



BUILDING BRIDGES ON GLOBAL GOVERNANCE ISSUES:

CYBERSPACE SHAPING OUT OUTER SPACE?

by

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The first section presents a comparative summary of current governance modes for space and the Internet and their shortcomings. Section 2 develops the limits of the traditional approach to their global governance, using the example of two dominant principles on which this governance is based and which turn out to be quite similar: that of net neutrality and that of neutralization of the outer space. Section 3 clarifies the international context which calls for new forms of global governance. Section 4 analyses the so-called "Multi-stakeholder Approach" proposed during the months of April and May 2014 to rework the system of global governance for the Internet. It seeks to determine whether this method can be transposed to the global governance of space. A short conclusion identifies a few potential lines of evolution.

ABSTRACT

Both space (outer space) and the Internet (cyberspace) have many points in common, among which are the highly-running tensions which affect their global governance today. These tensions can be explained by the importance that they have acquired over recent years and the considerable transformations they have undergone. Both are marked by the development of a powerful industry which lies outside of current global governance. They call for new forms of global governance which might extend to a complete reworking of the legal texts or practices on which current global governance is based.

This paper is intended to present a comparative analysis of the current governance modes of space and the Internet and their shortcomings. More precisely, the goal of this paper is to examine whether the solutions proposed to improve Internet governance which appear farthest advanced, are applicable to the domain of space.

I. INTRODUCTION

It may appear surprising to compare space and space activities on the one hand, with the Internet and the numerous services to which it gives access today on the other hand. And yet, thinking about it carefully, is not a satellite network a type of infrastructure similar to that of the Internet network? Within the European Union, they both form an "electronic communications network",¹ on the same footing as land-based networks, whether fixed or mobile, cable networks, or even communications systems using the electricity grid.

¹As covered by the current European directives (notably, EC, Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, [2002] OJ, L 108/33 [Framework Directive]), the term "electronic communications network" covers:

transmission systems and, where applicable, switching or routing equipment and other resources, including network elements which are not active, which permit the conveyance of signals by wire, radio, optical or other electromagnetic means, including satellite networks, fixed (circuit- and packet-switched, including Internet) and mobile terrestrial networks, electricity cable systems, to the extent that they are used for the purpose of transmitting signals, networks used for radio and television broadcasting, and cable television networks, irrespective of the type of information conveyed. *Ibid.*, art 2.

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Additionally, a satellite network may today be *hybridized*, e.g. formed of segments of different natures. Thus, a satellite network may be serviced or extended by a fixed or mobile land-based network, the cable network, or a network for television or radio broadcasting. It is or – may be – to some extent, a *network of networks* as is the Internet network.

There are even more points of comparison. For example, one might mention that the Internet network is both an American invention and a product derived from a military infrastructure.² Without being strictly speaking an American invention, the conquest of space owes much the policy of the United States (US) government. And the relations between space activities and military activities have profoundly marked the space adventure as they are still quite important to it.

Finally, over the last several years, both the Internet and space have experienced considerable development and very significant transformations, among which are the appearance and growing influence of a global industry unconfined by the global governance of the two spaces. Today, they are both experiencing comparable evolutions, though in opposite directions, with respect to each other: from public towards private for space, and from private towards public for the Internet. Both have gone through the three same different states. With their structure, they have both promoted – and continue to promote – the deployment of *military* activities, *civilian* activities, and finally, *commercial* activities. This major evolution, which was rather abrupt, may explain the currently existing tensions between their uses in the service of numerous applications or commercial services and the State sovereignty on which their global governance is traditionally based.

It is thus not unusual that both should experience a crisis in their global governance and currently be given considerations in an attempt to remake such governance.³ This is even the same primary element which brings them closer

together today.⁴

This paper is intended to present a comparative analysis of the current governance modes of space and the Internet and their shortcomings. More precisely, the goal of this paper is to examine whether the solutions proposed to improve Internet governance which appear farthest advanced, are applicable to the domain of space.

The first section presents a comparative summary of current governance modes for space and the Internet and their shortcomings. Section 2 develops the limits of the traditional approach to their global governance, using the example of two dominant principles on which this governance is based and which turn out to be quite similar: that of net neutrality and that of neutralization of outer space. Section 3 clarifies the international context which calls for new forms of global governance. Section 4 analyses the so-called "*multi-stakeholder Approach*" proposed during the months of April and May 2014 to rework the system of global governance for the Internet. It seeks to determine whether this method can be transposed to the global governance of outer space. A short conclusion identifies a few potential lines of evolution.

II. SPACE AND THE INTERNET: INVERSE GLOBAL GOVERNANCE

A. CHALLENGING GLOBAL GOVERNANCE

For various reasons, but with comparable arguments, the global governance of space and of the Internet are today at the center of a very broad international debate. Thus, in the month of March 2014, Ms. Dilma Rousseff, President of

⁴ As Laura DeNardis recalls about the Internet and which may be transposed to outer space

² As noted by Guillaume Buffet, Godefroy Jordan & Jean-Claude Michot in an opinion piece in the French economic newspaper, *Les Echos*, "Pour une gouvernance démocratique de l'Internet" ("For a Democratic governance of the Internet"), 14 March 2014.

³ See Laura DeNardis, *The Global War for Internet Governance* (New Haven: Yale University Press, 2014).

Internet governance is about governance, not governments. Governance is traditionally understood as the efforts of sovereign nation states to regulate activities within or through national boundaries. (...) Most Internet governance functions have historically not been the domain of governments but have been executed via private ordering, technical design and new institutional forms, all enacted in historically specific contexts of technological and social changes. *Ibid* at 11.



