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"WHEN SPUTNIK ORBITS GENEVA": LEGAL REFLECTIONS ON WTO GOVERNANCE IN RESPECT OF COMMERCIAL SPACE ACTIVITIES

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ABSTRACT

The article is a self-effacing endeavor to behold a synthesis of 2 varied themes, utterly dissimilar in façade and assorted in action. "WTO" and "Space"! But the confluence was inexorable. As one delves into the unfathomable ethical core of WTO and human space activities, the variations fall to bits. The juxtaposition reveals an implausible symmetry between the two. In the blueprint adopted, space activities as well as its jurisprudence is made to traverse a trade-ordeal and afterwards brought out unscathed. The stir up from this success showed the way to further jurisprudential echelons and thereby sought to perceive WTO law as a derivation of the aspirations for a *world public service law*, of international law norms, and of certain space law making process. By a perusal of the apposite agreements, though frugal, the institutional congruence of WTO with space activities is studied and thereby the closing stages are composed. The paper shoves the perpendicular expansion of international trade law.

Commercialization", formerly a matter of tabloid caption, has turned out to be the catchphrase in the space segment. More than a few solid as well as less palpable factors have made a payment to this asymmetrical change. One need not be discontented for calling it an "asymmetry". But what is witnessed is, the entire space activities changing its trajectory, from "research" to "markets". Advancement in space technology, routine access to space, and above all a changing global order sucks up credit to this.

It is astounding to note that the waves surged in by commercialization have sneaked into diverse realms of space activities where its entry was least predicted. Aside from in-progress space activities like launch, remote sensing, telecommunications, tourism and transportation, and space station certain new fangled and probable activities like extraction of solar energy and lunar and asteroidal mining are likely to receive a commercial skin.

Albeit sounds awe-inspiring and amazing, what thwarts its realization is legal haziness rather than technological competence. These activities fetch by the side of it legal issues relating to national sovereignty, permanent sovereignty over natural resources, dissemination of data, proprietary rights over such data, service related issues, regulation of corporeal actions, investments, standardization *et. al.* The absence of a regulator may still exacerbate the state of affairs and any impediments to the free flow of trade in a globalized economy are certain to result in political conflicts. This bestows a new acuity about space activities, which no satellite, planetary mission, or even Hubble telescope could give.

All these left space sector with a query to brood over. "Who needs to regulate and set trade standards for space commerce"? The answer ought to have been found by now!

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When human space activities that were exclusively characterized by the focus on exploration and research were replaced by commercialization and growing participation of private industry, economic applications of space research became its objective instead of by-products. "Space Law", the soft sentinel of space activities who speaks the language of benefaction and giving out, stood vulnerable before those leviathan deals. The swelling up of such dealings betrothed in the mighty regulations of international economic and trade laws to feed the kitty into the realm of space law. This also facilitated the involvement of international economic organizations like the World Trade Organization (WTO) with law-making and dispute settlement functions into the cosmic sphere.

In the present article, an unassuming attempt is made to perceive the applicability of WTO jurisprudence over space commerce. It is configured by starting with a philosophical analysis of the WTO institutional gamut and its congruence with space jurisprudence. Norms set by the agreements on services, intellectual property, technical barriers, subsidies, government procurement, investment, dispute settlement, import licensing et al. of the WTO package are dealtwith in the second part.

Part I

I. A TRYST WITH THE WORLD TRADE ORGANIZATION….

As the successor of a surprising institution[1] (GATT) of abnormal birth[2] and born out of a general lack of expectation owing to the subjection of its predecessor in the role of a trade protectionist, WTO attempts to remedy its predecessor's birth defects. But this at no way asserts the view that GATT was a breakdown[3]. It has been a great deal successful in the diminution of tariff barriers for which it was fashioned. But when human ingenuity, well propped by certain political gimmicks, devised subtler and explicit ways to inhibit the trade flows of competing goods, an institution like GATT, wrought to reduce tariff barriers stood susceptible[4]. So, what time required was an institution, which could cope with and be on familiar terms with this part of the circumstances[5]. Born in Uruguay and living in Geneva, WTO rather than as a mere tariff regulator, exerts a pull on

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the regulation of Quantitative Restrictions and non-tariff barriers to trade.

