The Formative Years of the Telegraph Union

This book is a collective effort of the research group involved in the Swiss National Fund Project entitled "The Swiss Influence in the ITU's decision-making processes 1865-1914". Sources and ideas were discussed collectively, while the chapters were written individually. Giuseppe Richeri wrote the Introduction, Gabriele Balbi Chapter 3, Simone Fari Chapters 1,2,4,5 and the Conclusion.

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In 2009 a closely-knit research group consisting of Simone Fari, Gabriele Balbi and Giuseppe Richeri, all working at the Institute of Media and Journalism of the Università della Svizzera italiana in Lugano, set up a long-term project entitled "The Swiss Influence on the ITU's decision-making process 1865-1914". As the title indicates, the aim was to analyze the role played by Switzerland in the creation, early years and decision-making processes of the Telegraph Union (known today as the International Telecommunications Union), and bring together a host of political, economic, technical and cultural points of view. As our work progressed, new and unexpected factors started to emerge, bringing us to formulate a re-interpretation of the formative years of the TU, and the result is quite simply this text.

Over the years in which we have been involved in such a specific and complex piece of research, we have collected many debts, both of an intellectual and material level. We would like to thank in particular Verdiana Grossi, Andrea Giuntini, Jakob Tanner, David Gugerli and Richard John, as well as all the participants on the panel at the ICOHTEC Annual Conference in Barcelona 2012 (especially Simone Müller, John Laprise and Colin Hempstead). We would also like to mention the panellists of our session both at the HISTELCON Conference in Pavia 2012 (in particular Anna Guagnini and Jonathan Coopersmith), and at "Tensions of Europe", Paris 2013.

INTRODUCTION

In the second half of the nineteenth century, the powerful development of an international telegraph network laid the infrastructural base for what can be termed a first moment of globalization. The dynamics of this network's growth were very much determined by Great Britain, the major politico-economic powerhouse of the period, and the balance of interests it struck up with up-and-coming economies, especially the US and Germany. The control room of the network was in the hands of the first ever international organization, the International Telegraph Union (TU), which was responsible for the supranational regulation of communications. Its official task was to execute the dictates of the single national governments and carry out purely administrative duties. But is that what actually happened?

Though research has been carried out on the subject, there has been up to now no reconstruction of the TU's origins. Historical analyses most often concentrate on the period post 1865, the year in which the TU was instituted, and leave aside the chain effect the initial choices of the previous twenty years had on the organization's structure and decision-making processes. Very often, too, such studies concentrate on secondary sources, and tend to pass over primary ones like the documents of the TU and its predecessors.

One of the characteristics of the present study is to reconstruct meticulously the events that led to the telegraphic multilateralism of the period 1849 to 1875. The dates are significant – in 1849 the first telegraph treaty was signed, so giving birth to telegraphic multilateralism, while 1875 is the date of the last TU diplomatic conference, which was responsible for the Convention of St Petersburg, the constituent, inalterable act of the TU until post WWI.

The approach used in the present study is institutionalist, and privileges sources generated by the Union itself (conference minutes, correspondence of the permanent body, articles from official revues and other administrative documents), without neglecting intertextual analysis (parliamentary bills/acts from various countries, articles in international revues, technical and grey literature). The numerous interpretations of the shadow areas in the history of the TU we propose have therefore a solid

base in sources, which is the reason why this study is backed by such an abundance of detailed footnotes.

The methodology used in reconstructing historical events is multidisciplinary, representative of the members of our group, who come from various scientific approaches and possess different skills and competences. This text, the result of over three years' research, is therefore simultaneously a history of media studies, international relations and business.

The aim of this work is first of all to answer some questions which have not until now received satisfying answers. For example, who was really at the head of the TU? Was it the governments or the elite state officials? What role did private companies play? How far did the TU determine the standardization of norms and technology along international lines? How were international tariffs established? What was the logic underlying them? What vision of an international service emerges from the telegraph conferences?

The first chapter explains how and why the TU can be considered the final result of the development of telegraph multilateralism in Europe, which started with the first bilateral treaties in 1849 and then evolved into the two unions, one Francophile, the other German-speaking.

The second chapter starts with a description of the bodies created by the TU and how the way in which they operated influenced the modes of action of the Union itself. It investigates both the players and the processes of elaborating and approving norms which characterized the telegraph conferences until 1875. The third chapter goes on to consolidate our argument by illustrating the tasks and real power of the Bureau, the TU's permanent body, which was originally planned to carry out a purely administrative role, though it ended by overcoming the limits which had originally been set.

Chapters Four and Five are both dedicated to the three main functions of the TU - the standardization of general norms, technology and tariff uniformity. Chapter Four in particular discusses how the process of standardizing general norms, very much influenced by the liberal ideas of the period, took up more time, space and energy than technological standardization, which, all things considered, was always of secondary interest. Chapter Five, instead, untangles the confusion of interpretations, schools of thought and business strategies which came to bear on the application of uniform tariffs. It also describes how the various ideological currents underlying different criteria of charges corresponded to different concepts of the telegraph service.

Finally, after having dissected the TU's structures and detailed its basic elements in the various chapters, we come to the conclusion, which furnishes an overall vision of our study and highlights how many of the long-term features of the TU were the consequences of a series of initial choices which in a thirty-year time span ended by stifling any attempts to be right on the cutting edge.

CHAPTER ONE

THE LONG GESTATION

Paris, 1865. After a series of meetings lasting over two months, the representatives of 20 European countries[1] came to sign the Telegraph Convention, the treatise which instituted the International Telegraph Union (TU)[2]. It was the first supranational government organization to come into existence and at the same time the first organization to oversee and regulate an international public service. It marked the arrival point of a long diplomatic journey which had begun back in 1848 and worked its way forward by means of a myriad of bilateral and multilateral treatises. The Paris Convention was, in fact, a compendium of all the norms of the international telegraph service which had been agreed upon by the various European countries over twenty or so years. Consequently, the question "Why was the TU established?" exacts the obvious answer "To sort out the confusion of norms and regulations that had piled up and overlapped over the years". But this answer begs another question: "Why did the telegraph service set off an intense diplomatic process which step by step led to the establishment of the first international organization in history?"