Brazil and Ms. Angela Merkel, the German Chancellor, respectively requested a radical change in Internet governance following revelations of spying practices by the American National Security Agency (NSA). Ms. Merkel, in particular, threatened the United States with the creation of a European Internet, if the conditions by which the Internet Corporation for Assigned Names and Numbers (ICANN) operates, were not changed. The US Department of Commerce seems to have taken the measure of the seriousness of these complaints, since it announced that it would be taking definite steps to significantly reduce its role in the procedure for awarding domain names between now and September 2015.⁵

These demands echo the aforementioned debates with regard to the governance of space along the last past months. Some denounce barriers to international cooperation which is becoming ever more urgent.⁶ Others invoke a "*conceptual confusion*" which afflicts certain initiatives, namely those by the Obama administration. A third category of authors emphasises the challenges posed by the proliferation and success of private enterprises in the global space industry such as SpaceX, Boeing, or Orbital Sciences with regard to the current form for the governance of space activities, designed at the time of the Cold War⁷.

However, a comparison between the global governance of the Internet and that of space is no easy thing. This is due less because these global governance systems cannot be described and analyzed in detail and more because the global governance systems are rooted in different, practically opposing, logics. Traditionally, States are concerned with the global governance of space, whereas businesses have concerned themselves with the global governance of the Internet. Governance of space, for its part, was constructed at the core of the Cold War. It lies within a logic in which State sovereignties are

pitted against one another in a confrontation between two blocks, enshrined by ideology and based on the balance of (nuclear) terror; a confrontation in which the competition which arose between the two blocks, at the start of the 60s as part of the conquest of space appears as an international embodiment. To a lesser degree, space governance incorporates demands by non-aligned peoples and developing countries, lacking the resources necessary for space exploitation. The other, Internet governance, corresponds to a contemporary three-fold movement involving the privatization of certain state functions, the growing influence of industry in the regulatory process and capture of global governance by large transnational companies.

B. SPACE GOVERNANCE

The essential core of space global governance is being developed within the United Nations (UN). With a weight provided by its 193 members, the United Nations General Assembly has six specific committees to assist it when addressing questions raised by major world challenges, two of which play a particularly important role in the domain of space. The First Committee relies on the work of the Conference on Disarmament⁸ and, especially, the work by Fourth Committee which, each year, reports recommendations of the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) to the General Assembly. The UNCOPUOS, composed of representatives from 74 Member States and 29 independent observers, is the UN body tasked with covering all problems of space and defining solutions such problems require. It operates like a forum where all questions raised by outer space are expressed. Its administrative functions are provided by the UN Office for Outer Space Affairs (UNOOSA).

The UNCOPUOS is, itself broken down into

⁵ With regard to all of these elements, see especially "Doing ICANN-can", *The Economist* 22 March 2014, online: The Economist <<http://www.economist.com/news/international/21599385-america-promises-release-its-grip-internets-phone-bookand-opens-up-debate>>.

⁶ Joseph Fuller, David Vaccaro & Dustin Kaiser, "Space Policy and Governance as Barriers to International Collaboration" (2010) IAC-10.E3.1A.11

⁷ Steven Robles, "Commercialization, law and governance in outer space", *The International* (14 November 2013), online: The International <<http://www.theinternational.org/articles/475>>.

⁸ The Conference on Disarmament is not an organ of the United Nations. This is an international forum in which questions regarding worldwide disarmament are debated. The Conference on Disarmament nonetheless works under the auspices of the United Nations. Due to the scope of its powers, it is logically called to discuss the question of Space disarmament and, generally speaking, all of the security and defense problems associated with the use of outer space. See "An Introduction to the Conference", online: United Nations Office at Geneva

<<http://www.unog.ch/80256EE600585943/%28httpPages%29/BF18ABFEFE5D344DC1256F3100311CE9?OpenDocument>>.



two subcommittees. One deals with scientific and technical questions, the other with legal and regulatory questions. Within each of these subcommittees, working groups do the foundational work for the UNCOPUOS. Only when their findings have been agreed among their members are they sent to the competent subcommittee which discusses them and endorses them in the form of reports to the UNCOPUOS. The UNCOPUOS incorporates its own contributions and, when they call for a resolution from the Assembly of the United Nations, present them at the next one of its annual sessions. The UNCOPUOS is tasked with the implementation of five international conventions on which the system of space activities and their global governance is based.

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty)⁹ forms the legal basis for the global governance of outer space. This is, in fact, a foundational text in the full meaning of this term. Today, it is binding on some one hundred States which ratified it, and it provides a general legal basis for peaceful uses of outer space and forms a framework for the development of and, beyond that, its global governance.

The four other treaties are, in some form, variations on certain concepts, and they follow the practice used in many other sectors such as telecommunications: one text acts as a framework law; it is supplemented by numerous application texts which are then themselves clarified by international texts (resolutions), regional texts (directives) or national texts (laws, decrees, orders), when they are not texts devoid of binding force (guidelines) in the form of soft laws. All of this lies within the logic of what in French is known as *un train de mesures*— or a sequence of measures – but what interpretation should be given to both of these with the notion of sequence: a set of consistent measures but also in the arrangement of legal norms following a model of rail-based convoys (locomotive text then carriage

texts).¹⁰

The four referenced treaties are

- the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer space, adopted 19 December 1967, opened for signature on 22 April 1968, and entered into force on the following 3 December (the Rescue Agreement);¹¹
- the Convention on International Liability for Damage Caused by space Object, adopted 29 November 1971, opened for signature on 29 March 1972, and entered into force on 1 September 1972 (the Liability Convention);¹²
- the Convention on Registration of Objects Launched into Outer space adopted on 12 November 1974, opened for signature on 14 January 1975, and entered into force on 15 September 1976 (the Registration Convention);¹³ and,
- the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, adopted 5 December 1979, opened for signature on 18 December 1979, and entered into force on 11 July 1984 (the Moon

¹⁰ It should be noted that in the neighboring domain of aerial activities, the legal method used is not very far from the one implemented in the domain of Space. It is based on a foundational convention, the Chicago Convention), supplemented by Annexes, for which both of the content and the development procedure permit global governance while complying with State sovereignty. See *Convention on International Civil Aviation*, 7 December 1944, 15 UNTS 295, ICAO Doc 7300/6 (entered into force 4 April 1947) [*Chicago Convention*].

