

Rule of Law vs. Rule of Code: Understanding the Implications of the International ICT Governance Network

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ABSTRACT: *The Information and Communication Technologies (ICT) includes cellular phones, the internet, computer hardware and software, television and with the help of devices, software and applications it penetrates the communication world. This paper has discussed the network governance model in detail. The technology standards, security and governance of regulations are also widely addressed.*

Keywords: Information and Communication Technology, ICT, Internet Governance, Internet Regulation, Internet Security, Internet Communication

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1. Research Agenda

Information and communication technologies (ICTs) represent a comprehensive sector of communication devices, applications, and services (Fransman, 2010). It includes cellular phones, the internet, computer hardware and software, television, and a myriad of other unique, omnipresent, and easy to use technologies (Fransman, 2010). As this sector has rapidly developed, its transformative impact on nearly every component of modern life has made it an economic, developmental, and security priority. The ICT sector is highly complex, involving a variety of organizational actors, all thoroughly invested in its continued innovation, dominance, and regulation. And because the sector is comprised of technologies that pervade much of modern life – business, law enforcement, health care, defense, research, and education, it has come to have transformative impacts on social policy and regulation (Federal Communication Commission, 2016). With such widespread implications for society, markets, and peace, understanding the regulatory forces influencing its trajectory is fundamental.

As ICTs have rapidly developed, traditional regulatory institutions have struggled to adequately and efficiently regulate the technologies – arguably due to lack of technological expertise, geographic limitations, and resource capacity (infoDev, 2016).

Consequently, private actors and consortia of nongovernmental and industry actors have formed self-governance bodies that work independently of, or in conjunction with, government regulators to govern ICTs domestically and through the international community (Werbach, 2009). This research seeks to understand what has emerged as a complex web of ICT governance that now exists, as well as its implications on the innovation, economics, and development realms that it so dramatically impacts. This network is comprised of governmental, private sector, and nongovernmental institutions, as well as consortia of institutions that have competing interests, varying geographic locales, and a variety of social and technical backgrounds, yet they work collectively to develop technical, legal, and social policies that govern the ICT sector internationally. The global network style of governance has been studied intensely in recent years, as it continues to emerge in various industries in response to globalization, and has gained staunch criticism for illegitimacy and the inability to handle complex problems with significant social ramifications (Rhodes, 1996).

Because of the unique, transnational, and convergent nature of ICT technologies and markets, international ICT governance has significant implications for consumers, service providers, device manufacturers, corporations, software developers, militaries, government agencies, and law enforcement. As such, it is important to understand international ICT governance as an example of an emergent style of governance: multistakeholder network governance, with significant and far-reaching implications as it regulates technologies that shape and transform the way we communicate and impacts the daily lives of much of the modern world. This study, thus, attempts to fill gaps in media and communication market organization, international governance and transnational private regulation, and social network analysis research. In particular, it details and describes the governance network that arguably shapes the ICT market, the emergent regulatory response that utilizes traditional international regulatory tools (treaties) and modern transnational private regulatory tools (technological standards), and the implications of this governance network on the competing policy interests of the stakeholders involved – nation states, private corporations, non-governmental organizations, and even individual inventors.

2. Literature Review & Theoretical Framework

2.1 Information and Communication Technologies (ICT)

The ICT sector has dramatically evolved from telephones, radios and desktop computers to include devices and applications that encompass televisions, mobile phones, computer and network hardware and software, the internet, satellite systems, and other wire and fiber optic infrastructure, as well as the various services and applications associated with them (Fransman, 2010). This research adopts a broad definition of ICTs that encompasses economic activities that fall within the ambit of both the “ICT sector” and the “Content and Media sector,” as defined by the Organization for Economic Cooperation and Development (OECD) for several analytical reasons (Liu, 2014). First, rapid and significant innovations over the last few decades have given rise to technological convergence that has broken down traditional boundaries between information technology and content and media spaces (Liu, p. 551). Second, and in response to these dynamic changes, firms have dramatically restructured their business models, and/or looked for new opportunities to coordinate with other market participants in different, but related, lines of business (Liu, p. 551). Finally, technological and market innovation and growth has encouraged society to embrace ICTs in many aspects of modern life. Such widespread adoption sparked regulatory responses that contributed to the pervasiveness and strategic nature of information and communication technologies as national and international industries. As such, the ICT sector has become increasingly complex. It has come to include a variety of actors that are so intertwined that exploring them in isolation makes it difficult to study the technologies, market, or its regulation in meaningful and cohesive ways.

