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Legal Implications of Globalization Issues: From E-Commerce to the Internet

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Abstract

Internet-based electronic commerce (e-commerce) is the vanguard of globalizing market sectors challenging conventional nation-state and inter-governmental organization (IGO) jurisdictional boundaries and competencies. Traditional market boundaries and geography are of minimal consequence to e-commerce transactions amounting to more than $300 billion in 1998, a sales volume likely to rise rapidly as Internet infrastructures follow their increasingly mobile customer base which is departing from essentially „fixed" computer facilities and workstations and moving to mobile digital handset-organizer-Web browser appliances. Deployment of satellite-based Internet e-commerce networks will follow suit, allowing thousands of „virtual" firms to interactively connect to potentially millions of mobile customers either directly through Internet-capable global mobile personal communication system (GMPCS) handsets or indirectly through fixed Internet appliances. E-commerce through Internet-capable satellite links poses jurisdictional questions far beyond the typical PTT liberalization issues affecting primarily telecommunications sectors. From gambling to taxation, and from data protection to product warranties, e-commerce strikes directly at the competency of governments and IGOs to regulate a quickly globalizing marketplace. This paper examines whether e-commerce conducted over Internet-based satellite links affect nation-state and IGO compliance with obligations under the outer space treaties.

Introduction

E-commerce is already a multi-billion dollar sector of the Internet market. Utilizing Internet WWW services, individual, firms, and governments worldwide are buying and selling stocks, products, and services. From pornography to pizzas, Internet e-commerce brings a growing range of markets to each of today's more than 200 million computers hooked to the Web. By the middle of the coming decade, worldwide Internet e-commerce may reach over $1,000 billion, more than a tripling of its current level of about $300 billion.(1) The rapid expansion of the Internet continues to transform information technology infrastructures, regulatory regimes, and to accelerate the globalization of markets. The synergy between globalizing markets and Internet-based e-commerce is spurring investments

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and deployments of Internet-based satellite constellations that will open up new market sectors to worldwide buyers and sellers regardless of where they are located.(2) Going beyond the structure of Internet-based satellite networks reviewed earlier,(3) this paper examines the extent to which e-commerce conducted over satellite-based Internet links poses an additional challenge to the ability of nation-states to comply with outer space treaties.

Sector Liberalization and Jurisdictional Issues

In contrast to conventional terrestrial wireline circuit-switched telecommunications, satellite systems constantly challenge the relevance agreements establishing jurisdictional competence. Signals spill over national borders as well as domestic regulatory boundaries, often providing the stimulus for what eventually becomes a generalized market liberalization. For example, the 1972 U.S. Federal Communications Commission „Open Skies" decision was a major milestone towards telecommunications and broadcasting deregulation and sector liberalization.(4) Satellites have also exerted a strong stimulus towards telecommunications liberalization in Europe and other regions.(5) However, up to now, satellites have provided merely an additional platform from which circuit-based telecommunications pathways could be established between users, a network architecture that centralized control with the network provider, formerly the PTT or monopoly network operator. Supervision or control over each circuit was a relatively transparent technological and administrative task for the network operator. That would change with the Internet.

The Internet's decentralized and chaotic network architecture shifts many control functions from the network operator to the users. The Internet's packet-switched structure relies on voluntary interconnections between network providers who do not directly control the building up or taking down of circuits between users. Circuits are *virtual*, meaning that the actual communication of data packets takes place along any number of possible pathways through what is commonly referred to as the „frame relay cloud." This portends a significant loss of control and oversight once afforded the monopolist (usually governmental) network operator. In addition to GMPCS satellite networks, the fixed satellite service (FSS) and broadcast satellite service (BSS) networks are also shifting to Internet network architectures to meet steadily mounting user demand for worldwide data transport.(6)

Decentralized satellite-based Internet network architectures raise questions about whether states are indeed capable of fulfilling the requirements for supervision stipulated by outer space treaties.(7) While growing numbers of states liberalize telecommunications and satellite market sectors, exemplified by the GMPCS Memorandum of Understanding, are states also loosening the reins of control over significant sectors of economic regulation? (8)

States' obligations to authorize and supervise space-based activities of non-governmental entities is stipulated in Article VI of the Outer Space Treaty (OST), which states:

> States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or *by non-governmental entities*, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. *The activities of non-governmental entities in outer space, ... shall require authorization and continuing supervision by the appropriate State Party to the Treaty....* [emphasis added] (9)

Is this a problem?