The finest identification of WTO would be as the "legal institutional foundation of the multilateral trading system". A multilateral trading system needs predictability for the accomplishments of its goals[6]. WTO ensures that predictability by imposing conditions and thereby making it very difficult for member governments to change the rules of the game at whim[7]. WTO's *formula* is to proffer effectual and balanced negotiations and if things go out of hand, then to offer a constructive and fair outlet for dealing with disputes. It is a rule-based system where a lengthy and complex set of agreements that spread over a wide-range of measures act as the legal source. This legal framework is knitted with a number of fundamental principles that run as a thread through these documents. The principles like "the Most Favored Nation treatment"[8], "the National Treatment"[9], and "consensual decision-making" bolster this multilateral trading system. Considering its role in this trading system, WTO's jurisdiction is determined on the basis of its goals and the values upon which it is implanted and not based on an exhaustive list of areas where its variety of Agreements apply.

It is the member countries that drive this cart. The wheels of the cart are the rules negotiated by them and ratified in their parliaments. So these rules are based on domestic political procedures that have the legitimacy prescribed by domestic constitutional arrangements and are applied to the "management of the trading regime"[10]. It is a sort of "embedded liberalism" where trade liberalization is embedded within a political commitment. But in this framework riders have to be wary and shall not move away from their commitments. And if they move away, they have to confirm!

II. THE ETHOS OF SPACE JURISPRUDENCE

Space jurisprudence sprouted and came to light as an order at a time when the new fangled technology was posing massive challenges and bizarre situations before the humanity, and it looked as if this human accomplishment might rip the world apart. So at a time when mankind ought to have rejoiced they were put under the apprehension of a forthcoming devastation. The legal edifice that has subsequently assumed form reflects this mixed human feelings of anxiety and pride; the anxiety of yet another extermination and the pride in human scientific excellence. Numerous factors, political, economic, and physical have imposed the different choices in brewing a legal framework. In this exertion there were many obscurities before the framers. Obscurities as to, the nature and temperament of the law required, the fundamental principles that have to buttress the edifice, adequateness of such principles and much more. But in the face of all these, rules took birth; rules that were realistic, that were humanitarian, and bearing decisiveness.

"Sheeps in a Village Commons"

Perhaps there is no elegant, at the same while cogent, manner to explain the formation of space jurisprudence and thereby to deduce its philosophy than by doing it metaphorically. So reliance is made on a metaphor of shepherds grazing sheeps in a village commons! (Sheeps typify the "satellites"; shepherds the "states"; and village commons the "outer space"). Numerous problems crop up from the use of the commons. 1) Harm caused by the sheeps to the commons (this symbolizes the debris in outer space), 2) Damage by one sheep to another sheep (collusion and frequency interferences between the satellites, and 3) At times, the sheeps stray into the private land adjacent to the commons (satellites falling down into a country and direct broadcasting from a satellite into a country without that country's permission).

Here, one and all own the commons and any person could use it. Unfortunately, there is no policeman with enforcement powers for the village, albeit there is a village headman (village headman here is the United Nations). Nevertheless, the villagers stood cohesive under the headship of the village headman. Their outlook was of amity, cohesion, and sorority. At the same while, they were apprehensive as to the botching up of the commons. So the sheep owners made arrangements to spell out what they could each do and what they would agree to be liable. Thus, each sheep owner would own, control, and be liable for each sheep put on the commons (this symbolizes the five space treaties). Aside from these agreements, the shepherds bound themselves by the directions given by the village headman (Resolutions and Declaration of the United Nations), and certain moral principles like, the commons is the common province of the whole villagers, it should be used for peaceful purposes and in the interest of whole village etc. (customary space law).

The villagers subsisted in tranquility under the tender at the same while austere supervision of the laws, until they began to do business with the commons!!!!

* * * *

When Sputnik was hurled to orbit, it was the genesis of a new epoch for humanity. Outer space was all set for human exploration. Cosmos was looked up on as a commons, which belonged to everybody and could be used by anybody. The law, which preceded man there, spoke the language of patronage and altruism. In its earlier stages, it was the "law of co-existence" and in its later stages, it was that of "co-operation"[11]. The spirit of space law lay in ensuring freedom for states in outer space counter balanced by the demands of common interest of mankind as a whole. The thread that ran through the entire body of space law was the inclusive access to and inter-dependant interests of all participants in space activities. Here, all problems were addressed to the community of mankind and hence, all speculative, imaginative, and ultra-legalistic notions gave way to a pragmatic and sociological determination[12]. All this time, this state controlled and state-centric governance remained ample enough for the governed.