ICTs are often spoken of in a particular context, such as ICTs in education, health care, or services. They are highly embedded in economic, social, and political systems; these systems include institutions and phenomenon which influence and are influenced by the ICT technologies they utilize and can either constrain or enhance the growth and impact of ICTs (Federal Communication Commission, 2016). Arguably, ICTs have come to be the “foundation for economic growth, job creation, global competitiveness and a better way of life...enabling entire new industries and unlocking vast new possibilities for existing ones... changing how we educate children, deliver healthcare, manage energy, ensure public safety, engage governments, and access, organize, and disseminate knowledge” in the modern world (OECD, 2003). Thus many governments have promoted the sector as a “core and strategic industry based on the belief that [it will] significantly contribute to...national development”...and serve as the “backbone” of national economies (OECD, 2003).

But as the ICT sector grows and spreads throughout the international community, the same dynamic and pervasive characteristics that makes it desirable and strategic, present questions and challenges for national and international security, intellectual property protection, innovation, privacy, and equitable development within and outside of cyberspace. Essentially, countries

face a paradox of wanting to reap the benefits of having foreign investment in ICTs, and a modern and innovative ICT sector, but also wanting to protect themselves, their markets and inventors, their territory, and their citizens. The increased dependency on ICTs creates security threats ranging from everyday activities such as banking, but also, more serious and potentially life threatening activities such as the disruption of air traffic control systems; and because ICTs are such integral parts of life, they make modern states especially vulnerable. The pervasive, transformative, and novel characteristics of the ICT sector, thus, make it both a key actor in the global community and one of the most complex regulatory challenges of our time.

2.2 ICT Market Organization

The technological, market, and regulatory changes that have occurred in the ICT sector have resulted in a complex system of governance. Undeniably, ICT regulation is a crucial component of ICT market development and growth. And the regulatory activities employed in each country depend greatly on a variety of cultural, legal, and economic considerations of the local regulatory framework, the maturity of the market, and the international commitments that need to be harmonized with national legal and regulatory systems. As telecommunications markets have been liberalized, innovation has encouraged changes to traditional market structures, and the world has shifted to convergent digital media and oligopolistic firms, it has become increasingly clear that ICT governance is an international phenomenon with multiple and competing stakeholders, operating with differing levels of capacity and legitimacy that utilize technical, economic, and legal mechanisms to facilitate a socio-technical model of networked governance unlike any other, past or present.

This novel regulatory regime, international ICT governance, includes the actors, institutions, norms and rules that are of importance for the process and the outcome of ICT regulation throughout the global community (Scott et. al. 2011). This research, in particular, focuses on the inter-organizational network of government agencies, corporations, nongovernmental organizations (NGOs), and intergovernmental organizations (IGOs) that comprise standard setting organizations (SSOs) and their overlapping and intersectional relationship with governmental members of international investment treaty bodies. Bilateral and multilateral investment treaties represent a traditional form of regulation that govern the flow and protection of information and communication technologies as assets and services to be exchanged between the citizens and corporations of its members. While their signatories are restricted to government actors, they are often shaped and influenced by experts and groups of organizational actors with knowledge and interests in their development, so for this study, the treaty body membership also includes those select non-governmental contributors. In contrast, ICT standards are a modern form of technological regulation developed within a novel transnational private regulatory regime: standard setting organizations, that use code and programming developed by collectives of mostly private sector actors to regulate the interoperability of the technologies within and across jurisdictions, depending on its membership and adoption. As such, the membership within the space varies greatly.

The diversity of the network's membership presents unique and significant opportunities for research. First, the number of stakeholders with vested interests provides one of the most comprehensive examples of networked governance to date. Second, the variety amongst the stakeholder organizations presents unique opportunities to first, explore the dynamics of cross-sector, transnational private regulation (TPR), and second to examine its relationship with traditional international law. Exploring this relationship could highlight key actors within the network for more in-depth case studies. Finally, exploring such collaborative regulatory mechanisms (standards and treaties) not only allows for exploration of the structure and interactions within the network, it also provides an opportunity to conduct more thorough qualitative research on specific interactions between the technical and legal mechanisms involved to identify stakeholder interests and elicit tensions (existing or emergent) between potentially competing priorities between the different types of organizational and institutional actors.