The answers are many, and they all lead back to an in-depth analysis of the events taking place between 1849 and 1865, years which can be considered to all effects and purposes the period of gestation of the TU. There emerged in those years some constitutive choices[3] destined to

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[1] In alphabetical order: 1) Austria, 2) Baden, 3) Bavaria, 4) Belgium, 5) Denmark, 6) France, 7) Greece, 8) Hamburg, 9) Hanover, 10) Holland, 11) Italy (formerly Piedmont/Sardinia), 12) Portugal, 13) Prussia, 14) Russia, 15) Saxony, 16) Spain, 17) Sweden-Norway, 18) Switzerland, 19) Turkey, 20) Württemberg. The most important absentees were the UK and the US, countries in which the telegraph service was in the hands of private companies. The requisite for joining the TU was in fact a publicly managed telegraph service.

[2] *Documents diplomatiques de la Conférence télégraphique internationale de Paris* (Paris : Imprimerie Impériale, 1865).

[3] In this case the term *constitutive choices* takes on a precise methodological value. Following on from Paul Starr's analysis, it is assumed that especially in the field of the media, initial political and economic choices influence the long-term trajectory

characterize the TU at least up to well after WWI: 1) an intrinsically international character; 2) a strong political interest in the international management of the service; 3) a marked Eurocentrism (meaningful the absence of the US), with a continental hegemony foretelling a kind of premature European integration; 4) a strict adhesion to the economic and political values of liberalism, detectable not only in the conventions and their rules but also in the minutes of the assemblies discussing them.

1.1 The diplomatic imbroglio

With due differences, the European telegraph service became available to the public between the late 1840s and the mid-1850s[4]. It may seem surprising, however, that the first international treaties go back to 1848-49, and in many cases actually anticipate the setting up of a national service[5].

The real pioneer was Prussia. Many of the regions in its territory were scattered, and could only be reached by crossing other nations. This was why once its national telegraph had been planned, Prussia moved quickly to sign treaties with its various German neighbours in order to bring about domestic communications. Although the states in question were still *de facto* independent, the process of unification was well under way[6], and the telegraph agreements can be read as part of a nation-building programme destined to construct a German telegraph network as an effective start to telegraphic multilateralism[7]. For this reason all TU history scholars identify the Treaty of Vienna signed between Prussia and Austria on 3 October 1849 as the first international agreement in

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of a technological system. Paul Starr, *The Creation of the Media. Political Origins of Modern Communications* (New York: Basic Books, 2004).

[4] Anton A. Huurdeman, *The Worldwide History of Telecommunications* (London: J. Wiley, 2003), 48-85.

[5] On the speed of the development of international telegraphy see Keith Clark, *International Communications. The American Attitudes* (New York : Columbia University Press, 1931), 90-91.

[6] For an overview of the unification of the German infrastructures see Dieter Ziegler, "Particularisme et développement des réseaux de transport dans les États allemands (1815-1866)", in *Les réseaux européens transnationaux XIXe-XXe siècles quels enjeux?*, eds. Michèle Merger, Albert Carreras and Andrea Giuntini (Nantes : Ouest Éditions, 1995), 23-32.

[7] Victor Meyer, *L'Union International des Télécommunications et son bureau* (Berne : typescript in ITU's library, 1946), 2.

telegraphy[8] and in fact it opened the way for the hard copy versions of telegrams to cross borders, so allowing Prussian and Austro-Hungarian citizens to have direct communication[9].

From then until the mid-1850s Austria, Prussia, Saxony and Bavaria all signed bilateral agreements in order to increase access to communication. These overlapping bilateral treaties ignoring network relations were addressed with the creation of the Austro-German Telegraph Union (AGTU) on 25 July 1850[10]. Initially formed by this nucleus of nations, it was first expanded to include the other German states linked telegraphically and politically to Prussia and then all states which came more generically into Austria's area of political influence (the Grand Duchy of Tuscany, the duchies of Modena/Reggio Emilia and Parma/Piacenza as well as the Papal States)[11].

Between 1850 and 1854, when the international telegraph network was growing by leaps and bounds, all the main European states felt the impelling need to join, as witness all the countless bilateral treatises recorded between neighbouring states, including: Belgium-Prussia 1850, Belgium-France 1851[12], France-Switzerland[13], France-Baden[14], and Austria-Switzerland 1852[15], Piedmont-Switzerland, Austria-Piedmont[16], Piedmont-France[17], Baden-Switzerland, France-Bavaria[18] and Switzerland-Württemberg 1853, France-Spain[19] and Switzerland-Spain 1854[20]. Nevertheless, as emerged in

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[8] George Arthur Codding Jr., *The International Telecommunication Union. An experiment in international cooperation* (Leiden : E.J. Brill, 1952), 13.

[9] Géo Fr. Martens, *Recueil général des traitées* (Guttingue, 1856), Tome XIV, 591-595.

[10] Léopold Neumann, *Recueil des Traités et Conventions conclus par l'Autriche avec les puissances étrangères, depuis 1763 jusqu'à nos jours* (Leipzig : Brockhaus, 1859) vol. V, 196-243.

[11] The only exception Holland, which joined AGTU because of close commercial and economic ties with the Austro-Germanic area. *L'Union Télégraphique Internationale (1865-1915)* (Berne : Bureau International de l'Union Télégraphique, 1915), 3.

[12] A.J.H. De Clercq, *Recueil des Traités de la France* (Paris, 1880), Tome VI, 100-101.

[13] Ibid., 256-262.

[14] De Clercq, *Recueil des Traités*, Vol VI, 213-217.

[15] Neumann, *Recueil des Traités et Conventions*, Vol V, 592-594.

[16] Ibid., Vol VI, 107-109.

[17] Ibid., 322-324.

[18] De Clercq, *Recueil des Traités*, Vol VI, 364-366.

[19] Ibid., 473-481.

[20] Codding Jr., *The International Telecommunication Union*, 14-16.

the case of the German-speaking network, bilateral agreements were not enough by themselves to keep apace with the rapid expansion, which called for multilateral regulations and norms simultaneously recognised by a number of states[21]. And in fact already in Paris in 1852, France, Belgium and Prussia as representative of AGTU had met to sign a telegraph convention.