¹¹ *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched Into Outer Space*, 22 April 1968, 672 UNTS 119, 19 UST 7570, TIAS No 6599, 7 ILM 151 (entered into force 3 December 1968) [*Rescue Agreement*].

¹² *Convention on International Liability for Damage Caused by Space Objects*, 29 March 1972, 961 UNTS 187, 24 UST 2389, 10 ILM 965 (1971) (entered into force 1 September 1972) [*Liability Convention*].

¹³ *Convention on Registration of Objects Launched into Outer Space*, 6 June 1975, 28 UST 695, 1023 UNTS 15 (entered into force 15 September 1976) [*Registration Convention*].

⁹ *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 January 1967, 610 UNTS 205, 18 UST 2410, TIAS No 6347, 6 ILM 386 (entered into force on 10 October 1967) [*Outer Space Treaty*].



Treaty).¹⁴

A series of principles, including the Declaration of Legal Principles,¹⁵ supplement this legal mechanism. They are enshrined in the form of statements, whose development, formulation, and adoption were supervised by the United Nations.

While this legal framework constitutes the major part of the basis on which global governance of space activities operates today, it is not the only one. In effect, there must be inclusion of two international organizations who play a non-negligible role:

- The International Telecommunications Union (ITU) and, more particularly, within it is the Bureau of Radio Communications plays a determining role in the management of orbital positions, including the associated radio electric frequencies;
- the Inter-Agency Space Debris Coordination Committee (IADC) which especially is an international forum bringing together a set of governmental organisations tasked with the question, which has become essential in recent years, respecting the management of space debris both of human and natural origins. The IADC is thus at the core of problems that are as critical as the exchange of information between its members about space debris and the implementation of coordinated actions to identify them, monitor them to reduce risks of collisions and space accidents, attempt to limit their production or organize the conditions of their elimination.

It should be noted that all of these conventions or international organizations

establish the supremacy of States in the global governance of space activities. One may even regret (even if this is again explained by the context of the Cold War in which this global governance was constructed) that the global governance of space activities has not made way for industries, such as the founders of global governance of aerial activities saw the need when they intelligently intuited the need by creating the International Air Transport Association (IATA) and tasking it with visions of general interest (conferences on tariffs, clearing house etc).

C. INTERNET GOVERNANCE

The global governance of the Internet is based on different principles. It is less systematic and more empirical. Although the Internet that we know today is the heir of the US military network, ARPANET, its global governance offers very little space to States and their initiatives. The abstention of any and all state control is even one of the founding principles for the global governance of the Internet. As shall be seen, it is the demand for a "Hands-Off Approach" by the States and dominant operators which underlies the demand in favor of Net neutrality.

Laura de Nardis shows, in her work *The Global War for Internet Governance*, how the technical and political dimensions of the Internet interweave to form what must clearly be called the global governance of the Internet. The Internet's architecture is, of course, based on a network of interconnection conventions in the form of "*peering agreements*" between powerful operators and different levels, is in reality articulated quite hierarchically on the basis of the Settlement-Free Peering between level 1 operators, Free-Based Transit between level 1 and level 2 operators and Internet Stubs between level 2 and 3 operators. This organization already dissimulates power relations in the political sense of this term. It stands to reason that standards and the other technical protocols which allow the interoperability of devices on the various infrastructures are at stake in determining power.

In these interconnected infrastructures, intermediaries (hosts, search engines, domain name administration organizations, or operators who manage interchange points, routers) have the power to regulate flows and, consequently, act on the content. It is not by chance that all of these intermediaries have implemented their own

¹⁴ Agreement governing the Activities of States on the Moon and Other Celestial Bodies, 5 December 1979, 1363 UNTS 3 (entered into force 11 July 1984) [Moon Agreement].

¹⁵ Declaration of Legal Principles Concerning the Activities of States in the Exploration and Use of Outer Space, UNGAOR, 18th Sess, Res 1962 (XVIII), UN Doc A/RES/18/1962E (1963) [Declaration of Legal Principles].



access policies in the form of guidelines, specifications or general terms and conditions. Their power is strengthened by the global nature of the Internet which leads to *extra-territorialisation* in the rules they establish. This power is such that governments wishing to protect themselves from it, have no other choice than to develop competing tools and exercise their own censure when entering territories.

Even more, the global governance of the Internet is today under the exclusive control of private companies and non-governmental organizations which are tasked with it. This is, to a great degree, the consequence of a movement to privatize sovereign functions in the domain of the Internet. A certain number of recent affairs, beginning with WikiLeaks, have demonstrated its importance today. And it is certainly astonishing to note that there are large private groups, many of them a multinational, which act as the Internet police with respect to the effectiveness of regulations and eliminating bad actors.

The well-known control points (Internet Control Points) are designed, determined, and applied following strategies which have an avowed political dimension. This explains why today the extremely undemocratic nature of the global governance of the Internet is denounced. It should be recalled that 4.3 billion inhabitants remain without the Internet and that at a time when the mobile Internet is taking off in the rich countries, it is 100 times more expensive in emerging countries. This is what has led a certain number of operators, among which are several operators in the space sector, to imagine alternative solutions using satellites (O3b)¹⁶, atmospheric weather balloons (Project Loon)¹⁷ or drones (Triton Aerospace).¹⁸

Finally, it is no secret for anyone that the Internet has acquired a determining place in the solution of a certain number of global challenges which must be met by humanity, failing which

humanity itself may disappear: environmental protection and the fight against global warming, terrorism prevention, eradication of infectious diseases and pandemics, and human rights protection. Its efficacy depends on the capacity of governments to guarantee the integrity, continued existence, and stability of its physical infrastructure. The Internet, in turn, has acquired geopolitical importance.