This paper argues that a strict reading of the OST could lead one to observe that the „chaotic" network architecture of the Internet could make it more difficult for States Parties to the OST to exert the commensurate level of supervision over users of international satellite networks that was possible in earlier eras of governmental monopolies and „cable-in-the-sky" satellite network architectures. The emerging Internet-capable GMPCS and FSS network architectures create only „virtual" circuits that network providers do not control. In contrast, circuit-switched „bent-pipe" GEO satellite systems of previous technological generations allowed complete control to the network operator, who authorized each user through circuit assignments and billing, and who could constantly supervise each user's activity on that circuit. Satellites integrated into the Internet's packet-switched network architecture provide pathways for packet transmission that more closely follows the laws of chaos theory than communication treaties. Combined with privatization and sector liberalization, one could conclude that Internet network architectures therefore contribute to the nation-state's loss of enforcement ability necessary to comply with authorization and supervisory obligations stipulated by the OST. The following hypothetical example shows how emerging Internet-based satellite networks pose questions about Article VI.

A Hypothetical Scenario:

Now let's examine how a typical *non-governmental entity* will use a GMPCS Internet-based handset-web browser to conduct transactions:

> Our hypothetical Jane Smith, U.S.A. citizen and California resident takes a flight carrying her GMPCS handset-organizer-Web browser from Los Angeles to Frankfurt, Germany (inside the EU). On the flight over, she enjoyed some of the music she heard on the plane's in-flight entertainment system, and now stuck in traffic at a typical Frankfurt autobahn interchange, she decides to download the song from her favorite MP-3 web site to her browser. Placing the phone on the dashboard so it has a clear view of the sky and thereby a direct link to the satellite(s), Jane selects one of several search engines which quickly finds the desired MP-3 file on a Web server located in Malaysia. A small fee is required and after Jane authorizes the transaction by pressing the „yes" button on the appliance, a transaction takes place using digital cash from Jane's Visa Card account located in U.S. state Delaware to the MP-3 music distributor-retailer's bank account located in Mexico, whereupon the file flows easily over the inter-satellite links to the handset resting on the dashboard of the car just outside Frankfurt.
> At the same time, a small banner ad on the MP-3 web site announces that an improved music player software program is also available for a small additional fee. Jane decides to buy the software which also installs itself on her GMPCS-browser handset, while she at the same time listens to her appliance's electronic voice read aloud the just arrived email from her stock broker trying to contact her from New York. He advises Jane to sell the Deutsche Telekom stock she has been holding, and by

pressing a key on the handset, the sale is consummated. The proceeds from the sale flow directly into her New York account, although it has actually „taken place" only a few kilometers away in Frankfurt.

The traffic hardly moving, Jane also receives an email page from her best friend, also a devoted bingo player. A new game is just beginning on the Bingo Central Web site on a network server located in Trinidad, and with only a $10 ante, Jane is clearly intrigued and decides this is a worthwhile „waste" of her traffic jam time, and indeed, she wins the next game and $200.

Unbeknownst to Jane, the inexpensive MP-3 software also contains a „cookie" which tracks her buying habits, collecting the data for transmission to an online marketing firm with computers in Moldova. After a few days, Jane's GMPCS handset-browser is flooded with email advertisements from a myriad of businesses offering the latest in miniaturized stereo equipment.

Implications

The scenario describes some of the e-commerce activities that Internet users worldwide are already engaged in without the benefit of satellite links. Pornography, gambling, fraudulent business practices, and tax scams are only a short list of e-commerce activities which nation-states find difficult to regulate both within and outside their borders.(10) Given that outer space lies outside the territorial jurisdiction of nation-states only exacerbates the fundamental challenge the Internet-based satellite handsets pose to conventional territorial legal competencies. Further compounding the erosion of nation-state competency to control is the widespread market liberalization of the telecommunications sector.(11)

In short, does the Internet pose a greater problem for nation-state compliance or sector liberalization?
Market sector liberalization has in past proceeded perhaps as much from the state's inability to enforce regulatory controls as from any ideological or policy predilection. For example, Steve Coll's book on the U.S. anti-trust case and settlement with AT&T argues that the most convincing rationale for the U.S. government's action was that AT&T was just too big to regulate as a natural monopoly anymore.(12) Perhaps recognizing the difficulties in administering conventional tax regulations in cyberspace, the U.S. Congress in 1998 passed Senate Bill 442, the *Internet Tax Freedom Act*, which prohibited states from applying any additional taxes upon Internet online transactions.(13) Generally, a requirement to pay a state sales tax on purchases only applies if either the product supplier and/or the customer are located in the same state. The GMPCS Memorandum of Understanding would also underline telecommunications sector liberalization as the preferred policy option when outright control is no longer technically nor economically feasible. But now we are talking not only about the communications pathways, but what is being carried on those pathways, and in the case of e-commerce, it quickly becomes apparent that nation-states are quickly losing the ability to exercise relevant supervisory control over entire swaths of the information economy.