When the delegates from Belgium, France and Prussia, again representing AGTU, met in Berlin in order to renew the Paris Convention, the implicit understanding was to create a common area for telegraph exchange. The basis of the project was to be the approval of lower telegraph tariffs, applicable over all the territory belonging to the signees[22]. Prussia, however, did not approve of the change and gave two reasons: 1) the decision was not a part of its AGTU mandate, which had been simply to renew the 1852 Convention; 2) its network was not sufficiently developed to take on board such a tariff reduction[23]. While its first reason can be justified at least from a strictly diplomatic point of view, the second arouses some perplexity. The state-backed Prussian telegraph network was actually one of the most advanced both technologically and organizationally, as is shown by the precocity of the telegraph agreements it signed[24]. It was highly unlikely, therefore, that a reduction of international tariffs could stimulate use to the point of risking overloading the lines. Whatever, it was Prussia's refusal which pushed five non-AGTU members (Belgium, France, Piedmont, Spain and Switzerland)

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[21] Scholars of international relations have always debated the precise definition of multilateralism. In this study it is used in its widest and most usual sense, as an agreement between three or more states. For an interesting discussion see John Gerard Ruggie (ed.), *Multilateralism Matters: Theory and Praxis of an Institutional Form* (New York: Columbia University Press, 1993).

[22] *Légation de France en Suisse à le président de la Confédération Suisse docteur Furrer*, 18 octobre 1855, in Archive Fédérale Berne, (afterwards AF), Fond E 52, Archive-Nr. 440, Band nr. 2.

[23] «Les Délégués du Gouvernement de sa Majesté l'Empereur ont essayé à Berlin de faire adopter une série de mesures destinées à réformer plus profondément le système et à le mettre plus en rapport avec les principes de bonne administration et d'équitable répartition des frais. Mais les propositions des Commissaires français auxquels le Représentant de la Belgique s'était immédiatement rallié en principe, rencontrèrent une résistance insurmontable dans le mandat restreint que le Commissaire prussien avait reçu de l'Union austro-allemande, et dans l'organisation encore trop incomplète du service télégraphique en Allemagne», Feuille Fédérale (afterwards FF), vol. 1, no. 4, 9 janvier 1856, p. 111.

[24] Huurdeman, *The Worldwide History*, 74-82.

to meet in Paris in December 1855 and create the Western Europe Telegraph Union (WETU) [25].

Historians have often presented AGTU and WETU as two contrasting organizations, the former promoted by German-speaking states and the latter by Francophiles[26]. Even those recognizing ties between countries in the two unions before 1855 have always spoken of East-West transversal relations, as though identifying two politically separate zones[27]. In reality, the chronology of the bilateral and multilateral agreements and the almost identical AGTU and WETU conventions (tariffs excepting) point to there being no real ideological contrasts between the two unions and that what WETU did was to simply bring together the group of the countries which had been left out in the cold by AGTU[28].

The two unions were indeed far closer in spirit than is held by much literature, as is also witnessed by the constant iteration of identical norms in the treaties they turned out. The 1855 Paris Convention, for example, was a clone of the June Berlin Treaty of the same year between Belgium, France and Prussia, which was in turn faithfully based on AGTU's most recent version. Yet in spite of the substantial homogeneity in regulations,

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[25] «Une *sorte d'union télégraphiques* entre la Belgique, l'Espagne, la France, la Sardaigne et la Suisse, union télégraphique à laquelle, nous le savons déjà, se ralliera bientôt la Toscane par un acte d'adhésion, et dans laquelle seront admis successivement tous les États de l'Europe qui voudront en faire partie». Paris International Conference sitting, 5 décembre 1855, in AF, Fond E 52, Archive-Nr. 440, Band nr. 2.

[26] This contrasts emerges clearly in Patrice Carré, "Archéologie d'une Europe des télécommunications", *France Telecom* 70 (octobre 1989): 73-84. Less underscored, the same concept also appears in George A. Codding, Anthony Rutkowski, *The International Telecommunication Union in a Changing World* (Deedham: Artech House, 1982); Alfredo Descalzi, "Creación y desarrollo de la Unión Internacional de Telecomunicaciones", in *Las comunicaciones entre Europa y America: 1500-1993*, *Actas del I Congreso Internacional de Comunicaciones, 30 noviembre-3 diciembre de 1993* (Madrid: Ministerio de Obras Públicas, Transportes y Medio Ambiente, Secretería General de Comunicaciones, 1993), 388-389; Meyer, *L'Union International des Télécommunication,* 2-3.

[27] Codding, *The International Telecommunication Union,* 13-20; Francis Lyall, *International Communications. The International Telecommunication Union and the Universal Postal Union* (Farnham: Ashgate, 2011), 18-22.

[28] The Convention of 25 July 1850 which established AGTU provided in art. 41 for the adhesion of Germanic countries alone. «Chacun des autres gouvernements allemands non parties à l'Union peut, s'il installe des lignes télégraphiques, adhérer à l'Union télégraphique austro-allemande», art. 41 of *Traité d'État conclu le 25 juillet 1850 entre l'Autriche, la Prusse, la Bavière et la Saxe, portant création de l'Union télégraphique austro allemande*.

it has to be said that the myriad of bilateral and multilateral agreements formed what has appropriately been called a "diplomatic imbroglio"[29]. This because the only way to regulate telegraph communications in Europe was by simultaneously applying bilateral treaties with neighbours and mixed multilateral agreements (e.g. those between France, Belgium and Prussia) as well as the convention the particular union the state was member of. The situation could become critical, especially for small countries like Belgium and Switzerland surrounded by so many neighbours. It was no coincidence, indeed, that right from the early fifties both of them had made energetic diplomatic attempts to bring the two unions closer and thus realise a common telegraphic space on a formal level. Both unions functioned like rings, linking on one side French interests and on the other Prussian/Austro-German ones. But while in the early fifties[30] Belgium was the prime mover, Switzerland took over the role as diplomatic leader later in the decade[31].