In such a context, the symbol of global governance of the Internet remains ICANN, a private company under US jurisdiction, tasked with administering Internet Protocol (IP) addresses.¹⁹ This is what draws all of the criticism leveled at the global governance of the Internet from governments who wish to emancipate themselves and acquire a share of power in the organisation of global governance where States would have a status comparable to the one they have in the space sector.

NET NEUTRALITY VERSUS (OUTER) SPACE NEUTRALISATION

A. NEUTRALITY AT STAKE

A witness to the vicissitudes of their respective constructions, both global governance of space and that of the Internet have a common concern: *neutrality*.

Neutrality of outer space, including the Moon and other celestial bodies, the exploration and use of which must be carried out "for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development (...) without discrimination of any kind, on a basis of equality and in accordance with international law (...)"²⁰ and which "is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means".²¹ This principle of space neutrality explains the implementation of a *neutralisation* scheme created by Articles III, IV, and V of the same

¹⁶ O3b (Other 3 Billions) uses a fleet of 12 satellites. The first satellites were launched in June 2013.

¹⁷ In June 2013, Google launched 30 weather balloons some 15 kilometres and they act as genuine radio stations.

¹⁸ Titan AeroSpace manufactures drones capable of flying for several years at very high altitude, on the order of 20 kilometers from the ground, and which carry on board technologies that will make it possible to guarantee the coverage of isolated land territories. It should be noted that Titan AeroSpace is coveted by Facebook.

¹⁹ To recall, ICANN is a company formed under California law.

²⁰ *Outer Space Treaty*, *supra* note 9, art I.

²¹ *Ibid*, art II.



international treaty, through

- The objective of maintaining "international peace" and "security" and the search for "international cooperation" and "understanding" (Article III);
- the refusal of "any objects carrying nuclear weapons" or "other kinds of weapons of mass destruction" and the use of space "exclusively for peaceful purposes" (Article IV);
- The consideration that astronauts are "envoys of mankind" which gives them the obligation to render "all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas distress, or emergency landing on the territory of another State Party or on the high seas" (Article V).

Net Neutrality, which lacking in international consecration, is defined by the American academic, Tim Wu, who is commonly considered to be the "father of the expression", in the following terms:

For a public information network to be as useful as possible, it must tend to treat all contents, sites and platforms in the same way. The Internet isn't perfect but its original architecture tends towards that goal. Its decentralized and essentially neutral nature is the reason of its success, both economic and social.²²

The neutrality of the Internet postulates an "Open Internet", a foundational principle of the Internet and which is generally interpreted to be "the ability of users to access and put online content and information of their choosing, to use and develop services and applications, and to connect whatever devices they wish to the network".²³ It postulates the absence of

discrimination in access to the network both in its *use* or even its *exploration* to adopt the previously cited terms of the Outer Space Treaty.

Appearing in the United States, around the turn-of-the-century, with respect to the conditions for access by service providers to the Internet communications market via cable, Net neutrality took on dimensions of a "regulatory principle" in the middle of the first decade of the 2000s, starting with four guidelines from the US Federal Communications Commission (FCC), which enumerated the rights of users to access all content and applications, to make use of any and all devices, and to have competition between service providers. The FCC would show itself to be more proactive again at the end of the first decade of the 2000s by a decision regarding practices by the cable distribution operator Comcast which, subsequently, would be considered to be exceeding its prerogatives.

The debate about Net neutrality, which began in the United States, would reach Europe only a little later in different circumstance with a different outcome, the analysis of which exceeds the scope of this paper. Whatever the case, the principle of neutrality shared by both outer space and the Internet is today a symbol of the shortcomings in their respective systems of global governance.

- Space Neutrality, because although it is stated in international texts having a binding force, it once again illustrates the "tragedy of the commons";²⁴
- Net Neutrality, because although it is applied effectively, it runs into problems with regard to its international legal recognition, a symptom of the contradictions that cut through it.

B. SPACE NEUTRALITY

Experience has shown that the

²² Tim Wu, "Network Neutrality, Broadband Discrimination", in Mark N Cooper, Mark A Lemley & Lawrence Lessig, eds, *Open Architecture as Communication Policy* (Center for Internet and Society, Stanford Law School, 2004).

²³ Report of the French government to Parliament drawn up in application of Article 33 of Act No. 2009-1572 of 17 December 2009

respecting the digital divide, 16 July 2010, the same report added that "open Internet thus refers to a Space which is not under the control of any actor in particular, where each person may freely create, undertake, and see his or her expression, creations, and activity accessible to the entire Internet".

²⁴ Garrett Hardin, "The Tragedy of the Commons" (1968) 162 *Science* 1243; J Gregory Sidak & Daniel F Spulber, *Deregulatory Takings and the Regulatory Contract. The Competitive Transformation of Network Industries in the United States* (Cambridge: Cambridge University Press, 1997).



proclamation of neutrality of space by internationalizing its status and its neutralization for uniquely peaceful purposes had meaning only in the context of the Cold War. It was important, even if illusory, to remind the two blocks to comply with their fundamental duties: their confrontation had to remain Earth-bound, it could not extend into space which was intended to become a sanctuary.

But today, although this confrontation has disappeared at the same time as the last elements of the Berlin Wall were taken down – and this, regardless of the attempts of certain persons full of nostalgia to revive this confrontation through the Ukrainian crisis – this principle of neutrality in outer space and the neutralisation scheme contained therein have lost their meaning and even their scope.