It is said, "tides do turn eventually" and space sector did take such a turn towards commercialization that to some extent sent a shudder through its very ethical base. "Market forces" began to seduce and soon became the cynosure of the players. Private participants were given a guard of honor. The state-centric space jurisprudence, written in the language of compassion, friendship, altruism, and solidarity looked at the out of the blue intrusion of the "unknown" with surprise and fragility. When the hustle and bustle of the world trade became mundane in the space segment, space activities were shunting bit by bit from "co-operation" to "competition"[13]. But the governance still is sitting on the fence to shed the garb of "co-operation".

At the moment, despite its pretensions[14], space jurisprudence is beleaguered to reconcile with the current forces of commercialization!!

III. SPACE ACTIVITIES IN THE WTO TRAJECTORY

Since "Spacebiz" was an outlandish phrase in the space jurisprudence during its initial days, the prevailing GATT regime on tariff regulations never laid hands on space affairs. Even if space commerce was not in a bursting tempo, it had started catching light in many "spacetech" nations[15]. The echelon of competition was somewhat near to the ground. This in no way avows the view that those dealings were in every respect consecrated. Even then space

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powers were following many trade impeding measures, both tariff as well as non-tariff, from price-cutting to injurious subsidies[16]. May be the lesser magnitude of those activities or the subtle impact of it to the market kept those deals out of sight. But with the efflux of time as space business thrived, all the traits of the "business" in tandem with its evils began to raise its hood in the space segment. The "fair trade" mantra began to resonate even in this sector. At this juncture, there began to transpire the need for a regulator and watchdog for these gargantuan deals.

The WTO, well shored up by its functional role and acting upon its mandate of "trade expansion through progressive liberalization", took charge of the situation. Telecommunication services, one of the most demanding and vital sectors whose revenue runs into hundreds of billions of dollars a year, was the first space related activity to be swallowed up by the WTO. But owing somewhat to its "menu of options" approach[17], the negotiating group on telecommunications cannot reach a consensus in the Uruguay Round but appended an annex to the General Agreement on Trade in Services (GATS). But later on, through Post-Uruguay Round negotiations, protocols, and reference papers, WTO has incarcerated the telecommunication service sector and concluded the Agreement on Basic Telecommunication in 1998[18].

One question that sounds pertinent in this context is regarding the justifiability of this linkage.

The issues on the subject of the linkage of more than a few topics to WTO have been raging and have somewhat become a big challenge for the institution[19]. From these fuming "linkage issues", that even to an Organization with a specific and well defined mandate, one could make out the vitality of the Organization. It is unquestionably true that WTO cannot be used as a Christmas tree on which to hang every good cause that might be secured by exercising trade powers[20]. But it is submitted that such a linkage quandary does not crop up in case of space activities.

When the international space activities tripped into the sphere of the regulatory framework of WTO, it just magnetized those activities. The tale goes in this manner-The telecommunication boom facilitated a good deal in the steps towards a globalized order and in a globalized society it became the best ever-rising market with high implications to the routine life. Appreciating the import and high potential of this sector in the diverse levels of economic progress, and a prudence to shield such a sector from all trade impeding and discriminative measures that the Parties decided to include telecommunications into the Uruguay Round negotiations. The rest is history.

WTO is bestowed with a legal accreditation for the induction of telecommunications in tangible treaty language in the Agreement Establishing the World Trade Organization. Article II doles out the scope of the Organization in the following words, "The WTO shall provide a common institutional framework for the conduct of trade relations among its members in matters related to the Agreement". It also empowers WTO to conduct negotiations on matters concerning member's multilateral trade relations[21]. Further, the Agreement accentuates the intention of the Parties to enter into reciprocal and mutually advantageous agreements to eliminate all kinds of barriers and discriminatory treatment in their trade relations[22].