As emerged from the declarations of the participants in Paris 1855, WETU wanted to open up to all European countries and therefore AGTU members, too[32]. Nowadays various authors attribute France with the undisputed leadership of telegraphic multilateralism in the fifties and sixties, citing as proof, for example, the Paris venue both for the first mixed conference and the WETU and TU founding conferences[33].

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[29] The expression "imbroglio diplomatique" is borrowed from Patrice Durand Barthez, *Union Internationale des Télécommunications* (Thèse pour le doctorat en droit, Université de Paris I – Panthéon – Sorbonne Sciences Économiques – Sciences Humaines – Sciences Juridiques, 1979), 33.

[30] Bart Van der Herten, Pascal Verhoest, "La contribution belge à la création des réseaux internationaux de communication du XIX siècle," in *Les réseaux européens transnationaux XIXe-XXe siècle: quels enjeux?*, eds. Michelle Merger, Albert Carreras and Andrea Giuntini (Nantes : Ouest Éditions, 1995), 33-47.

[31] Switzerland's role in the fusion of the two unions is covered in detail in Gabriele Balbi, Spartaco Calvo, Simone Fari, Giuseppe Richeri, "Bringing together the two large electric currents that divided Europe. Switzerland's role in promoting the creation of a common European telegraph space (1849-1865)", *ICON* 15 (2009), 61-80.

[32] «La Convention télégraphique de Paris, qui comprend l'échange de 5 États, étant un grand pas vers l'uniformité dans les relations télégraphiques de toute l'Europe», in FF, vol. 1, num. 4, 9 janvier 1856, p. 114. The conference minutes are in AF, Fond E 52, Archive-Nr. 440, Band nr. 2.

[33] Edgar Saveney, "La télégraphie internationale", *Revue des deux mondes* (15 septembre 1872), 360-384 and Leonard Laborie, *La France, l'Europe et l'ordre international des communications (1865-1959)* (Thèse pour obtenir le grade de Docteur, Paris : Université Paris IV – Sorbonne, 2006).

However, recent studies fully supported by primary sources take up a different position, and point to Switzerland as playing an ace diplomatic role right from the beginning[34]. It was, for example, Swiss neutrality rather than formal French leadership which determined AGTU countries being invited to the WETU Conference in Turin, 1857[35]. Austria did not take part because of the rising tension with Piedmont (the Second Italian War of Independence would break out within two years)[36], thereby forcing a change in strategy. The decision was taken to site the following conference at Berne, only after holding some months earlier the Brussels mixed meeting involving Belgium, France and Prussia (June 1858). It can be deduced, therefore, that once Swiss diplomacy had realized it was impossible to get Austria to take part directly in a wider union, it decided to go ahead with a process of standardising the norms of the existing two. The Berne Convention was therefore almost a carbon copy of Brussels and in order to ratify conditions leading to a substantial standardization of telegraph regulations, Switzerland organized yet another conference at Friedrichshafen with AGTU members[37].

So, by 1858 a European telegraph space had been effectively organized, though without any formal consecration[38]. There were however two further obstacles to be overcome before the Unions could come together. The first was that Piedmont and Austria were enemies in the Italian Wars of Independence, while the second was the pressure applied by the WETU countries to adopt a more economical tariff system[39]. Tariffs were, indeed,

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[34] Gabriele Balbi, *Network Neutrality. Switzerland's role in the genesis of the Telegraph Union, 1855-1875* (Berne: Peter Lang, 2014).

[35] *Légation de S.M. Le Roi de Sardaigne en Suisse à Monsieur Fornerod président de la Confédération*, Berne 30 novembre 1856, in AF, Fond E 52, Archive. Nr. 441

[36] The Swiss Post Department had a clear idea of why the negotiations failed: «Nous avons bien de croire que les raisons qui ont empêché l'Autriche d'accéder à l'invitation de la Sardaigne étaient d'une nature essentiellement politique et resalaient de la situation tendue qui existait entre les deux pays», *Département des Postes et des Travaux publics de la Confédération Suisse au Conseil fédéral Suisse*, Berne 17 août 1857, in AF, Fond E 52, Archive. Nr. 443, Band nr. 2.

[37] Balbi, Calvo, Fari and Richeri, *Bringing together*, 70-75.

[38] Explicit here the words of the *Journal Télégraphique*: «La Convention de Paris [1865] n'a donc fait que consacrer dans la forme et avec un grand progrès de rédaction ce qui avait été fondé en pratique pour les traités de 1858». They refer to the Brussels and Berne Conventions, which both took place in 1858, in the footnote to the article "Le traité de l'Union générale des postes et la Convention internationale des télégraphes", in *Journal Télégraphique*, 35(1874), 575-580.

[39] Van der Herten, Verhoest, *La contribution belge*, 45 ; Saveney, *La télégraphie internationale*, 365

to remain a delicate subject even after the Paris Convention, while the problem of Austria's isolation was resolved diplomatically by Switzerland, which intervened directly with France to get Austria invited to the 1865 Paris event[40]. Austria's participation in turn opened the doors of the Union to Turkey and Russia, so allowing the network to expand eastwards, which was to prove essential for future links with the possessions in Asia. So the 1865 Paris Conference brought the journey to an end by establishing the formal constitution of a telegraph union of European states.

1.2 New container, old contents

On a structural level the TU was profoundly different from its two predecessors because it was born as a single organization mandated to deal with the international telegraph service. On a theoretical level at least, the scale of the new union was to be worldwide, because it was born with the aim of including all the countries desiring to join without any form of discrimination. Substantially then, thanks mainly to the post 1865 presence of Russia and Turkey, the TU embraced a far wider network than AGTU and WETU. But, though the container was indeed much bigger and with an immense potential for expansion, its organizational structures and regulations were tied to what had been put into practice over the previous twenty years.