Looking back at the hypothetical example, these transactions could have been carried out (and still could) using conventional terrestrial telecommunications links through network providers licensed by the German and other governments. However, using a

GMPCS handset, and with trans-border handset rights as stipulated under the GMPCS MOU, the user directly accesses the Internet space segment without any data carriage with terrestrial infrastructures.

Implications for the Outer Space Legal Regime

Satellites are already an integral component of the globalizing electronic marketplace. A growing diversity of satellite network constellations (GEO, MEO, LEO) will provide an ever widening range of informational and transactional services to millions of users through Internet-capable handsets and fixed/mobile Internet appliances. In contrast to earlier eras, the space environment is now being used predominately by non-governmental entities operating in increasingly liberalized market settings, where governments target maximizing efficiencies through reductions of regulatory intervention. In effect, space „disappears" as e-commerce conducted over satellite links becomes just another part of the Internet's market web.

As several presenters and participants at both the Perugia ECSL Colloquium and the Unispace III IISL Space Law Conference observed, the space treaties do not, at present, appear to pose a hindrance to the legal expansion of satellite-based e-commerce as governed under other international treaties. The terms „authorization" and „supervision" of non-governmental entities stipulated under Article VI have not been used to regulate, limit or curtail e-commerce or other services being provided through private satellite systems. However, there are some potential points where outer space legal instruments could become embroiled in trade disputes:(14)

- The agreement between authorization and supervision under Article VI and transparency required under most-favored nation status under WTO and GATT trade regulations.
- Consortium satellite systems and taxation.
- Governmental procurement of services and other e-commerce transactions over private satellite systems. Since some Internet packets from any particular message will in all likelihood flow through some satellites, can governments discriminate against those systems they have not authorized nor supervised?

Concluding Observations

E-commerce entails a growing range of non-tangible products and services that will be transacted directly through space-based Internet links. A de-centralized infrastructure such as the Internet poses a myriad of jurisdictional questions. For example, the increasing popularity of MP3 sound files on the Internet point to the growing problem of copyright jurisdiction. The IISL, ECSL, and Professor Boeckstiegel's Project 2000 contributors should be congratulated on their contributions over the last two years in the continuing effort to evaluate the legal and administrative/regulatory relevance of the current legal regime in an environment of increasingly privatized and commercialized space activities conducted across jurisdictional boundaries on space-based Internet satellite systems.

Notes:

1. The figures for e-commerce are notorious for wide variances among market research firm estimates. I have averaged some of the estimates presented at the E-Commerce Conference of the *Muenchner Kreis*, February 1999. Author's notes.

2. Joseph Anselmo, „Booming Internet Spurs Satcoms," *Aviation Week and Space Technology*, January 18, 1999, p. 38.

3. See, „Satellite communications and the Internet: Implications for the Outer Space

Treaty," *Space Policy* 14(1998) 83-88. (Revised version of IISL paper); „Space Telecommunications and the Internet: Implications for the Outer Space Treaty," presented to the 40th Colloquium on the Law of Outer Space, International Astronautical Federation Congress, Torino, Italy, October 1997 (published in the *Proceedings of the 40th Colloquium of the Law of Outer Space*).

4. U.S. Federal Communications Commission, "Establishment of Domestic Communication-Satellite Facilities by Non-Governmental Entities, 26 *F.C.C.2d* 86 (1970) (*Domsat I*); and, 38 *F.C.C.2d* 844 (1972)(*Domsat II*).

5. "Immer noch Tut-Tut-Tut: Die Bonner Regierung verkündete das Ende der Telefon-Not zwischen Ost und West - zu früh," *Der Spiegel*, 15 July 1991, p. 52; "INMARSAT fills Germany's Communications Gaps," *Transnational Data and Communications Report*, September/October 1991 (Source: ITU Teleclippings, December 1, 1991, p. 20); Peter B. deSelding, "Germany Relaxes Satellite Monopoly," *Space News*, March 23-29, 1992, p. 3.

