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Introduction: The ITU as Actor, Arena, and Antenna of Techno-Diplomacy

Information and communication technologies have been networked for centuries if we include, for example, roads, channels and rivers, postal services, telegraphs, telephones, and, of course, the Internet. Exchanging information between two or more nodes in a network requires the definition of several factors: the cost of information exchange, technologies that can be used (and others that cannot be used) to transmit messages, and rules for the production, circulation, and reception of information. These various processes can be defined with two intertwined terms: *standardization* (in which technical standards, rules and tariffs are negotiated among several entities) and regimes of *regulation* (implementation and control by a legally and/or politically recognized institution). Standardization and regulation are at the heart of techno-diplomacy because they involve a multitude of actors (technical, economic, and political) and arenas (platforms of negotiation) on national, international, and transnational levels. As the term *techno-diplomacy* suggests, these processes are characterized by strategic actions, tactical manoeuvres among all actors involved and, generally, require a high degree of both technical knowledge and diplomatic skills by the negotiating parties.[1]

This book aims to study the role of the International Telecommunication Union (ITU) in the field of standardization and regulation of information and communication technologies from its origins in the mid-19th century to the present day. Indeed, the ITU has been, and still is, one of the key places and players at the global level – or, as defined in the next paragraph, one of the key actors, arenas and antennas – where strategic actions at political, economic, technical, and even cultural levels are taken to establish, reinforce, or change the order of telecommunications management. This book is about long-term strategies of regulation and standardization at global levels and techno-diplomatic manoeuvres taken inside an international organization to manage communications, going from convincing the majority of the nations to establish the official seat of the

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1 On the concept of techno-diplomacy see Fickers, "Cold War techno-diplomacy"; Fickers and Griset, *Communicating Europe*, 109–158.

Telegraph Union bureau in Switzerland in the 1860s, to contrasting the multi-stakeholder model of Internet governance (supported by US and ICANN).

Actor, Arena, and Antenna

Since 1865, international communications have been regulated by the first international organization ever established, the so-called Telegraph Union, which was later renamed the International Telecommunication Union. Yet, despite its historical relevance, there are few scientific studies on ITU's evolution. Several commemorative works have been published by the ITU itself, whose historical objectivity often takes a back seat to the self-celebratory reconstruction of events.[2] The most important scientific studies on the Telegraph Union are, instead, law and political science publications that focus above all, but not exclusively, on the internal functioning of the Union itself.[3] In recent years, also because of the 150th anniversary of the Telegraph Union's foundation, there has been a revival of studies on ITU history, and scholarly attention has shifted from institutional history to other subjects: in particular, the role of the ITU as international regulator of telecommunications and as a virtual place where national interests converged and competed.[4]

The lack of scientific research on the ITU is surprising because this institution has played a key role in different realms such as regulations of tariffs, technological standardization and homogeneity, establishment of shared norms, promotion and support of projects and studies, for example, in developing countries. The ITU was a crucial place – and so not only an actor but also an *arena* – for the negotiation of a regulatory regime in the field of telecommunications.[5] We argue that with the ITU a new *culture of regulation* emerged, which combined the importance of political networks, interpersonal communication inside and, especially, outside official meetings, and a community of practice driv-

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2 A comprehensive list of these publications can be found online: https://www.itu.int/en/history/Pages/FurtherReading.aspx and most of them are freely accessible online.

3 Codding, *The International Telecommunication Union*; Navarro, *ITU: síntesis de organización, funcionamiento y objetivos de la Union Internacional de Telecomunicaciones (U.I.T)*; Durand-Barthez, *Union Internationale des Télécommunications*; Lyall, *International Communications*.

4 See for example, Fari, *Una penisola in comunicazione*; Laborie, *L'Europe mise en réseaux*; Giuntini, *Le meraviglie del mondo*; Balbi et al., *Network Neutrality*; Fari et al., *The Formative Years of the Telegraph Union*. This book takes the same path and aims to adopt a long-term and intermedia perspective on this issue.

5 On the ITU as international organization see Fari et al., *The Formative Years of the Telegraph Union*.

en by the belief in the power of techno-scientific expertise in the realm of tele-communications.