From an organizational point of view, the TU was mainly based on periodic bodies, i.e. the plenary meetings of representatives from all member countries. During these assemblies delegates were called upon to discuss and establish the basic regulations for the international circulation of telegrams and elaborate documents known as "conventions". The latter had the legal value of international treaties and therefore could only be modified in a new conference. This was why the conventions established general norms and codified details of rules and charges in documents entitled "Regulations" and "Tariff Tables", drawn up exclusively by expert hands and therefore open to modification without a new assembly having to be called. Telegraph agreements had in fact all been international treaties since Vienna 1849, while the conference system had been used by

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[40] *Le Département des Postes Naeff au Conseil Fédérale*, 16 juillet 1864, AF, Fond E52, Archive nr. 502 ; *Brunner à Curchod*, 11 août 1864, AF, Fond E52, Archive nr. 502 ; *Curchod à Brunner, lettre confidentiel*, 26 septembre 1864, AF, Fond E52, Archive nr. 502 ; *Conseil Fédéral à Kern*, 18 novembre 1864, AF, Fond E52, Archive nr. 502; *Kern à CF*, 28 novembre 1864, AF, Fond E52, Archive nr. 502; AF, Fond E52, Archive nr. 502, *Brunner à Curchod*, 9 décembre 1864. For a summary of the entire episode see: Gabriele Balbi, *Network Neutrality*, 88-97.

both AGTU and WETU right from their beginnings and the 1857 Stuttgart Conference had provided for the mechanism of rules and tariff tables as attachments to the convention[41].

The norms contained in the Paris Convention were, however, the most apparent affirmation of how the past was taken on board. Only three of the 61 articles, (1, 57 and 61), were completely new. Article 1 stipulated the obligation to adopt special wire in the construction of direct lines in order to guarantee international connections[42] while Article 57 established the obligation to communicate and receive all information about changes in the international network (office hours, line construction/interruption, submarine cable laying/breakages)[43]. The third, article 61, dealt with regulating relations between TU members and the private companies running either land or submarine lines[44]. So, with the exclusion of these three, which, as we shall see, were more challenges for the future than real innovations, international telegraphy was regulated on the basis of well consolidated, familiar norms.

First of all, the Paris Convention took over the five basic principles of international telegraph communication which had been sanctioned by the first Vienna Convention in 1849[45]: 1) freedom of correspondence for all

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[41] Lagemans, *Recueil des Traités et Conventions conclus pour le Royaume des Pays Bas*, vol. IV, 345-351.

[42] «Les Hautes Parties Contractantes s'engagent à affecter au service télégraphique international des fils spéciaux, en nombre suffisant pour assurer une rapide transmission des dépêches. […] Les villes entre lesquelles l'échange des correspondances est continu ou très actif seront successivement et autant que possible, reliés par des fils directs, de diamètre supérieur et dont le service demeura dégagé du travail des bureaux intermédiaires», art. 1, de la *Convention Télégraphique Internationale de Paris 1865*.

[43] «Les Hautes Parties contractantes, afin d'assurer, par un échange de communications régulières, la bonne administration de leur service commun, s'engagent à se transmettre réciproquement tous les documents relatifs à leur administration intérieure et à se communiquer tout perfectionnement qu'elles viendraient à y introduire», art. 57, *Convention Télégraphique Internationale de Paris 1865*.

[44] «Les Hautes Parties contractantes s'engagent à imposer, autant que possible, les règles de la présent convention aux compagnies concessionnaires de lignes télégraphiques terrestres ou sous-marines, et à négocier avec les Compagnies existantes une réduction réciproque de tarifs, s'il y a lieu», art. 61, *Convention Télégraphique Internationale de Paris 1865*.

[45] Codding, *The International Telecommunication Union*, 13.

citizens[46]; 2) the right to confidential correspondence[47]; 3) the right of all countries to apply the norms only to international correspondence[48]; 4) the duty to suppress telegrams against public order and morality[49]; 5) the right of every state to suspend international communications when and where deemed necessary[50]. As general principles lay, they answered the dual need of liberal regimes to respect the individual freedom of their citizens and at the same time safeguard national sovereignty.

The same convention had also divided telegrams into three categories: 1) government business; 2) official service; 3) private. Priority went to government telegrams, followed by those on official service and private

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[46] «Les Hautes Parties contractantes reconnaissent à toutes personnes le droit de correspondre au moyen des télégraphes internationaux», art. 4, *Convention Télégraphique Internationale de Paris 1865.*

[47] «Elles s'engagent à prendre toutes les dispositions nécessaires pour assurer le secret des correspondances et leur bonne expédition», art. 5, *Convention Télégraphique Internationale de Paris 1865*. The subject of the privacy of correspondence is fundamental to all point-to-point communications and marks one of the substantial differences between telecommunications and one-to-many mass media, which are based on the public nature of their communications. See Gabriele Balbi, Juray Kittler, *Dialoguing With Socrates or Disseminating Like Jesus? Rereading Communication History Through 'One-to-One' and 'One-to-Many' Lenses* (presentation, Annual ICA (International Communication Association) Conference, Phoenix, 2012).

[48] «Également animés du désir d'assurer aux correspondances télégraphiques échangées entre leurs États respectifs les avantages d'un tarif simple et réduit, d'améliorer les conditions actuelles de la télégraphie internationale, et d'établir une entente permanente entre leurs États, tout en conservant leur liberté d'action pour les mesures qui n'intéressent point l'ensemble du service», preamble to *Convention Télégraphique Internationale de Paris 1865*.

[49] «Les Hautes Parties contractantes se réservent la faculté d'arrêter la transmission de toute dépêche privée qui paraîtrait dangereuse pour la sécurité de l'État, ou qui serait contraire aux lois du pays, à l'ordre public ou aux bonnes mœurs, à charge d'en avertir immédiatement l'expéditeur», art. 19 *Convention Télégraphique Internationale de Paris 1865.*

[50] «Chaque Gouvernement se réserve aussi la faculté de suspendre le service de la télégraphie internationale pour un temps indéterminé, s'il le juge nécessaire, soit d'une manière générale, soit seulement sur certaines lignes et pour certaines natures de correspondances, à charge d'en aviser immédiatement chacun des autres Gouvernements contractants», art. 20, *Convention Télégraphique Internationale de Paris 1865*.

ones bringing up the rear[51]. The same regulation had already been adopted in all agreements post Vienna (1849)[52].

Lastly, regarding technology, the Paris Conference called for standardization only in terms of adopting the Morse telegraph and code[53], which had already been accepted as the international telegraph by AGTU in 1852 and WETU three years later[54].