Their common destiny might be the one that is acknowledged today on the high seas. Declared to be mankind's common heritage,²⁵ it is the scene of unprecedented exploitation with regard to fishing and mining resources, benefiting the few countries which possess the technical capacities and even a few private groups, who care little for the general interest and the conservation of its resources, which they are exhausting in the name of their sole profit. The principal cause of this situation lies in the shortcomings of the global governance system in place, under the aegis of the United Nations, particularly marked by the multiplication of international organizations lacking powers or international treaties without actual consistency among them.²⁶

Worse, the *sanctuarisation* of the high seas scheme, under the cover of generous qualifications without having any real legal or political scope, prevent the implementation of the only solution that might make it possible to regulate such exploitation: granting usage or exploitation rights, which could be made contingent and subordinate to very strict conditions, accompanied by effective sanctions.

The use and exploitation of outer space are not sheltered from the same risks, which may

result in the same drift. The UNCOPUOS is certainly useful, but it is only a forum at which representatives from the States express themselves. This means not only that it is not a decision-making body possessing the international power of sanction, but moreover that its legitimacy is forcibly limited by its composition which neither represents all of the States nor even all of the current components in the space sector, starting with private operators. This situation is especially troublesome since what was international has been nationalized to some extent, over the course of recent decades with the multiplication of space laws. Even better, according to the excellent formulation by Professor Frans von der Dunk, space has become legally "earthbound" by becoming associated with the jurisdiction of States which ultimately define the conditions for access, use, and even exploration, including for military purposes. By a curious paradox, these laws are necessary to frame the system for States' liability. They are the expression of State sovereignty in an international society which the latter continue to dominate, even if the States are no longer the only actors. But these laws contain within themselves the end and, consequently, the failure of the major principles, beginning with the one which is space neutrality.²⁷

C. NET NEUTRALITY

The principle of Net neutrality suffers from a different ill. Unlike the principle of space neutrality, if we care to exclude the cases of those rare countries who have enacted it, such as The Netherlands in Europe²⁸ or Chile outside of Europe,²⁹ it cannot be found in any legal, whether national or international, text. In other

²⁵ United Nations Convention on the Law of the Sea, 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994), art 136.

²⁶ "Governing the High Seas – In Deep Water", *The Economist* (22 February 2014) at 47.

²⁷ Frans von der Dunk, "The Undeniably Necessary Cradle – Out of Principle and Ultimately Out of Sense" in Gabriel Lafferranderie & Daphne Crowther, eds, *Outlook on Space Law over the Next 30 years, Essays published for the 30th Anniversary of the Outer Space Treaty* (The Hague: Kluwer Law International, 1997) 401.

²⁸ The Dutch law (*Wet van 10 mei 2012 tot wijziging van de Telecommunicatiewet ter implementatie van de herziene telecommunicatierichtlijnen* [Act of 10 May 2012 for the amendment of the Telecommunications Act for the implementation of the revised telecommunications directives]) was adopted on 4 June 2012.

²⁹ The Chilean law was adopted on 13 July 2010 after an amendment to the General Telecommunications Law.



words, legally it does not exist.³⁰

In almost all States, Net neutrality in effect lies within a legal framework with fuzzy borders and an uncertain scope. A Policy Statement was adopted in December 2010 by the US FCC;³¹ very timid recommendations adopted by its Canadian counterpart, the Canadian Radio-television and Telecommunications Commission (CRTC) in its Review of the Internet traffic management practices of Internet service providers from the month of October 2009;³² elsewhere very evasive guidelines proposed by the Norwegian regulator Norwegian Post and Telecommunications Authority (NPT) in the previous month of February 2009.³³

But when these texts have a binding legal value (which is already debatable), they fail due to their imprecision and the inadequacy of their contents. Must we thus allow ourselves to be abused by the expression "regulatory principle" which is regularly appended to Net Neutrality?³⁴ It demonstrates the discomfort in those who use it, beginning with the Commission of the European Union. It means nothing for legal scholars, except as to its literal interpretation. It would then mean *a legal principle, having a regulatory value*, which would have the consequence, even if enshrined by a text, legally binding in nature (which is not the case), the principle of Net neutrality would have no more force than a regulation and it could thus be the subject of contrary provisions by law or by any higher standard, whether internal or international.³⁵

³⁰ See our comments in Journal of Regulation, "Debate on Net Neutrality : In Search of a Legal Principle", 1st November 2011

³¹ FCC News, Press Release of 21 December 2010. See also FCC, *In the Matter of Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, 1 December 2010, online: FCC <https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1.pdf>

³² Published 21 October 2009

³³ Published 24 February 2009, Norway, *Network Neutrality Guidelines for Internet Neutrality*, online: Norwegian Post and Telecommunications Authority

<http://eng.nkom.no/technical/internet/net-neutrality/net-neutrality/_attachment/9222?_ts=1409aa375c1>

³⁴ For example, the memorandum from Ms, Corinne Ehrel and Ms. Laure de la Raudière submitted in application of Article 145 of the *Regulation by the Commission on economic affairs (National Assembly) on the network and Internet neutrality*, No. 3336

³⁵ See EC, *Communication from the Commission to the European Parliament, the Council, the economic and social Committee and the Committee of the Regions* no. COM/2011/0222 of 19 April 2011 on the

Perhaps, a fatality should be seen in this, associated with the ambiguity of the principle of neutrality itself.³⁶ The principle of neutrality is not unknown in many legal systems, just as it is not unknown in European law or international law. Unlike Net neutrality, generally it has the value of a fully enforceable legal principle.

In domestic law, it can be seen, for example, in such varied disciplines as business law (advertising), tax law (value added tax, VAT), administrative law (public function), or constitutional law. The debate over institutional secularism, which, for example, has been undertaken in many European States under the influence of sectarianism or the electoral movement of religious parties in the young democracies resulting from the Arab Spring, revolve around a constitutional principle of neutrality.

Now, this is clearly something of a chameleon principal since in each of these legal disciplines, the principle of secularism takes on different meanings, adapting to the context. The principle of neutrality which underpins the VAT mechanism in Europe is clearly not one enshrined by administrative or judicial jurisdictions. And it is in no way related to that which is claimed in the organization of political institutions or for the protection of fundamental rights.