As mentioned, processes of standardizing and regulating communication technologies are highly complex, involving a variety of actors from individual experts to institutions and state bodies. Their interactions – especially in times when new standards or regulations are negotiated or old standards need to be reshaped because they are not up-to-date anymore – are often characterized by strategic agendas and tactical manoeuvres.[6] These negotiations illuminate the tensions between normative ideals (of technical or scientific rationality) and techno-political and industrial/economic realities.[7] We aim to analyse these interactions, from a transnational and global perspective, as performances of techno-diplomacy in the field of telecommunications.

As a techno-diplomatic actor and arena, the ITU developed into a hub of the international network where nation states and transnational institutions such as EBU, UNESCO, ICANN me(e)t and negotiate(d), trying to deal with the many tensions involved in such strategic manoeuvres. Among the most common conflicts, we can mention the "classic" political tension between public and private management of telecommunications; the lobbying of often-powerful private corporations over public regulators; technical tensions and conflicts among experts and engineers in order to impose the "best," most efficient and more reliable technology; and cultural tensions, such as the language to be used internationally. Gathering during ITU conferences or in specific study groups, technical expertise was constantly confronted by all these tensions, from protectionist industrial policies to political interests, from governmental strategies to telecom companies' pressures, from engineering mentalities to public needs.[8]

As these communication technologies touched the very heart of political power and social relationships[9], while representing a major economic sector, it is not surprising to see issues of standardization, regulation or tariffs at the top of the agendas. Clearly, specific political or ideological circumstances affected the role, self-image and public conception of the "experts" and diplomats involved in these debates and negotiations. After all, engineers and technicians acting in international arenas had to develop diplomatic skills in order to reach agreements, and state or government officials had to learn the language

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6 See Schmidt and Werle, *Coordinating Technology.*

7 Fickers, Hommels and Schueler, *Bargaining Norms – Arguing Standards.*

8 On technical expertise in European and transnational perspective see Kohlrausch and Trischler, *Building Europe on Expertise.*

9 Hugill, *Global Communications since 1844.*

of science and technology.[10] Engineers and technicians had to learn how to co-operate in an environment dominated by national politics and protectionist or liberal economies. In other words, the soft skills acquired in the "trading zone" of ITU meetings, conferences, or informal gatherings are key to the practice of techno-diplomacy.[11] To study such a community of practice from a historical perspective is a big challenge, as most of the sources available tend to suppress such information from official records.[12]

Besides being a place of negotiations (arena) and an active player in imposing visions of telecommunications management (actor), the ITU can also be considered an *antenna* able to pick up, and bring to international discussion, national or even local issues. In this sense, techno-diplomacy can also transform the issues debated in the public sphere and change the ways in which telecommunications and its related problems are perceived in the public realm. During more than 150 years of its existence, the ITU picked up and transformed issues such as technological transfer to developing countries, visions of future technologies, how to deal with communications during war periods, worldwide communication orders, creative commons in the field of communications, and neutrality just to mention a few. The ITU was able to act as an antenna because it became the reference point for national governments (and especially their post and telecommunication ministries), the place to consult and to look to for further improvements in telecommunication sectors, and the place able to process and transform all these inputs into a common practice. This is also a form of techno-diplomacy: the ability of technicians and diplomats to *receive*, process and *change* ideas and praxis of communication.

A Long-Term Perspective

In historicizing the ITU as an actor, an arena and an antenna for techno-diplomacy, this book offers a unique perspective on how these competences and practices changed over time by introducing a periodization of regulatory regimes in a long-term perspective.[13] A preliminary periodization has identified three main time spans:

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10 Schot and Lagendijk, "Technocratic Internationalism in the Interwar Years."
11 On the concept of "trading zone" see Collins, Evans and Gorman, "Trading Zones and Interactional Expertise."
12 Henrich-Franke, "Cookies for ITU."
13 On the concept of regulatory regimes see Coen and Héritier, *Refining Regulatory Regimes.*

1. From 1865 to 1947, the ITU was largely Euro-centric: key technical experts and diplomats were basically from European countries and the ITU was mainly focused on regulating European telecommunications;
2. From 1947, when the ITU became a specialized branch of the United Nations, to the early 2000s, the ITU was more driven by the United States of America and its dominance over the world communication order;
3. Starting from the mid-2000s, and thus approximately in the last decade, the ITU supported new models of communication (such as the multilateral one) for Internet governance under the influence of BRICS countries, especially China.