An atypical argument that turns up time and again is that "space trade cannot be treated at parity with other trade activities and for this reason, its linkage with WTO must be stymied". Those critics might be enthused by the sacrosanct ethos of space jurisprudence like common heritage of mankind, non-appropriation, equitable access and sharing of benefits by "have not" states et.al. The depiction of WTO as a trade protectionist, tool of lobbyists, and undemocratic organization might have fanned the flame of their judgments. It is certain that a mere textual quote cannot mollify them. And certainly they will be obstinate upon their conviction that ethos of space jurisprudence cannot go hand-in-hand with a multilateral trade regime. Accordingly, with paramount reverence and genuflections before their bearings, as it opens a new vista of thoughts, a modest effort is made to proffer more credible arguments.

As long as WTO's institutional or legal carton does not prescribe an ordeal for new entrants that could fetch them unscathed, reliance is to be made on other options. Philip M. Nichols[23], in 1996, in the context of the WTO linkage with transnational bribery, prescribed a four-tired test and demonstrated it fruitfully. Since it sounds effectual, it is applied to the present context. The test goes as follows:

1) *The prospective issue must fall with in the legal jurisdiction of the WTO*

2) *The issue must substantially affect trade*

3) *The WTO must be able to enforce any requirement that it makes of member governments with respect to the issue*

4) *The issue must require international co-ordination*

A propos the first test and perhaps the most important, conceivably the best way to launch our quest is with the basic Agreement Establishing the World Trade Organization (herein after "The Statute"). As seen earlier the phrasing of the Agreement gives WTO a positive nod to deal with all those matters that thwarts trade-flow in a multilateral trading system, provided those deal with the subject matter in the Covered Agreements[24]. But this does not take one far. But an integral limb that has been and is quite decisive in smartening WTO and drawing up the boundaries of its behavior is the Dispute Settlement Body (DSB). Any WTO member who believes that its trading partner is not living up to its commitments under the Rules could resort to the DSB[25]. The DSB is empowered to deal with any dispute brought before it in pursuance of the Covered Agreements. So it is undeniable that member states will bring only that disputes before the DSB that the WTO is empowered to deal with. It will be fascinating to note that even before its first anniversary, the Members have designated WTO as an apposite forum to address their pertinent space related issues. The complaint concerning *"Measures Affecting the Purchase of Telecommunications Equipment"* was filed by the European Communities against Japan in 1995[26]. This was later on followed by *"Laws, Regulations and Practices in the Telecommunications Sector"*[27] against Korea in 1996, and a third one against Japan on *"The procurement on Navigation Satellites"* in 1997[28]. The DSB has amicably settled all the three disputes even before the constitution of the Panels[29].

In all the three cases, irrespective of the character of the dispute, it touches the fundamental principle of WTO that of non-discriminatory trade[30]. So as mentioned else where in this article, WTO's jurisdiction is to be determined on the basis of its goals and the values upon which it is implanted. Certainly, it is true that WTO can only act as per the functions bestowed upon it by the Covered Agreements but it has the power to exercise these functions to the full extend, irrespective of the realm, as far as the Statute does not impose restrictions upon it[31]. As an international organization, governed by the principle of specialty, WTO's purpose is the creation of market conditions conductive to individual economic activity in national and global markets and to ensure a secure and predictable multilateral trading system. In pursuance of this purpose, if WTO regulates space

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markets, there is nothing in it that is exasperating for the erudite critics.

To corroborate this point, the author would modestly tread the track set by his predecessors of analogizing with the law of the sea[32]. In the context of the implementation of part XI of the United Nations Convention on the Law of the Sea, 1982 (UNCLOS), Section 6 of the Agreement Relating to the Implementation of part XI of the Convention asserts that the production policy of the International Sea Bed Authority shall be based on the subsidies provisions of the General Agreement on Tariffs and Trade, its relevant codes, and *successor or superceding agreements* with respect to activities in the seabed and ocean floor and subsoil thereof. This assigning of power shows the futuristic and pragmatic approach of the negotiators. Their rationale was to have a "governance" for the commercial exploitation of the seabed and ocean floor and subsoil based on sound commercial principles[33]. It was the most prudent act on their part to entrust the function to the most pertinent forum to regulate an issue like "production policy" rather than trying to fashion a parallel force within UNCLOS that might have stood against many national commitments to GATT[34]. Here one needs to commit to memory that, like the law for outer space the law of sea also is swathed in many revered principles like non-appropriation, peaceful use, common heritage of mankind, freedom of research and investigation etc. Assigning of certain functions to a pertinent body has neither tarnished the regime nor curtailed its general functions.