It is in the universe of communications and the law governing it where the principle of neutrality is most ambiguous.³⁷ Neutrality is at least twofold: technological neutrality and competitive neutrality, which in large part explains the current confusion in the debate surrounding smart television, a confusion in which often the use of one expression is used in the place of the other.

Stated for one of the very first times by the License Directive of 10 April 1997,³⁸ technological

open internet and net neutrality in Europe; additionally, the EC, *Commission declaration on net neutrality 2009/C308/02 of 18 December 2009*, [2009] OJ, C 308/1.

³⁶ With respect to the principle of neutrality, see especially Vassilios Kondylis, *Le principe de neutralité dans la fonction publique* [the principle of neutrality in public functions], (Tome: LGD), Bibliothèque de droit public, 1995) at 168

³⁷ Lucien Rapp, "Dialogue de sourds autour du principe de neutralité" [People talking past each other about the principle of neutrality], *Les Échos* (1 March 2004).

³⁸ EC, *Directive 97/13/EC of the European Parliament and of the Council of 10 April 1997 on a common framework for general authorizations and*



neutrality occurs several times in the Telecoms Packages Directives of 2002.³⁹ They can be found, for example, in the Authorization Directive, where there is the following recommendation: 'the establishment of an authorization system covering all comparable services in a similar way regardless of the technologies used'⁴⁰ and especially, the Framework Directive of the same 2002 Package, where it is given a slightly different meaning:

Member States to ensure that national regulatory authorities take the utmost account of the desirability of making regulation technologically neutral, that is to say that it neither imposes nor discriminates in favor of the use of a particular type of technology".⁴¹

These provisions are incorporated emphatically in Directive 2009/140/EC of 25 November 2009 (for example, recitals no. 35, 40, and 68).⁴² In the spirit of the Framework-Directive, as amended in 2009, discrimination may still be positive to restore balance or promote certain specific services.

Competitive neutrality is an economic concept which is beginning to be used in competition law. It particularly appears in decisions settling inter-connection disputes, when the issue involves rate setting for a call connections operator of a vertically integrated operator who controls the infrastructure and makes it possible to provide the interconnection. The judge then strives to determine the rate which remains compatible with a competitive market, hence the expression "*competitive neutrality*".

Net Neutrality is neither this legal neutrality nor the previously defined technological or competitive neutrality. Were that the case, it

would surely be given a legal status. It is of a different nature which prohibits the use of one of these three principles or even all three of them at the same time in an attempt to create a place for it within the legal framework.

In the aforementioned Declaration, and again in the Communication which it published on 19 April 2011,⁴³ the Commission clearly expressed its unease with the legal landscape. It evoked at best "a political objective", "a commitment" which it associates or attempts to associate with several regulatory provisions. Moreover, it acknowledges very significantly that "there is no established definition of net neutrality."

Net Neutrality, for the Commission of the European Union, refers to the management of Internet traffic which must remain as "reasonable" as possible, which leads – rather more implicitly than explicitly – to associating Net neutrality with three different legal principles:

- *The principle of freedom of communication* which postulates the right of any end-user to access information, by using infrastructure or by using applications and services of his/her choosing (Article 8(4)(g) of Framework Directive 2002/21; First Amendment to the United States Constitution);
- *The principle of transparency* which is the condition of any free and competitive market and which justifies, for example, the statement of minimum requirements for universal service (Article 21 of the Universal Service Directive)⁴⁴ or the search for greater fluidity in the market, especially when changing operators (Article 30(6) of the Universal Service Directive);
- *The principle of equality* which opposes any difference in treatment with regard to access to infrastructure and electronic communications services, singularly when they are public.

individual licences in the field of telecommunications services, [1997] OJ, L 117/15.

³⁹ Framework Directive, *supra* note 1.

⁴⁰ EC, Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services, [2002] OJ, L 108/21 [Authorisation Directive], recital 2.

⁴¹ Framework Directive, *supra* note 1, recital 18.

⁴² EC, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services, [2009] OJ, L 337/37.

⁴³ See aforementioned EU Commission Declaration and Communication, *supra* note 35.

⁴⁴ EC, Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services, [2002] OJ L 108/51 [Universal Service Directive].



It is not sure that Net Neutrality – at least in the minds of its promoters throughout the world and more particularly in the United States⁴⁵ – can be reduced to conditions of traffic management. But, supposing that this is the case, it becomes more doubtful that the aforementioned principles would be capable of providing a serious legal basis for the finding of a principle of Net neutrality or even leading the judge to identify a general principle at law.

In the absence of legal recognition, the principle of Net neutrality winds up depending on the manner in which operators interpret it and implement it. This is precisely the meaning given in the formula provided by Laura de Nardis in the aforementioned work "The Non Neutrality of Net Neutrality". In and of itself, it represents the expression of the current difficulties in the global governance of the Internet.

III. TOWARDS NEW MODELS OF GLOBAL GOVERNANCE?

A. GOING GLOBAL, GOING LOCAL, GOING DIGITAL

The current difficulties both in global governance of space and of the Internet are associated with an unprecedented mutation in the circumstances and procedures of world governance. This mutation calls for a rethinking of global governance of space and of the Internet in light of its primary characteristics.

Global governance is, in effect, sewn through by three movements which modify it in depth:

- The phenomenon of *globalization* which results in the progressive disappearance of both terrestrial and sectorial borders; however outer space, more than the Internet, has experienced an inverse movement of re-nationalization, through the adoption of national space laws. Both sectors must also prepare for the disappearance of sector-specific boundaries, which shall finish by erasing the differences which currently separate

space from the Internet, and resulting in the appearance of a global infrastructure which brings them together and soon without the juncture of the container industry and that of content.