3. International ICT Regulation: A Network Governance Model

3.1 Network Governance: The Theory

Dating back as early as 1996, the term governance began to supplant the more traditional term "government" as "self-organizing, inter organizational networks that complement markets and hierarchies as governing structures for authoritatively allocating resources and exercising control and co-ordination" emerged (Rhodes, 1996). Because of an observed participatory gap and a misalignment of capacity, private organizations and individuals perceived themselves as being excluded from policy decision-making. Since then scholars have proposed network-like governance structures as a blueprint for handling public governance questions in the age of globalization (Bernstorff, 2003).

Additionally, governmental and intergovernmental organizations lack resources, while private actors and consortia have stepped up to efficiently, govern the rapidly developing ICT sector. The consensus is that "equating politics with political institutions

masks a simple truth: individuals and groups, not bureaucracies or formal institutions drive innovation and learning. Change is a bottom up process, not a top down steering committee,” (Reinicke, 2000) and “due to varying contexts, global governance cannot refer to the forms of decision making and mechanisms of enforcement established at the state level,” (Benz and Papdopoulos 2006, p.4).

Global governance networks arguably create bridges between public and private sector actors and have the potential to “pull diverse groups and resources together and address issues that no one sector can resolve by itself,” (Reinicke, 2000). “The success of these networks of public administrators, scientists, experts and NGOs in resisting the pressure to become part of the formal policymaking structures and the contribution of non-governmental actors to reducing the much-discussed ‘implementation deficit’ are now acknowledged, even if reluctantly,” (Jordan, 1999) This signals the transition from government to governance and “illustrates a widespread dissatisfaction with the limited reach of ‘set solutions’ to thorny political issues imposed through top-down government intervention,” (Hajer and Wagenaar, 2003).

This transition has not only been accompanied by new vocabulary which “opens up the cognitive commitments impacted in the thinking about governing and political decision making,” it helps practitioners and theorists “unlearn embedded intellectual reflexes and break out of tacit patterns of thinking,” stimulating them to “rethink governing, politics, and administration against the backdrop of changing societal processes,” (Hajer, 2001). Arguably, “networks constitute the new morphology of our societies, and the diffusion of network logic substantially modifies the operation and outcomes in processes for production, experience, power and culture,” (Castells 1996, p.468).

However, “issues of legitimate and effective forms of governance beyond the nation state are among the main concerns of the governance approach” (Take 2012, p.500). In this new inter-organizational space, governance is especially challenging because politics and policymaking are happening in configurations that do not conform to the old formats (Dryzek 1999, Eriksen and Fossum 2000, Hajer 2000). “Because governance implies the establishment of problem related rules by cross-border governance arrangements that possess neither formal authority nor central enforcement power and feature different actors, forms of organization, and steering patterns, transnational and private governance arrangements, in particular, depend on the voluntary cooperation of rule-addressees and must generate legitimacy from within in order to enforce their rules” (Take 2012, p.500).

For ICT governance in particular, no matter how we view the technological infrastructure, the regulatory actors involved are not homogenous. Historically, different components of ICTs were managed and regulated by different bodies. As it has become more pervasive and global in nature, the number of stakeholders has increased. And “international fora based on treaties are not usually regarded as being capable of providing regulatory decisions with the necessary legitimation both in terms of public participation and in terms of efficiency and flexibility” (Bernstorff, 2003). Consequently, recent efforts to govern ICTs have opted for less- traditional regulatory forms that claim to be participatory. “The regulation of new communication technologies has been the preferred field for the establishment of network-like governance structures” and “the computer scientist’s notion of technical networks has arguably influenced policymakers in the creation of corresponding regulatory structures,” (Bernstorff, 2003).

As such, there are now two distinct arenas of ICT governance, internationally: new transnational private regulators utilizing modern, network governance approaches in the standard setting space and traditional international regulation through bilateral and multilateral treaties comprised of governmental members, but with highly active and influential industry and expert contributors. The resulting technical and legal rules regulating ICTs are created in different fora, with different members and constituents, so while there is an emergent multi-stakeholder network governance model with similar goals, the vested actors have different means and interests. There are no formal relationships between international treaty laws that regulate ICTs and the technological standards developed by standard setting organizations (SSOs), but research and practice indicate that both actively shape the innovation and dissemination of the technologies and services, the markets that profit from them, and even the usage – or lack thereof of information and communication technologies, and that their membership overlaps extensively enough that there are some interdependencies between them.