1.3 Problems solved, problems to solve

The establishment of WETU in 1855 had put the highlight on two closely linked needs: lower international telegram charges and expand telegraph space. Ten years later the Paris Convention answered both needs with two innovative solutions, the introduction of a uniform telegraph tariff and the inclusion of the Russian and Turkish territories.

Up to 1865 telegraph traffic had been regulated by a zone-based tariff, where charges corresponded to the distance between sending and receiving offices. Clearly copied from the postal service and often used for national tariffs, the system posed some evident complications at international level, particularly over widespread territories like Austria, Russia and Turkey, not to mention the Asian colonies. Though the 1855 Paris Convention managed to attenuate the problems, it did not offer solutions, in that it provided for the reduction of zone tariffs and their expansion, but did not eliminate the injustices inherent in the system. The problem was solved, instead, in Paris 1865, with the introduction of uniform tariffs. Each member state proposed two charges, one for the transit of telegrams over its territory and one for telegrams it sent and/or received.[55] The charge for an international telegram was to be the sum of the dues requested in the sending and destination countries and in all territories the telegram transited. The zone-based tariffs were abolished, except for Russia and Turkey, whose territories were so vast as to warrant having both a European and Asian zone [56].

The continual expansion of the international network had been one of the objectives of the pre-1865 telegraph agreements. Nevertheless, the

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[51] Art. 7 & art. 11, *Convention Télégraphique Internationale de Paris 1865*.

[52] Codding, *The International Telecommunication Union,* 13.

[53] «L'appareil *Morse* reste provisoirement adopté pour le service des fils internationaux», art. 3. *Convention Télégraphique Internationale de Paris 1865*.

[54] Codding, *The International Telecommunication Union*, 13-20.

[55] Art. 30 & art. 31, *Convention Télégraphique Internationale de Paris 1865*.

[56] The rules for applying tariffs were inserted in articles 32-37, *Convention Télégraphique Internationale de Paris 1865*.

intention to create a common telegraph space was made explicit for the
first time during Paris 1855. The key moment actually came with the
diplomatic incident of the invitation to Austria. Initially, the conference
organizers had decided to invite only the states that had taken part in the
1858 Brussels and Berne Conferences, while in the official invitation it
was explained that the conference would serve to uniform definitively the
norms established separately the same year[57]. Since Austria had been
absent from Berne and Brussels, a diplomatic incident was in the offing.
France justified its actions by the fact that the Prussian delegates had been
present as representatives of AGTU and therefore indirectly of Austria,
too, so that the invitation to Prussia could be interpreted as an indirect
invitation to all AGTU members. The Austrians were obviously not at all
pleased at being excluded and resorted to a trusted channel in order to
express their displeasure[58]. Brunner, head of Austrian Telegraphs, had
previously been in charge of Swiss Telegraphs and happened to be on
excellent terms with his successor, Louis Curchod. With the official
backing of his government[59], Curchod sent a letter to the organizers in
which he explained very convincingly the reasons why because of the
preceding Braganza and Friedrichshafen treaties, France would have to
send a direct invitation to Austria and the other AGTU states not present
either at Berne or Brussels[60]. In his long letter Curchod went well beyond
the simple defence of Austria to ask the rhetorical question:

> If we want to arrive as soon as possible at drawing up the principles which
> will be inserted in the general convention for the whole European network

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[57] *Ministère de l'intérieur français à le directeur central des télégraphes suisses
Curchod*, 12 juillet 1864, AF, Fond E52, Archive nr. 502.
[58] *Brunner à Curchod*, 11 août 1864, AF, Fond E52, Archive nr. 502.
[59] «nous sommes décidé à imposer da nouveau a l'Administration française (ce qui
j'avoies déjà eu l'occasion de faire verbalement) la fait de l'existence de la
convention de Friedrichshafen, risp. de Bregenz, réunissant à côté des groupes de
Berne et de Bruxelles un 3ème groupe d'États européens, qui devrait selon nous être
également convoqués à Paris si l'on voulait avoir quelque assurance d'atteindre le
but que l'Admin. française sait proposer […]. Nous avons dit enfin que nous
saurons prêts, si la paraissait nécessaire, à provoquer une demande officielle du
Conseil féd. au Gouvernement français tendant à obtenir que les États signataires
de la convention de Friedrichshafen (Bregenz) soient aussi convoqués aux
conférences de Paris», *Curchod à Brunner, lettre confidentiel*, 26 septembre 1864,
AF, Fond E52, Archive nr. 502.
[60] *Curchod à de Vougny*, 26 septembre 1864, AF, Fond E52, Archive nr. 502.

and its issues, would it not be better to invite to the conferences all the states in Eastern Europe?[61]

The Swiss, who also put on pressure via their Paris ambassador[62], obtained the considerable result of convincing the head of French Telegraphs to extend the invitation not only to Austria but also to Russia and Turkey[63]. Now the TU would be regulating a network stretching all over Europe, as far as its confines with Africa and Asia. A new state of affairs for the telegraph service and Switzerland's first major success in bringing about international cooperation.

While two important goals were reached, three other innovations at Paris 1865 all posed challenges for the future. Articles 1, 57 and 61 concerned functional aspects of the TU which were as essential as they were contradictory: 1) technical standardization; 2) the need for a permanent body; 3) relations with private companies. All three cases only gave rise to exploratory manoeuvres because the norms in themselves were intrinsically weak. Article 1 provided for the TU members to commit themselves "as far as possible" to laying wider diameter wires along international lines in order to guarantee a rapid and sure service[64]. In the convention project, together with article 3, the only other one to promote technical standardization, it had been mandatory, though the opposition of many delegates had it changed into an option[65]. Article 57 regulated the exchange of reciprocal communications about all modifications to the network[66]. The intermediary was to have been the country which had

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[61] «si l'on veut arriver le plus tôt possible à étendre les principes qui seront posés dans la convention générale à tout le réseau télégraphique européen et à ses aboutissants, ne conviendrait-il pas aussi de convoquer aux conférences les États de l'Extrême Orient de l'Europe?», ibid.

[62] *Conseil Fédéral à Kern*, 18 novembre 1864, AF, Fond E52, Archive nr. 502.