- the converse movement of *localization* which tends to territorialize or re-territorialize networks; recall for a moment the importance acquired by space laws and the consequences resulting therefrom, but the Internet has experienced a phenomenon of the same nature with the appearance of national demands by a global governance that is more political, as is demonstrated by the demands currently of Brazil on the occasion of the global summit on Internet governance hosted by that country on 23 and 24 April 2014 in São Paulo.
- the effects of *digitalization* which are overturning the conditions for global governance of the two sectors, the Internet and space, through its three major consequences: the de-specialization of land-based infrastructure such as radio electric equipment, the dematerialization of media, and the remaking of the intellectual property system as a result of it and the diversification of terminals (screens, computers, laptops, tablets, smartphones).

B. MEGATRENDS

These movements are leading to a rethinking of global governance in the sectors of space and the Internet in the perspective of four megatrends which now mark it. Today, the space and Internet sectors are experiencing all of the impacts, certainly in a different manner, but in the end quite comparable.

The first is associated with the fact that the world has become multipolar (a multipolar world). The end of the 20th Century was thus marked by fallacious certainties about the "End of History"⁴⁶ or the implementation of a sustained

⁴⁵ See Wu, *supra* note 22.

⁴⁶ Francis Fukuyama, *The End of History and the Last Man* (New York: Maxwell Macmillan International, 1992).



"Pax Americana". This 21st Century lives, and doubtlessly will live, following the rhythm of cooperation, competition, or even confrontation between different polls formed around leaders. As with the Internet, the world is today profoundly decentralized. Space offers one of the most remarkable illustrations with the appearance of a post-Lisbon Treaty European center, having a role to which one must become accustomed. Its governance begins to revolve in the same way as the one previously defined.⁴⁷

The second element is the need to consider the existence of multilevel governance (*multilevel governance*). Nation States are decentralizing the political and administrative organization of the powers, while recognizing the independence of regions or federated states. But, more and more often, at the same time, that they adhere to trading zones which are more or less integrated: the European Union clearly is one, but also there is the North American Free Trade Agreement (NAFTA), Mercosur (*Mercado Común del Sur*, The Southern Common Market), or Association of Southeast Asian Nations (ASEAN). Some of these zones such as the European Union, imply the abandonment of parts of sovereignty, others are based on the more-or-less permanent transfer of powers. They all revolve around a hub and a periphery which brings together neighboring States sharing a common history or interest. Earlier, the recent role of the European Union and the space sector and the growing demand for the exercise of the most important powers was mentioned.

A third trend is the one which is now characterized by all economies and affects the traditional global organization based on inter-State organizations: *multiple actors* (multi-actors). The Internet shows this with a multitude of new professions created over several years, around industries involving containers and content; they show the existence of a new economy which is more dynamic than the old one and, accordingly, more attractive, as has been demonstrated by dizzying stock market capitalizations for the primary operators. But space also provides an illustration which today is manifested by the revolutions found in the launch sector with the appearance of a new actor, SpaceX The

multitude of actors is also symptomatic of a deeper ill, that of the representative system. The Internet, one by one, has caused all intermediaries to disappear, and provides each web user with the power to develop spatial applications which little by little make the traditional industries in the space sector less State-dependent.

The fourth trend is precisely the consequence of an unprecedented acceleration in technical progress. Because the 21st Century is that of hyper connectivity, it is both poorly executed and modeled by the development of information and communication technologies which further accelerate progress and transformation. They are in a muddle: Internet on mobile, for triple play, electric propulsion or reusable engines. Or even, to adopt the formula of a CEO in one of the sectors of the space industries, since now has especially come the time to speak of "techno-pushed" industries rather than "market-pulled" ones.

These trends have clearly had determining influences on the conditions of global governance: if there were a time when political or industrial organizations could decide for citizens, they are now quite vigilant as to the respect of their prerogatives and no longer agree that decisions can be made for them. Thus, it is the legitimacy of institutions invested with global governance which has been called into question. This movement has amplified, at least in Europe with the development of the crisis following the American episode involving sub-primes. The questions have become existential: who decides, on what basis, under what regime of democratic control?

This is the context in which the new global governance of the Internet is at stake.

IV. MULTISTAKEHOLDER APPROACH AND GLOBAL INTERNET GOVERNANCE

The São Paulo Summit, which took place on 23 and 24 April 2014, provided an occasion for in-depth reflection about the evolution of global Internet governance (the Future of Global

⁴⁷ Jan Wouters & Rik Hansen, "The Other Triangle in European Space Governance: The European Union, the European Space Agency and the United Nations", Leuven Centre for Global Governance Studies, Working Paper no.130, December 2013.



Internet Governance).⁴⁸ It again allowed the testing of a new method to achieve it, that of the Multi-stakeholder Approach. Can this method be transposed to the space sector?

It was based on an upstream collaborative work relying on more than 180 contributions, which themselves focused on two sets of considerations: Internet Governance Principles and Roadmap for the Future of the Internet Governance.⁴⁹

The *Internet Governance Principles* aim at the implementation of a global governance which:

- includes all stakeholders (governments, private sector, civil society, technical community, academia and users),
- should be considered legitimate in light of democratic principles, and,
- would allow its evolution over time.

This global governance is based on the statement of fundamental rights which results from the essential rights and values reflected by the international texts, beginning with the Universal Declaration of Human Rights.⁵⁰

As the preparatory documents for the São Paulo Summit recall:

Rights that people have offline must also be protected on line, in accordance with international human rights legal obligations, including the International Covenants on Civil and Political Rights and Economic, Social and Cultural Rights.⁵¹

Numbering among these rights are found, particularly, freedom of expression, freedom of

association, law for the respect of privacy and cultural differences, universal Internet accessibility for everyone, as the Internet now constitutes an instrument of economic development.