4. International Treaty Law

4.1 Investment and Trade Treaties

Like all law, international investment law is a social instrument developed to give effect to human wishes and needs (Mackenzie, 1939). Its condition and purpose are determined by the nature of the community in which it functions and the kind of control and

authority exercised in that community (Mackenzie, p. 117). Compliance with it is based on the belief that it serves communal interests more than rejecting it (Mackenzie, p. 124). In the context of bilateral and multilateral investment treaties that regulate the investment flows of ICTs, the terms of the agreements (more often than not) reflect the asymmetrical distribution of economic and political power between nation states, the private sector, and civil society in the global community, as well as between developed and developing states. When regulating investment, both host and investor states want to have a certain level of control over the infrastructure and goods – be it product or service, digital or “real”. Host states want to ensure that foreign investors follow domestic health, safety, and welfare regulations and ideally, would like to obtain some technological and knowledge transfers – especially in the ICT sector (Huffman, 2008). While investor states want to protect the investments of their nationals and ensure the most lucrative and effective intellectual property protection of the ICT products and services, and maintaining high levels of security for technologies that can be weaponized or codes that can be copied and misused. But because investor states and corporations headquartered in their territory often negotiate from positions of power, having more capital, technological resources, and thus leverage, the trade agreements and investment treaties often instantiate corporate power and host states take what they can get.

In the context of investment in ICTs, investment treaties give foreign investors enhanced intellectual property and investor rights, including but not limited to the right to bring private arbitration claims against local governments for policies and decisions that arguably thwart their investment-based expectations of profit (Bekkers, et. al., 2015). These agreements have played an important role in facilitating foreign investment, increasing trade, and enhancing development by credibly committing host governments to protecting the interest of investors and providing a legitimate and effective forum for redress (Jandhyala et. al., 2011). But they have also limited the desired social and economic development goals of host countries allowing foreign direct investment (FDI) in information and communication technologies by depriving them of key economic and technological spillovers.

5. Transnational Private Regulation

5.1 Technological Standards

In addition to the treaties that regulate information and communication technologies throughout the international community, there are also standards developed by standard setting organizations (SSOs) (Baron et. al., 2015). Standards are sets of rules and technological designs adopted by groups of actors to ensure technological interoperability between products and services and to guarantee that they meet specific industry requirements. This novel form of regulation has been coined technological regulation, or techno-reg for short, and it represents a transformative and increasingly powerful form of rule-making operating outside of traditional government institutions. But because of the unique makeup of SSOs (membership is largely comprised of corporate actors and technological innovators, with government and NGO involvement in some), and their increasingly large volume (more than 900 in 2015), SSOs are met with increasing skepticism of their ability to adequately regulate a sector with such significant economic, development, and security implications (Company, 2016). Legal scholars have continually questioned their legitimacy and effectiveness as private forms of networked regulation.

Nevertheless, SSOs have become widely accepted and currently dominate the technical governance of ICTs, as national and international governmental organizations have failed to keep pace with the technological growth, development, and adoption of the ICT industry (Werbach, 2009). Innovation scholars and policymakers acknowledge their forced or acquired governance power, and have even begun theorizing how their unique rules and establishment of norms will continue to shape the industry, global governance, and international development at large (Company, 2016, Liu, 2014, Scott et. al. 2011, Werbach, 2009). With international membership, these SSOs face complex legal landscapes because they produce their own rules and policies that are widely accepted by implementers, are often enforced by national governments, and that interact or overlap, in some capacity, with other traditional forms of international regulation – including treaties.

To date, there has been isolated research regarding these two forms of ICT governance in media & technology, economic, and legal scholarship, but there has not been a comprehensive study of the structure of their relationships or of the implications of these relations. To fill this gap, this research begins by utilizing social network analysis to examine the structure of the relationships between members of the international ICT governance network comprised of standard setting organizations and their respective organizational members, and treaty bodies, and their respective members.

• **Research Question 1:** What are the patterns of interactions in the international ICT governance network?

