronic/non-electronic services has not been confirmed or denied. And because arbitration decisions are not precedent setting, having unclear specifications in the BITs increases the likelihood of contradictory decisions on closely related issues emerging.

C. Substantive Challenges

And while the lack of detail regarding the scope of ICT investments covered in BITs is a pressing pre-investment concern, there are also substantive challenges that emerge at the intersection of foreign investment in ICTs and international investment law that greatly influence investor and state action for investments that have already occurred. Substantive challenges relate to the rights and duties included in investment agreement provisions and are key to determining what investors and host states can/cannot do post-investment. Much like the structural

⁴¹ UNCTAD/ITE/IIT/2005/2

⁴² Rudolf Adlung & Molinuevo Martín, Bilateralism in services trade: is there fire behind the (BIT-) smoke? *Journal of International Economic Law*, vol. 11.No. 2 (2008), pp.365-409..

⁴³ Rolf Weber and Rainer Baisch, Tensions between Developing GATS Classifications in the IT Markets, *Hong Kong Law Journal*, vol. XX (2003).

⁴⁴ Adlung & Martin, Bilateralism in services, footnote 41, p. 374.

⁴⁵ Idem, p. 98.

⁴⁶ Idem, p. 97.

challenges, substantive challenges in this space arise because of the characteristics of the technology, but instead they threaten the protections and stability provided by investment agreements. The most apparent substantive challenges arising from BIT regulation of foreign investment in ICTs concern standards for expropriation and full protection and security.

1. Expropriation

Expropriation is an action by the state or an authority of taking property from its owner for public use or benefit. As detailed in the prior section, technology/investment transfers are a contentious area because of its economic importance to investors, but also because of the sustainability and growth implications for host states. As noted before, information and communication technologies have far-reaching implications for economic and human development. The technologies are influential in the provision of education, health care, and social services, as well as the infrastructural development and progress. The dilemma arises when host governments allow foreign investment in their ICT sectors to utilize the technologies more expansively than the investor (or investment law) allows or expects. BITs and international investment laws prohibit expropriation, so host governments cannot simply take or use the technologies without compensating the investor. But when the products, services, or assets are inadequately defined (as detailed in part B), it is even more difficult to understand how the host government must behave.

One particularly contentious expropriation debate with regard to ICTs concerns compulsory licenses. Compulsory licensing is when a government allows someone else to produce the patented product or process without the consent of the patent owner, usually for the domestic market. Under the TRIPS agreement, compulsory licensing is not necessarily an expropriation. It does not deprive ownership rights to the technology or intellectual property, but instead provides an exception, for which the host state has to pay.⁴⁷ Nevertheless, it still affects the value and return from the protected asset for the IP right holder. Thus, while countries work to enhance their investor protection so that they are more attractive and have the kind of sustainable economics and infrastructure continually highlighted by the UN in the Sustainable Development Goals, they are limited by how much they can utilize their current investments because of expropriation and licensing concerns. And because the BITs and the exceptions included in TRIPS are unclear, an arbitral panel often decides whether or not a host state's compulsory licensing constitutes expropriation. In such cases, neither the state nor the investor are completely satisfied because the state's development, technology transfer, and economic progress are key concerns which rarely align with investors profit maximization and investment protection goals.

One on-going case that illustrates the complexities of expropriation and compulsory licensing in the ICT sector is *Sistema v. India*, in which a Russian corporation invoked arbitration under the India-Russia BIT after the Indian Supreme Court cancelled 21 telecom licenses.⁴⁸ The court held that the allocation of the licenses was arbitrary, capricious and contrary to public interest and thus violated the doctrine of equity by favouring some telecom companies.⁴⁹ Sistema and other foreign investors had set up joint ventures with Indian telecom licensee companies and claimed that the court's ruling revoking the licenses was an expropriation, raising "various unforeseen and unsettling questions regarding the application and scope of investment law" in the Indian context. Sistema supported its claim for indirect expropriation by arguing that the cancelling of the licenses brought about the same results of a physical taking because it neutralized the investor's enjoyment and benefit.⁵⁰

The standard for determining whether governmental measures amount to expropriation is to see whether the cumulative effect is to substantially deprive the investor of the use, value and enjoyment of the investment.⁵¹ In other cases, arbitral practice has established that revocation or denial of government permits and licenses constitute indirect expropriation when it interferes with the investor's enjoyment. In *Goetz v. Burundi*, the panel ruled even in the absence of any formal taking of the property, revoking free zone certificates resulted in a halt of all activities and deprived the investment of all utility and expected benefits.⁵² And in *Tecmed v. Mexico*, the tribunal found that

⁴⁷ Rutledge, TRIPS and BITS, footnote 39, p. 161.

⁴⁸ Sanya Malhorta, Cancellation of Telecom Licenses in the 2G Case: Claim for Indirect Expropriation, *NUJS Law Review*, vol. XX (2013).

⁴⁹ Malhorta, Cancellation of Telecom, footnote 47, p. 335.

⁵⁰ *Ibidem*.

⁵¹ *Idem*, p. 344.