[63] *De Vougny à Curchod*, 18 octobre 1864, AF, Fond E52, Archive nr. 502.

[64] «Les Hautes Parties Contractantes s'engagent à affecter au service télégraphique international des fils spéciaux, en nombre suffisant pour assurer une rapide transmission des dépêches. [...] Les villes entre lesquelles l'échange des correspondances est continu ou très actif seront successivement et autant que possible, reliés par des fils directs, de diamètre supérieur et dont le service demeura dégagée du travail des bureaux intermédiaires», art. 1, *Convention Télégraphique Internationale de Paris 1865.*

[65] *Verbaux de la 1ère Séance de la Commission des délégués spéciaux 4 mars 1865*, in *Documents de la Conférence Télégraphique Internationale de Paris*, 115.

[66] «Les Hautes Parties contractantes, afin d'assurer, par un exchange de communications régulières, la bonne administration de leur service commun, s'engagent à se transmettre réciproquement tous les documents relatifs à leur

organized the most recent conference, but the difficulties arising in the period 1865-1868 again brought to the fore the possibility of flanking the conferences with a permanent body[67]. Lastly, article 61 proposed extending the convention norms to private companies working on members' territories, guaranteeing as compensation a possible tariff reduction[68]. This meant private companies being accepted into the TU only in a secondary capacity and having to abide by the various governmental decisions. As can be seen, all three norms were in the early stages, underscoring the need to regulate the area but at the same time revealing the TU's functional limits. The member states were so afraid of diminishing their national sovereignty, they were prudent to the point of annulling the effect of the three norms. Though setting off dialogues and discussions surfacing through to the 1920s, technical standardization, the role of a permanent body and relations with private companies were destined to remain highly and heatedly debated issues.

1.4 International to the core

Why did the first international organization devote itself to regulating a telecommunications service? And furthermore, why was the TU established more quickly than the Universal Postal Union (UPU), set up in 1874, and the International Union of Railways (UIC), founded in 1922? The international postal service had indeed been much modernized and expanded in Europe during the thirties and forties[69], and the optic telegraph had spread all over Western Europe, thanks to the French.[70] As

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administration intérieure et à se communiquer tout perfectionnement qu'elles viendraient à y introduire», art. 57, *Convention Télégraphique Internationale de Paris 1865*.

[67] The French had already proposed in Paris 1865 the creation of a permanent commission. Nevertheless, as in the case of the single tarif, the other delegates found it excessive. *Verbaux de la 9ème Séance de la Commission des délégués spéciaux, 22 mars 1865* in *Documents de la Conférence Télégraphique Internationale de Paris*, 216-217.

[68] «Les Hautes Parties contractantes s'engagent à imposer, autant que possible, les règles de la présent convention aux compagnies concessionnaires de lignes télégraphiques terrestres ou sous-marines, et à négocier avec les Compagnies existantes une réduction réciproque de tarifs, s'il y a lieu», art. 61, *Convention Télégraphique Internationale de Paris 1865*.

[69] Clark, *International Communications*, 15-20.

[70] The optic telegraph network was almost exclusively for government and military use, and the French conquerors imposed it rather than sought cooperation. See Geoffrey Wilson, *The Old Telegraphs* (London: Phillimore, 1976).

these facts show, the electric telegraph was not the first form of communication to expand at an international level during the 19th century. And in fact its first convention (Vienna 1849) had copied both structure and content from the postal agreements of the previous decade[71].

A first reason for its precocity was the low cost of the infrastructures. If compared to railways, roads and optics[72], the telegraph network infrastructure was certainly in no way cost intensive as it consisted of overhead lines made of wooden poles, iron or brass wires and ceramic or glass insulators[73]. A further plus point was that all three elements required fairly simple workmanship and were based on materials like wood and clay, often sourced locally[74]. The postal services then had the downside of added costs, because to cover great distances they had to resort to additional expensive technologies like the railway or steam boat[75].

A second reason came from the telegraph's intrinsically international nature, for like all one-to-one telecommunications technologies, it lent itself easily to communication on an international scale[76]. In the first place,

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[71] Laborie, *La France, l'Europe*, 150.

[72] The low cost of the electric telegraph in comparison to the optic version was underlined right from the beginnings. For example British newspapers published data showing the notable reduction of fixed costs in the case of state optic telegraphs being replaced by electric ones. See also "Railway travelling, and that noble animal the horse, particularly at this hot season," *The Odd Fellow*, 29 August 1840.

[73] For details on materials and construction see the two internationally used manuals, Tal. P. Shaffner, *The Telegraph Manual. A complete history and description of the semaphoric, electric and magnetic telegraphs of Europe, Asia, Africa and America, ancient and modern* (New York: Pudney & Russel, 1859) ; Robert S. Culley, *A Handbook of Practical Telegraphy* (London: Longmans, Green and Co, 1885).

[74] Obviously this case refers to landlines, which were prevalent, because submarine cables spread from the sixties onward, and relied on very expensive material. For the cost differences between the two technologies see: Simone Fari, *Financing Telegraph Infrastructure (1850-1900)* (Milan: Departmental Working Paper, Department of Economics, Management and Quantitative Methods at Università degli Studi di Milano, 21, 2012).

[75] Alain Gras speaks of the Post as "a technical macro-system of second order" precisely because it needs other technical systems like road, rail or navigation in order to function. Alain Gras, *Le Macro systèmes techniques* (Paris: PUF, 1997), 91.

[76] Stephen D. Krasner, "Communications and National Power: Life on the Pareto Frontier," *World Politics* 43, no 4 (1991): 336-366.

its international nature was connected to its most evident feature: speed[77]. Telegraph transmissions were then far more rapid than any other kind of communication and the advantage increased with the distance covered, thus favouring expansion beyond national borders, which was especially important for small and medium-sized states. In contrast, international postal cooperation lost ground relatively, precisely because of its lack of a rapid means. It was no coincidence in fact that the Universal Postal Union was established only after the construction of important rail connections[78].