This periodization can and should be discussed, and, it will be contested throughout this book, that interpreting the role and influence of the ITU during different periods definitely depends on the perspective from which historians look at the past. Nevertheless, this long-term investigation is also a starting point to reconsider the ITU as a unique political, economic and cultural institution, in which the moments of change have co-existed with surprising continuities in the style of management over time. On the one hand, the ITU has indeed kept, over decades, institutional bodies such as the Bureau, the plenary conferences, or even a magazine (originally called *Journal Télégraphique*). On the other, it was able to adapt and manage the technological transition over time. In this book, for example, several technological transitions are addressed: from telegraphs to submarine cables, from telephone to wireless, from broadcasting to satellites, from computer networks to mobile phones and to the Internet. These transitions are characterized by a complex geography and temporality of parallel and overlapping life cycles of technical infrastructures and large technological systems, as new telecommunication technologies generally meant an expansion of communication facilities and rarely the extinction of established ones.[14] In other words, all new technologies and their regulation were debated in an intermedia environment or ecosystem, meaning that techno-diplomacy was deeply embedded into opposing visions of past, present and future media ecologies.[15]

At the same time, technological shifts were equally dependant on varying political ideologies or economic rationalities – two other forms of transitions that are considered in this book. Political transitions, such as the switch from European colonialism, imperialism and dominance, the rise of US political, mili-

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14 See Edgerton, *Shock of the Old*.
15 Chadwick, *The Hybrid Media System*.

tary and soft power, or the contemporary multilateral order with the emergence of China, have affected the ways in which ITU regulated global telecommunications. Similarly, opposing economic thoughts such as liberal/Keynesian or socialism/capitalism (and their neo-versions) have influenced discussions and decisions at the transnational level.

Indeed, the ITU is an organization driven by people who make decisions. If one aims to analyse the history of the ITU from a techno-diplomatic perspective, one has to look at the often long-term presence, turnover, and activities of relevant figures acting at various institutional levels – be it as formal ITU employees (such as General Secretaries), as national delegates at conferences, or as experts involved in the many study groups and technical committees. This biographical perspective can help to understand how ITU acted in its day-to-day business (sometimes repeating over time very similar tactics) and how and when relevant decisions were, and still are, taken. The interactional expertise that emerged from long-standing collaborations in specific fields of technical, juridical or administrative matters shaped a persistent community of practice that differed from simply scientific or diplomatic networks and that is still relevant today.[16]

About this Book

Based on the central concept of techno-diplomacy, this book is divided into two main sections, reflecting on one hand on ITU being a global actor in the field of telecommunications and, on the other, on being the arena in which techno-diplomatic negotiations are being performed.

Section I maps the global activities of the ITU, covering its European, American, African and Asian dimensions during important time periods. Marsha Siefert focuses on the Russian Empire and its role inside the Telegraph Union between the 1850s and 1870s. In a time when Russia wanted to regain the status of Great Power at a global level and wanted to launch Great Reforms, the Telegraph Union was a crucial place where the Empire played its cards, fulfilled its goals and even shaped the future development of European telecommunications after the St. Petersburg conference in 1875.

The age of empires is also crucial in the chapter written by Andrea Giuntini, focusing on ITU and submarine cables linking European countries and African colonies in the second half of the 19th century. Submarine cables are often considered the first ever technologies of globalization, but the ITU basically failed in

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16 Wenger, *Communities of Practice.*

trying to regulate them (submarine cables remained a private business during this period) and, consequently, in assigning a geopolitical role to Africa.