- **Hypothesis 1: Centrality**

- The ICT governance network(s) will exhibit a structural tendency towards centralization.

- **Hypothesis 2: Clustering & Brokerage**

- The ICT governance network(s) will exhibit a tendency towards higher order cyclic closure.
 - The ICT governance network(s) will exhibit a tendency towards degree cycle interaction effects.
 - The ICT governance network will exhibit a tendency towards degree assortativity.

- **Hypothesis 3: Homophily – Organizational Type**

- Within the ICT governance network(s) organizations of the same type are more likely to be affiliated than by chance alone.

- **Hypothesis 4: Propinquity – Global Region**

- In the ICT governance network(s), organizations headquartered in the same region will be more likely to be affiliated than by chance alone.

The results of the network analysis will move beyond descriptive measures to hypothesis testing about network structures. Utilizing the multi-theoretical model at different levels of the network, it examines the configurations of the international ICT governance network and the patterns of interaction between organizations operating in the standard setting space and those operating under traditional treaty bodies. Where there is significant overlap, I will conduct three case studies to examine how these varied actors operate in shared spaces and influence significant, but often conflicting legal and regulatory policies. These case studies will utilize qualitative doctrinal analysis to provide insight into the emerging international ICT governance regime, highlighting stakeholder priorities, detailing potential conflicts, and showing geographic, pecuniary, and authoritative variance.

- **Research Question 2:** Where both technological standards and investment treaties operate, how do they interact and co-exist?

The following research question explores the outcomes of these conflicts more thoroughly.

6. Implications of the International ICT Governance Network

- **Research Question 3:** What are the implications of the interaction between technological standards and investment treaty obligations?

6.1 Stakeholder Priorities & Points of Contention

A cursory exploration of SSO policies and membership and investment treaty language reveals that the most likely variances between their priorities concern intellectual property, economic development, and security. For example, standards align with business interests and profit maximization which favors the private sector and most developed nations, while international investment treaties have more lax terms for technology transfer and licensing because their (arguably) more interested in development and security, favoring less developed nations.

6.2 Intellectual Property

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 has resulted in the emergence of various levels and types of intellectual property protection stemming national laws, private sector regulation, and international trade agreements.

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. 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," which results in different levels of protection of IP rights. In addition, technical standards often require or allude to intellectual property protection for internationally adopted standards, but the scope of that coverage varies greatly in different locales, is subject to various international treaties, and continues to be the topic of continued debate.

The competing concerns of various stakeholders, and inconsistencies between national laws, international treaty and standard agreements demonstrate the importance of ICTs in terms of economics, and highlights the challenges and complexities of regulating such a complex, transnational, and dynamic sector.

6.3 Economic Development

"There is no doubt about the interrelationship that takes place between the adoption of information and communication technologies and economic development, (Hernandez, et. al., 2007). As such, it is no surprise that national regulation and international development agendas all push for more investment, innovation, and protection of ICTs in international agreements and governance systems. 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 (Sen, 1989). Scholars, civil society, and policy makers assert that there is an undeniably a link between the adoption of ICTs and development, because the technologies improve how well resources are allocated, expands the possibilities of fulfilling capacities, and create a foundation for other substantial benefits (Hernandez et. al., vi). While ICTs are not considered to be a development panacea by any means, 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.

As such, domestic policy makers must find an effective mix of strategies to attract innovative and impactful ICTs, while complying with the rules of international treaties and the requirements of international standards to further their development goals. But utilizing ICT for development is challenging because governments, consumers, and ICT producers/providers have competing interests. 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. 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. These concerns continue to be discussed by ICT4D (Information and communication technology for development) scholars and policymakers, but are often excluded from discussions of international ICT governance and regulation because of the variance that exists in local contexts.

Research has shown that outside control and top-down approaches to ICT investment, transfer, and uptake does not work and endangers stability. But arguably, this is exactly what happens when technological standards are adopted. Because standards are set by SSOs with more private sector influence and with US and Western Europe companies dominating the processes, standards are set, implemented, and protected by dominant global economic powers. Less technologically sophisticated may find it difficult to comply with internationally set standards which could further limit their development. This circular issue highlights why it is important not only to understand international ICT governance, but also to explore its implications and the strategies used to mitigate them – if necessary.