A good postal service could compete on equal terms with the telegraph over short distances, both for speedy delivery and prices. As long as the message was to be sent only a few hundred kilometres, the telegraph was not much faster than the post, though with higher costs and less reliability[79]. Where the telegraph was revolutionary was over distances of more than a thousand kilometres, which only happened with international connections beyond Europe. With the exclusion of Austria, Russia and Turkey, the geography and history of Europe had led to the formation of small states, and these consequently needed to activate international lines right from the beginning in order to exploit the potential on offer. Thus international telegraphy was developed at the same time as the domestic service, and not, as could be expected, later[80].

The international emphasis on the telegraph must be linked to another important feature of one-to-one telecommunications: coverage, i.e. the number of participants in the network. The telegraph had indeed generated coverage from the beginning both at home and abroad[81]. Some hold that the efficiency of communication networks increases automatically with the

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[77] «Speed is the most striking characteristic of telecommunications», Daniel H. Headrick, *The Invisible Weapon. Telecommunications and International Politics 1851-1945* (New York, Oxford University Press, 1991), 4.

[78] Van der Herten, Verhoest, *La contribution*, 37.

[79] With telegraphs the message had to be coded, sent and decoded, therefore increasing the possibility of errors in transmission. This meant reliability was a quite subjective criterion, so that all things equal, clients already using one service preferred to avoid experimenting a new one.

[80] «En Europe, les communications à longue distance demandaient un degré de coopération intergouvernemental sans précédent dans l'histoire, à cause du nombre de frontières à travers les quelles devaient être acheminés les messages», James Foreman-Peck, "L'État et le développement du réseau de télécommunications en Europe à ses débuts," *Histoire, économie et société* 3, no 8 (1989) : 384.

[81] «*Coverage* refers to the number of participants in a network. The telegraph is not an isolated device, but appeared from the very beginning as a network, that is to say a complex socio-technical system spread over a large geographic area». Headrick, *The Invisible Weapon*, 4.

number of participants, generating what is termed a "network effect" or "network externality"[82]. In Europe this phenomenon was able to generate only thanks to international cooperation, in that the small dimensions of the single states prevented them from reaching a sufficient scale to produce network effects by themselves[83].

Finally, the international nature of the telegraph is to be attributed to the kind of service offered, and here again a comparison with the Post is eloquent. The latter had been conceived of as a universal service, with as potential users all those able to read and write. The telegraph service was born instead at a domestic level (in Great Britain and the United States), as an exclusivity for businessmen, entrepreneurs and brokers needing rapid, frequent communications[84]. However, leaving aside Great Britain, in Europe the international service was born under the auspices of single governments. The order of priority which privileged government telegrams over all others shows that from 1849 onwards international telegraphy answered first of all a diplomatic need. So while the Post was conceived of as basically national in the forties and fifties, the telegraph was already at the service of diplomacy and the business world and had a greater propensity for international connections[85].

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[82] Albert-László Barabasi, *Linked: The New Science of Networks* (Cambridge Massachusetts: Perseus Publishing, 2002).

[83] Van der Herten, Verhoest, *La contribution*, 44.

[84] «The fact is, that Postal correspondence and Telegraphic correspondence are two very distinct things. They are NOT "in the same category", or in anything approaching the same category. A broker in London wants to supply his correspondents in the country with prices and information of various descriptions, on which the success of their daily operations is dependent. He resorts to the instantaneous communication afforded by the Telegraphic wire. On the other hand, a lady in London desires to afford to her country cousins and acquaintances the fullest information upon household, domestic, and family affairs of interest, the particulars of which require to be conveyed in full, but which are not of pressing or immediate importance. She resorts to the cheaper, but less expeditious, machinery of the Post. The Telegraph and the Post have thus their respective duties to perform: each, no doubt equally important to the public, and each, in their respective ways, of public interest. But the two modes of communication are not "in the same category". The two things are perfectly distinct and separate». *Government and the Telegraphs. Statement of the case of the Electric & International Telegraph Company against The Government Bill for acquiring the Telegraphs* (London: Effingham Wilson, 1868), 53.

[85] Van der Herten, Verhoest, *La contribution*, 37.

1.5 Politics and Eurocentrism

The twenty-year journey which led to the establishment of the TU was dominated by political interests and intense diplomatic activity[86]. All the treatises from the first conventions to the creation of the TU were the results of the activity carried out by delegations composed of diplomats and high-ranking technicians. While the former were state officials with powers of representation, the latter were mostly the heads/general inspectors of national telegraph administrations. Up to the mid-fifties, therefore, international regulation came exclusively from the directives of national governments and the technical expertise of top telegraph men[87]. In the same way, up to 1871, there was neither the direct or indirect participation of private capital, because the conventions only concerned states and automatically excluded any privately-run services. Then from 1855, on the rare occasions in which private companies were invited, they had neither right of vote or consultation. The most evident proof of the pre-1865 domination of politics is given by the basic dynamics guiding the various operations. The first agreements signed in 1848-1849 by Prussia and the German states fitted in perfectly with the journey towards German unification. More generally, the establishment and development of AGTU mirrored the change in equilibrium in the German-speaking area, where Austria, the traditional power figure, found itself having to come to terms with Prussia's ambition and dynamism. The foundation of WETO and France's constant desire to be in the limelight (Paris 1855 and Paris 1865) reflected its worry over the need to curb Prussia's political thrust. Furthermore, the role of Switzerland, which, as we have seen, was fundamental in the TU's expansion to the east, was not limited to telegraphy alone, but gave the first signs of the country operating as an international prime mover. From the mid-1850s onwards in fact Switzerland carried out an ever-increasing diplomatic role at the centre of the European chessboard, always playing as its trump card its much vaunted neutrality[88].

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[86] This is well explained in Verdiana Grossi, "Technologie et diplomatie suisse au siècle: le cas des télégraphes," *Relations Internationales* 39 (automne 1984): 287-307.

[87] Laborie gives a detailed description of the diplomats and technicians taking part in the post and telegraph conferences in the second half of the nineteenth century. Laborie, *La France, l'Europe*, 266-272.

[88] For an overview of the history of Swiss neutrality: Hans Ulrico José, "Origines, interprétations et usages de la 'neutralité helvétique'," *Matériaux pour l'histoire de notre temps* 93 (2009), 5-12 ; Marko Milivojevic, Pierre Maurer (eds.), *Swiss*