Richard R. John writes another case of failed techno-diplomacy at global level in his chapter focusing on the figure of Walter S. Rogers. Rogers was an American journalist, very active in the geopolitics of communications after WWI and he aimed to establish a new international organization in the 1920s regulating cable and radio networks worldwide, the so-called Universal Electrical Communication Union. This unsuccessful attempt can be seen as one of the first times in which the United States (who did not join the ITU at that time) started to challenge the authority of the ITU.

After WWII, and so after inclusion in the UN and the rise of American power, the ITU started to focus its activities on the so-called Global South promoting several projects to assist underdeveloped countries in appropriating new technologies and, as such, to promote innovation in telecommunications. Christiane Berth's chapter reconstructs these actions from the 1950s to 1990s, culminating in symbolic documents such as the report *The Missing Link* (1985) and the creation of a specific ITU branch in 1992 called ITU-D (where D stands for development).

The last two chapters of the first section focus on the Internet and how ITU was able (or not) to manage it. Gianluigi Negro focuses on the role ITU had, and still has, in promoting the so-called multilateral model in internet governance as opposed to the multi-stakeholder model mainly supported by the United States. The multilateral model is largely sponsored by China and so ITU has recently been considered close to the Chinese point of view. However, Negro argues that the power of China inside the ITU has increased, at least from the first half of the 1990s, as a consequence of a slow geopolitical shift at the global level. Dwayne Winseck closes this section by trying to answer a simple question: is the role of the ITU in global internet governance as relevant as it used to be in the past with other forms of communication? Focusing on the 2012 World Conference on International Telecommunications as a case study, Winseck considers all the criticisms addressed to the ITU (especially by the so called "group of 55") and other institutions competing with ITU for the global control of the Internet. In sum, the ITU seems to have lost its regulatory centrality, but plays again a role in the global debate over the control of the Internet.

Section II offers a variety of case studies dealing with the role of the ITU as an arena for techno-diplomacy negotiations in times of technological transitions. When new technologies such as the telegraph, wireless, the telephone, TV, satellite and the Internet arrived, the ITU has had to face phases of hybridity from an institutional perspective, adopting different tactics: bureaucratization, structural changes, public communication of the technological innovations,

and integration with old technologies are just a few of them. Simone Fari analyses the construction of the ITU arena from the late 1840s to the 1870s and rechristened it as a "capitalist compromise" between national states and big business to defend dominant positions. The Telegraph Union was funded in 1865 with a peculiar structure made of voluntary membership, periodic conferences with a solid group of delegates, and a day-to-day business office called Bureau. In addition, thanks to this structure and this original compromise, the ITU was able to work efficiently for a long time and to be a key place for techno-capitalism.

Maria Rikitianskaia describes the origins of wireless telegraphy at the beginning of the 20th century and the creation of the International Radiotelegraph Union, a semi-independent structure within the ITU. This is a "classic way" ITU reacts to new technologies, creating sub-branches with the goal of managing new forms of telecommunications which seem to be disruptive. However, the history of the ITU is also exemplary for two other reasons: how ITU copes with wartimes (so times when states opposed each other and often decide to interrupt communications) and how radio represented the beginning of the shift from a Eurocentric to American control.

Christian Henrich-Franke and Léonard Laborie deal with the rise and standardization of another innovation: the telephone. Specifically, they focus on the birth and development of the CCIF, 'Comité consultatif international (for) Fernschreiben', from 1923 to 1947. According to them, CCIF was intentionally separated from the ITU. It was the arena where the culture of standardization emerged, and it was even able to later impact the standard-setting culture of the ITU.

When the telephone and wireless telegraphy (or radio) emerged, it was clear how the International *Telegraph* Union should change the name and include new forms of telecommunications. Consequently, the new International *Telecommunication* Union, the official name that still exists today, was created in 1932 in Madrid, but the choice was not uncontroversial. Heidi Tworek in her chapter reports on the discussions and the linked issues that emerged in the Spanish conference, especially the voting rights and national sovereignty of imperialist countries and colonies inside the ITU. The ITU indeed is not a frozen organization, but political, economic, and technical phenomena always favour institutional changes.