⁵² *Idem*, p. 346.

revoking an operating license was an act tantamount to expropriation.⁵³ Also, in *CME Czech Republic B.V. v. The Czech Republic*, the tribunal held that the acts of a regulator forcing an investor to give up exclusive licensing rights amounted to expropriation.⁵⁴ Further, in cases where government measures interfere with an investor's legitimate expectation that the state will honour the assurances initially offered to induce the investment, tribunals have ruled that expropriation occurred.

These rulings suggest that the cancellation of compulsory licenses in India is likely to violate BIT provisions and constitute expropriation. But the Indian government could assert that it is exempt from payment because "states are entitled to expropriate foreign property for a public purpose in exercise of their sovereignty...or in exercise of their police powers."⁵⁵ But this may be difficult to support since telecom is not related to public health and or safety. Nevertheless, this and similar cases regarding host state's regulation of its domestic markets and the impacts such regulation has on foreign investment in such a timely and lucrative industry demonstrate yet another contentious challenge emerging from foreign investment in the sector and international investment law.

2. Full Protection and Security

Another challenge of foreign investment in ICTs and international investment law relates to full protection and security provisions (FPS). Full protection and security refers to a standard of protection and security against physical damage that may occur to a foreign investor's property arising from war or civil unrest in the host state.⁵⁶ FPS traditionally governed the physical security of investors' tangible assets, but because of the nature of modern investments in ICT, it is unclear if and how the standard applies to digital and intangible assets, like websites. Attempting to apply this standard highlights one of the most complex qualities of ICTs: their boundless nature, which makes them seemingly incompatible with geographically based laws.

As discussed in part A, digital assets are often considered investment assets covered by BIT. And if they are considered investments, they are to be afforded the same protections and security provided to tangible and physical investments, even though it may be difficult for host states to retain and thus ensure control over things in the digital world. The full protection and security standard refers to the need to protect the investor against physical violence resulting from war or civil disturbances, whether the harm comes from state action or state's failure to protect when caused by someone else.⁵⁷ It requires host states to adopt some reasonable measures to protect the assets and property of foreign investors and has been found not only to "simply concern physical protection but also contains[s] a further requirement that host governments ensure the stability afforded by a secure investment agreement."⁵⁸ Hence, cyberattacks (or the like), which are becoming increasingly commonplace and are likened to civil disturbances, seemingly create an obligation for states to protect and secure the digital assets of corporations.

Furthermore, in *Siemens v. Argentina*, the arbitral tribunal held that the FPS could cover investments of an intangible nature, despite the fact that it is difficult to understand and provide physical security to intangibles.⁵⁹ So, while some protection from the BITs is required for digital assets, it is difficult to propose meaningful government oversight of a website or similar assets. But it may be fair to assert that large-scale internet insecurity or the integrity of ICT infrastructure and communication networks should fall within host state's realm of foreign investment protection. But because of the nature of the technology and the novelty of such attacks and insecurities, "a foreign investor should not expect the same level of Internet security from every state in which it operates, as security against cybercrime can be expensive and requires a high level of technical proficiency and human resources."⁶⁰

⁵³ *Idem*, p.,346.

⁵⁴ *Idem*, p. 347.

⁵⁵ *Ibidem*.

⁵⁶ David Collins, Applying the Full Protection and Security Standards of International Investment Law to Digital Assets, (*Journal of World Investment and Trade*, vol. XX 2011), p. 225.

⁵⁷ *Idem*, p. 230.

⁵⁸ *Idem*, p. 233.

⁵⁹ *Idem*, p. 236.

⁶⁰ *Idem*, p. 241.

IV. Conclusion

As detailed above, the nature and ubiquity of ICTs have significant implications for diverse and far-reaching social, economic, and technological growth and development outlined in the 2030 Agenda for Sustainable Development. And the same innate characteristics however, make ICTs particularly challenging to regulate. In the context of international investment law, these challenges manifest in three categories: strategic, structural, and substantive. Strategic challenges at the intersection of foreign investment and international investment law highlight the competing macro-level interests that exist when considering and allowing actors from other locales to own and/or control technologies that have far reaching public policy implications including economic progress, national security, and human development. Structural challenges in this realm demonstrate the incompatibility of terms and coverage detailed investment agreements and treaties for investments in the ICT sector. These challenges require reconsideration of the definitions and scope provided for investments in modern times, with intellectual property, digital assets, and services challenging existing structures. Substantive challenges for international investment law governing foreign investment in ICTs reveal the need for reassessing and updating the protective provisions included in investment agreements and make clear that host state actions must consider the purpose of provisions when acting to protect or utilize foreign ICT investments.

Advanced economies and emerging nations have demonstrated that ICTs have a pervasive impact on social and economic life and development. These implications have manifested in governance, education, healthcare, poverty reduction, communication and service delivery, urban development, and innovation. Investment in ICTs enables more access to information, transparency, accountability, and citizen empowerment for enhanced governance. The technologies and services of the ICT sector have changed the nature of education and skills, requiring e-literacy, creativity, and innovation. ICT applications have improved healthcare provision through education, training, digitalization, and information sharing. ICTs contribute to poverty reduction by improving communication and delivery infrastructure, increasing productivity, and lower transaction costs. And investment in the ICT sector has resulted in an unprecedented network for communication and information access around the world, allowing individuals, organizations, and states to share knowledge, be more inclusive, and more connected than ever before.