6. For example, recent reports in the popular media have outlined the traffic jams on the „data superhighway" due to exploding demand for multimedia services. I-Beam is a company that proposes to use satellites to directly feed Internet traffic to users' Internet Service Providers, bypassing the terrestrial network bottlenecks. See, www.ibeam.com.

7. *Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and other Celestial Bodies*, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (effective Oct. 10, 1967) [hereinafter Outer Space Treaty]. The other four treaties treat the questions of space liability, registration of objects, rescue and return of objects and astronauts, and an agreement covering activities on the moon and other solar system celestial bodies: *Convention on International Liability for Damage Caused by Space Objects* (1972) , 24 U.S.T. 2389, T.I.A.S. 7762; The Agreement on the Rescue of Astronauts, the Return of Astronauts, and Objects Launched in Outer Space (1968), 19 U.S.T. 7570, T.I.A.S. 6599; *The Convention on the Registration of Objects Launched into Outer Space* (1976), 28 U.S.T. 695, T.I.A.S. 7762; *The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* (1979), United Nations General Assembly Resolution 34/68. Cited from Larry Martinez, „Satellite communications and the Internet: Implications for the Outer Space Treaty," *Space Policy* 14(1998) 83-88. (Revised version of IISL paper.), „Space Telecommunications and the Internet: Implications for the Outer Space Treaty," presented to the 40th Colloquium on the Law of Outer Space, International Astronautical Federation Congress, Torino, Italy, October 1997 (published in the *Proceedings of the 40th Colloquium of the Law of Outer Space*).

8. See, „Memorandum of Understanding on GMPCS now ready for signing - GMPCS continues to make history," *ITU News*, #3 1997, pp. 5-7. Commercialization of space activities has proceeded apace in the areas of space launch vehicles, space remote sensing, space navigation. „WTO's landmark agreement on basic telecommunication services," *ITU News*, #4, 1997, pp. 34-38. While this paper focuses on liberalization of space telecommunication sectors and the GMPCS in particular, readers are urged to refer to articles by Fred Kosmo Note: The Commercialization of Space: a Regulatory Scheme That Promotes Commercial Ventures And International Responsibility. 61 *S. Cal. L. Rev.* 1055 (May, 1988). Source: Nexis-Lexis; see also, Kunihiko Tatsuzawa, „Policy and Law in Space Commercialization," in K. Tatsuzawa (ed.) *Legal Aspects of Space Commercialization*, (Tokyo: CSP Japan, Inc., 1992), pp. 10-31.

9. *Ibid.*

10. For example, the hypothetical raises issues of legal jurisdiction in the following areas:
Data Protection/Privacy: In our hypothetical scenario, it is clear that although Germany as an EU member subscribes to the EU Data Protection Guidelines, that is of little consequence to Jane as she accesses her Visa card account and transacts a purchase with the MP-3 retailer outside the EU.

Copyright: Although Jane is on German soil, no royalty fee is necessarily paid to the copyright holder of the music as would be normally required under German law.
Taxation: Again, despite the fact that Jane is conducting a purchase and using the purchased item within the boundaries of German tax jurisdiction, no taxes are being assessed or paid. Nor would the German government have any realistic means to know that such a transaction even took place.
Gambling: The German government's jurisdictional competence to regulate gambling also falls by the wayside in the example of the Bingo game conducted through the Internet from an off-shore network server.

11. See, Peter Malanczuk, „The Relevance of International Economic Law and the World Trade Organization (WTO) for Commercial Outer Space Activities," *Proceedings* of the 3rd ECSL Colloquium on International Organizations and Space Law, Perugia, Italy, 6-7 May 1999, pp. 305-316.

12. Steve Coll, *The Deal of the Century: The Breakup of AT&T*, (New York: Atheneum, 1987).

13. U.S. Congress, *Internet Tax Freedom Act*, S 442, 105th Congress (http://thomas.loc.gov/cgi-bin/query/C?c105:./temp/~c105PBBuQU).

14. See, Frans G. von der Dunk's excellent work in this area, including his submission to ECSL Colloquium, „International Organisations as Creators of Space Law: A Few General Remarks," *Proceedings* of the ECSL Colloquium on International Organisations and Space Law, 6-7 May 1999, Perugia, Italy, pp. 335-343.