Can new political powers be negotiated through exhibitions and fairs? Anne-Katrin Weber, Roxane Gray, Marie Sandoz, with the collaboration of Adrian Stecher provide a clear answer: after 1947, Switzerland lost its leading role inside the ITU and the country re-negotiated it through industrial exhibitions and public fairs. This chapter analyses the role of the ITU fairs organized in several Swiss cities in the 1960s and 1970s: exhibitions organized by the ITU to pro-

mote telecommunication technologies to a broader audience and exploited by Switzerland to create opportunities for Swiss industry to connect with global markets.

At the same time, the world of telecommunications was revolutionized by a new, disruptive and understudied technology: the satellite. Nina Wormbs and Lisa Ruth Rand analyse the use and regulation of the Earth orbit and the role of the ITU in this process. The ITU was a crucial actor in mediating among several international conflicts over a "natural" resource: the allocation and use of this newly profitable space called geostationary orbit generated discourses of spatial techno-diplomacy, involving super-powers. The ITU was the main arena where those controversies were discussed and eventually solved.

In media history, the "next big thing" after the satellite was probably the rise of the Internet and the ITU was involved in it. Not only at a global level and in connection with China, as we have seen before, but also in the early stages on the net. Valérie Schafer's chapter deals with the regulation of the Internet from the 1960s to the early 2000s and the role of the ITU. The ITU was a key global player in the standardization of telephone networks and through the so-called CCITT, Consultative Committee for International Telephone and Telegraphy, was naturally involved in the debate over the standardization of computer networks in the 1970s and 1980s. From the 1990s onwards, mainly because of the success of the TCP/IP standard and the rise of American digital companies, the ITU lost its centrality in the global governance of the Internet. The same conclusion sketched by Dwayne Winseck in his chapter.

Overall, this book would like to contribute to different research fields. The ITU is, first and foremost, an international organization and, applying the concept of techno-diplomacy in telecommunications, this book aims to contribute to an interdisciplinary approach to the history of international organizations in a global perspective.[17] When we say "interdisciplinary," we mean that new regulatory regimes are also the result of a complex negotiation of techno-scientific, economic, cultural and political factors.[18] This is also a book on the history of telecommunications, a field that has grown significantly in the last decades.[19]

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17 Davenport and Prusak, *Working knowledge*; Kaiser and Schot, *Writing the Rules for Europe*; Kott, "International Organizations – A Field of Research for a Global History"; Herren, *Internationale Organisationen seit 1865*; Kott, "Une autre approche de la globalization."

18 Fickers, "Neither good, nor bad, nor neutral."

19 See for example Hugill, *Global Communications since 1844*; Headrick, *When Information Came of Age*; Mattelart, *Histoire de la société de l'information*; Mosco, *The Digital Sublime*; Winseck and Pike, *Communication and Empire*. On the historiography of telecommunications, see Balbi, "Studying the Social History of Telecommunications."

The history of telecommunication is often made up of "national" stories, in which crucial decisions are mainly taken at a national level. This book adopts a different point of view, underlining the relevance of the transnational approach. The ITU is indeed an exemplar case of an international institution regulating flows of information across national borders and, consequently, creating new spaces, visions, and practices of transnational communication.[20]

Digging into archived materials such as conventions and study group minutes, code books, ITU magazines, correspondence registers, maps, images, and several other sources, all chapters of the book are based on new research and provide a broad range of new archival evidence for each case study. This consistent amount of new research would not have been possible without the support of three institutions. We are very thankful for the support of the ITU Library & Archives (and especially to Kristine Clara and Heather Heywood), who have been committed to this project since the beginning, who have helped the authors in collecting sources, and who have done a fantastic job in digitizing important collections of their holdings and making them available online.[21] The Swiss National Science Foundation and the University of Luxembourg funded two workshops held in Geneva in 2015 (hosted by the ITU Library & Archives) and Luxembourg in 2017. These were key arenas (to abuse this term...) and moments where the authors of this book met and discussed their respective chapters, ideas, and visions of the ITU. This project would not have been possible without these two events.

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20 Badenoch and Fickers. "Introduction: Europe Materializing?"; Fickers and Griset, *Communicating Europe.*

21 See https://www.itu.int/en/history/Pages/Home.

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