Beyond these rights the network itself must be sufficiently unified and stable to allow the free flows of data from one country to another. It must guarantee the security of data transferred, regardless of the country, which implies a close cooperation between nations. Its architecture must be open and it must be based on standards that allow interoperability in devices and access infrastructure. Decision-making procedures must be transparent, reliable, and collaborative. And the policies for access to commercial services which are accessible from the Internet must be flexible to adapt to technological changes.

The Roadmap for the Future Evolution of the Internet Governance seeks the implementation, on a step-by-step basis, of sustainable and effective institutions, following a very open, transparent, cooperative, and even distributive process.⁵² As was stated in the preparatory documents to the Global Summit

there is a need to develop multi-stakeholder mechanisms at the national level owing to the fact that a good portion of Internet governance issues should be tackled at this level. National multi-stakeholder mechanisms should serve as a link between local discussions and regional and global instances. Therefore a fluent coordination and dialogue across those different dimensions is essential.⁵³

This being so, it must be recognized that the results of the São Paulo Summit did not live up to the expectations that were had for it. These modest results significantly lessen the interest of the method implemented and, consequently, that of transposing it to the space sector. One of the reasons is associated with the fact that the Internet (as with space) is still a highly concentrated industry. Its expansion could help to reduce development inequalities. But today, it contributes to their increase.

⁴⁸ See ICANN, "The Global Multistakeholder Meeting on the Future of Internet Governance, São Paulo - Conference Update", online: ICANN <<https://www.icann.org/news/announcement-2014-01-11-en>>.

⁴⁹ See NETMundial, "NETMundial Initiative taking Positive Steps Forward", online: NETMundial <<http://netmundial.br/wp-content/uploads/2014/04/NETmundial-Multistakeholder-Document.pdf>>.

⁵⁰ *Universal Declaration of Human Rights*, GA Res 217(III), UNGAOR, 3d Sess., Supp No 13, UN Doc A/810 (1948).

⁵¹ NETMundial, *The NETMundial Principles*, online: NETMundial <<https://www.netmundial.org/principles>>.

⁵² NETMundial, *Roadmap for the Future Evolution of the Internet Governance*, online: NETMundial

<<http://document.netmundial.br/2-roadmap-for-the-future-evolution-of-the-internet-governance/>>.

⁵³ *Ibid*, sect 1, para 4.



It should be emphasized that the 10 most frequently visited sites in the world cumulated in the United States in 2001: 31% of page views in 2006, 40% in 2013, close to 75%. The stock market capitalization of the primary global operators exceeds the budgets for most States. Finally, how can one be unaware that 4.3 billion individuals have no access to Internet?⁵⁴

Global governance which promotes such a concentration of powers is thus a powerful factor of social injustice. It raises the question of its legitimacy from the point of view of fundamental principles in any democracy. This was, in fact, observed by Norbert Bollow, who observed:

in the realm of political institutions, concentrations of power are of course also a potentially serious problem. However, the constitution of every democratic country has been carefully designed to prevent dangerous concentrations of power. There is a careful division of powers between different institutions and there are checks and balances. Similarly, we need to insist that the power that any government or company can have on the global Internet must be limited. For example, Microsoft, Facebook and Google are each unreasonably and unacceptably powerful. Unfortunately, the current system of what is often grandly called Internet Governance lacks any mechanism to effectively diffuse such a concentration of power.⁵⁵

V. LOOKING FORWARD

Global governance of outer space is marked by a comparable concentration of powers. While the club of space powers has expanded over the course of recent years, with China, Brazil, or India who have made space a marker for their international power, space is also,

as notes Professor Serge Sur "the reflection and the instrument of inequality between States".⁵⁶

The United States surely remains among the leaders, at least from the point of view of budget devoted to space, which is twice that of the other powers combined. Despite the end of the Soviet Union, Russia retains international influence with the Soyouz launcher which alone is capable of resupplying the International Space Station. Europe, having the second-largest the space budget, has benefited from the commercial success of Arianespace and has built a global strategy centered on the launch of satellites from third countries.

The definition of a new global governance for space thus reveals similarities and differences with respect to that of the Internet. It is different because it is still the concern of States; but the difficulties that it currently encounters in many respects recall the ones involving global governance of the Internet: a dangerous concentration of powers, served by an organization built during the time of the Cold War and, consequently, poorly suited today for the new context arising from the previously described phenomenon of globalization.

These two characteristics combine in the shortcomings of the current organization for the exploitation of outer space. The status of outer space as a "shared asset" suggests a common property scheme and, consequently, a logic of solidarity among nations and their nationals. However, such a logic does not exist. It should exclude any and all State sovereignty, while space governance is today the opposite: it is more than ever dominated by sovereignties and, consequently, State egos.

Such a situation reveals its limits since space is currently at the origin—as well as it might be THE solution— of global problems which call precisely for collective responses: from the imperious necessity of monitoring climatic disruptions from outer space to the throbbing problem of space debris which could threaten, if not properly addressed, the future use of space. In this objective, a method based on the consultation of all stakeholders, as was experienced at the São Paulo Summit on 23 and 24 April 2014 respecting

⁵⁴ See "Statement by Anita Gurumurthy, Executive Director, IT for Change, at the closing ceremony of WSIS plus 10 review held by UNESCO from 25th to 27th February 2013", online: GenderIT.org

<http://www.genderit.org/sites/default/upload/wsis__10_closing_statemnt_by_anita_g.pdf>.

⁵⁵ Norbert Bollow, "Root Causes of Internet Social Justice or Injustice" (April 2014) no. 494 America Latina in Movimiento (ALAI), online: Bollow.ch <http://bollow.ch/papers/Root_causes_of_internet_social_justice_or_injustice.pdf>.

⁵⁶ "L'Espace, Enjeu Terrestre— La Documentation Française ", *Question Internationales*, Vol 67, (30 April 2014) [Space, a land-based issue, French Documentation].

Global Internet Governance, may prove to be useful in building a new global space governance.