6.4 Security

Information and communication technologies create new and prevalent threats to peace and security. And because ICTs are such integral parts of life, they make modern states especially vulnerable. In his 2003 book, *Globalization and National Security*, Jonathan Kirshner explores the consequences of globalization for national security. He notes the importance of economic exchange, the flow of information, and marketization (in both the ICT sector and the larger economy), to the changes in state capacity and autonomy, renegotiation of power between state and nonstate actors, and change in the nature of armed conflict as key challenges to national security that stem from the pervasiveness of the ICT sector. He highlights the importance of computer networks and the internet for both civilian and military activities and both cyber and kinetic attacks.

This prevalence and dependence has changed the traditional notion of national security. National security is a collective term

for the defense and foreign relations of a country and the protection of that country's interest. Most notably, it has made state governments dependent on private industry and commercial infrastructure (Sharp, 1999). 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 itself (Sharp, 1999). The United States, in Executive Order 13010 declared that incapacity or destruction of telecommunications would have a debilitating impact on the defense or economic security of the country (Executive Order 13010). Additionally, the US developed the National Security Telecommunications Advisory Committee. 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.

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 (Morrison, 2015). 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 (Lam, 2014). 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 (Lam, at 309). Additionally, permitting Huawei to acquire 3Com would provide China's government a medium to gain access to sensitive information technology (Lam, at 310).

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, investment treaties 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 defense efforts (UNCTAD, 2009). It is thus a continued challenge for the host state's government to find the appropriate balance 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.

Furthermore, as highlighted in a paper from US national security advisors examining policy, legal, and strategy implications, the development, commercialization, and adoption of ICTs depends critically on international standards setting organizations (Kadte & Wells, 2014). While these bodies have multiple stakeholders that include state regulators, they are largely focused on the development of technological standards for interoperability. So while their rules and policies dramatically shape the ICT market, infrastructure, privacy, and national security, critics of transnational private regulation argue that (1) the stakeholders are staunchly focused on economics - intellectual property protection, profit maximization, and technological innovation, and (2) the private regulators lack the legitimacy to prevent, respond to, or enforce security concerns.

References

- [1] Fransman, M. (2010). *The New Ict Ecosystem: Implications For Policy And Regulation*, Cambridge University Press: Cambridge. *The african journal of information and communication issue 11 2010/2011. p 77-79.*
- [2] 2016 Broadband Progress Report. (2016). <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2016-broadband-progress-report>
- [3] Rhodes, R. A. W. (1996). *The New Governance: Governing without Government*. 1996 <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9248.1996.tb01747.x>
- [4] Robert Pepper John Garrity. (2015). *ICTs, Income Inequality, and Ensuring Inclusive Growth*. *The Global Information Technology Report 2015. p 31-38.*
- [5] Jochen Von Bernstorff. (2003). *Democratic Global Internet Regulation? Governance Networks*, *International Law and the*

Shadow of Hegemony. *European Law Journal*. 9 (4) 511-526.

[6] Wolfgang, H., Reinicke, Francis, M., Deng. (2000). CRITICAL CHOICES The United Nations, networks, and the future of global governance. UN Vision Project on Global Public Policy Networks www.globalpublicpolicy.net

[7] Benz, A., Papadopoulos, Y. (2006). Actors, institutions and democratic governance: Comparing across levels. *In: A. Benz, & Y. Papadopoulos (Eds.), Governance and democracy. Comparing national, European and international experiences* (p. 273-295). London: Routledge.

[8] Maarten A., Hajer, Hendrik Wagenaar. (2003). *Deliberative Policy Analysis: Understanding Governance in the Network Society*, Cambridge University Press, 2003. p. 5- 38

[9] Castells, M. (1996). *The Rise of the Network Society: The Information Age: Economy, Society, and Culture*, I. Oxford: Blackwell Publishers. p 468.

[10] Dryzek, J. S. (2002). Transnational Democracy. <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9760.00064>

[12] Huffman, 2008 Supporting a diverse workforce: What type of support is most meaningful for lesbian and gay employees? Ann H. Huffman , Kristen M. Watrous Rodriguez, Eden B. King (2008) 47(2). Special Issue: Part One: Breaking Barriers for Purposes of Inclusiveness. Summer 2008. 237-253

[13] Adam Werbach. (2009). *Strategy for Sustainability: A Business Manifesto Hardcover* – (July).