The continued growth and uptake of the technologies throughout society detailed above have transformed some economies, and encouraged others to increase competition through investment to realize those same benefits. And despite the seemingly similar aims of both the sector and investment laws, there is still a huge disconnect between the potential and realized benefits of foreign investment in ICTs. And this disconnect is not only problematic for the particular investor and host-nation involved in a transaction, but also for the advancement and success of the international community, as highlighted by the United Nations in the Sustainable Development Goals. The existing BITs that dominate foreign investment law in the international community limit the prospective benefits of foreign investment in ICTs because of strategic, structural, and substantive interests of either the host states or the investors. As described in part III, the national security, economic protectionism, human development goals, intellectual property rights, intangible characteristics of services and digital assets, provisions of investment treaties and agreements undermine and inhibit the impact and pervasiveness ICTs can have, thus minimizing their reach and the resultant educational, health, governance, development, and growth potential of societies. Because the sector is so lucrative and has such a significant role in modern life, there are no easy solutions, none that will satisfy the vested stakeholders. However, these emergent challenges demonstrate the need for more critical and situational investment agreements that considers the unique issues of differing geographic and socio-economic situation.

V. References

Adlung, Rudolf & Molinuevo Martín, Bilateralism in services trade: is there fire behind the (BIT-) smoke? *Journal of International Economic Law*, vol. 11.No. 2 (2008), pp.365-409.

A/RES/70/1

Biadgleng, Ermias Tekeste, *IP Rights Under Investment Agreements: The TRIPS-Plus Implications for Enforcement and Protection of Public Interest*, (2006), Available at SSRN 943013

Chow, Daniel C.K., Why China Wants a Bilateral Investment Treaty with the United States, *Boston University International Law Review*, Vol XX, (2015).

Clinton, William J., "Executive Order 13010." *Critical Infrastructure Protection* (1996): 13.

Collins, David, Applying the Full Protection and Security Standards of International Investment Law to Digital Assets, *Journal of World Investment and Trade*, vol. XX (2011), p. 225.

Fransman, Martin, *The New ICT Ecosystem* (Cambridge, UK, Cambridge University Press, 2010).

Gasco-Hernandez, Mila, ed. *Information Communication Technologies and Human Development: Opportunities and Challenges: Opportunities and Challenges*. (London, UK, Idea Group Publishing Global, 2006.)

Gravel, William, Some Observations Along the Road to National Information Power, *Duke J. Comp. & Int'l L.*, vol. XX (1998).

Gross, Peter, *An Introduction to the Impact of Information Technology on National Security* (Duke Journal of Comparative & International Law, 1999) at 395.

Harris, Robert G., *Telecommunications Services as a Strategic Industry: Implications for United States Public Policy, Competition and the Regulation of Utilities* (United States, Springer, 1991), p. 101.

Holmes, Kim R., "What is National Security?, 2015 Index of U.S. Military Strength, 2016", 2016, Available from <http://index.heritage.org/military/2015/important-essays-analysis/national-security/>

Huffman, Laura S., Comparative Review of Foreign Direct Investment Policies for Telecom Services in the United States, India, and Australia: Why Back to the Multilateral Future is the Best Choice for States, Consumers, and Suppliers, *Emory Int'l L. Rev.* vol. 22 (2008), p.308.

Lam, Tina, *The Legal Hurdles Preventing a U.S. China Bilateral Investment Treaty: Problems With National Security, Environmental and Labor Standards, and Investor State Dispute Settlement Mechanisms* (Florida Coastal Law Review, 2014).

Lin, Chun Hung *Selected International Rules of Foreign Direct Investment in the Telecommunications Sector and its Influence on Taiwan's Telecommunications Legislation* (Annual Survey of International & Comparative Law. 2010).

Malhorta, Sanya, Cancellation of Telecom Licenses in the 2G Case: Claim for Indirect Expropriation, *NUJS Law Review*, vol. XX (2013).

Morrison, Wayne M., Cong. Research Serv. RL33536, China U.S. Trade Issues 3, (Current Politics and Economics of Northern and Western Asia 20.3, 2011).

Qiang, C. Z. W., Lanvin, B., Mingos, M., Swanson, E., Wellenius, B., Clarke, G. R. & Safdar, Z. *Information and Communications for Development: Global Trends and Policies* (The World Bank Group, 2006)

Rutledge, Peter B., TRIPS and BITS: An essay on compulsory licenses, expropriation, and international arbitration, (*NCJL & Tech.* vol. 13 (2012), pp.149-287.

Sharp Sr., Walter Gary, Redefining National Security in Today's World of Information Technology and Emergent Threats, *Duke J. Comp. & Int'l L.*, vol. 9 (1998), p. 383.

UNCTAD/DIAE/IA/2008/5

Weber, Rolf and Baisch, Rainer, Tensions between Developing GATS Classifications in the IT Markets, *Hong Kong Law Journal*, vol. XX (2003).