The second test of acceptability to WTO is that of the candidate's *substantial relationship with trade*. This test could be initially dealtwith in a normative way. That is whether norms governing space affect trade or whether trade affect the realization of those norms. When one considers the question on the subject of the "normativity" in space jurisprudence, the chore ahead of him/her is more drawn-out than detecting the atoms in a nebulae. The seeker will spot himself/herself in the midst of a horde of factors that wrought and fostered the jurisprudence for space. The "norms" took shape from escalating technology, concerns of national sovereignty and its accompanying doctrines, national security, awareness of global interdependence, and on the up commercial opportunities. It is not the author's intent to portray "concept formation" in this context. At this moment in time, considering the issue at hand, it is submitted that norms like non-appropriation, common heritage of mankind, international co-operation, peaceful uses of outer space, peaceful co-existence, and equitable sharing of resources . . . haloes and garnishes space jurisprudence[35]. In the list of these norms, if certain market principles are added it possibly will not be either a wayward statement or outspokenness. But whatever be the pathway through which the space jurisprudence is treading, it cannot shed its fundamental ethics and aspirations. Hitherto and in the future, it will have to press on with the banner of "*benefit to mankind as a whole*".

Now the decisive question is the reconciliation of these norms with an institution like WTO. As the icon of the current multilateral trade regime, the WTO is buttoned up and its entire web is cagily entwined in the filament of multilateral trading principles. This multilateral trading system is footed on the theory of "comparative advantage"[36] developed by classical economists like Adam Smith and David Ricardo[37]. As per this theory, countries prosper by taking advantage of their assets in order to concentrate on what they can produce best. This attains fineness only in a "free market", though this applies somewhat to domestic markets. And in an ambience of liberal trade policies that allow the free flow of goods, services, and productive inputs rewards come in the form of best products, with the best design, at the best price. The paramount goal of this is the avoidance of a protectionist *summum malum*-the situation where domestic, social or economic pressures lead some states to increase or reinstate barriers to trade, thus triggering a competitive reaction in kind by other states and eventually a "race to the bottom" that is disastrous to the global economy[38]. The non-discrimination principles like the most favored nation treatment and national treatment smooth the progress of the operation of this system.

Upon a dissection of these norms, it turns out to be more perceptible that normativity in space jurisprudence is a blend, as baptized by Judge Mohammed Bedjeoy, of "classicism" and "revolutionism"[39], where principles like "state sovereignty" remains with the classicism and ground-breaking one's like "common heritage of mankind" (CHM) stands as revolutionary. It is definite that the notion of CHM, as the expression of the need to promote the general human good, epitomizes the philosophy of space jurisprudence[40]. If viewed in the perspective of economic and market interests, it speaks of securing economic benefits for every one regardless of their contribution to space exploration[41]. In this context, if the theory of comparative advantage is assessed, the Smithian and Ricardian model attempts to enable countries to specialize in their comparative advantage good and trade them to other country so that every one in both countries benefit. In a global market this could fetch more constructive results[42]. So if the end-results of both principles are evaluated in the present market scenario and jurisprudential status, then the normative construction is in an impeccable symmetry. Whereas "spatial norms" trudges in a positive manner by pushing for common-good, "trade norms" through mediums like WTO ensures predictability to trade (as it is vital in a free market) and foils any scope of pursuing capricious, discriminatory, and protectionist trade policies by those in trade and thereby being negative in approach ensures common welfare in a multilateral trading system.

Now if the question "whether norms governing space affect trade or whether trade affect the realization of those norms" is put forward, then if taken either way the answer comes in the affirmative.

In the wake of an increasing number of substantive quarters of space activities becoming subject of the WTO's covered agreements, apart from a normative approach a textual analysis seems pertinent. This is done in the second part of this article.

The third test of acceptability is a propos WTO's ability to enforce any requirement that it makes of member governments with respect to the issue. This test needs to be called upon only if the candidate makes the grade in earlier two tests. This is for the reason that the question of laying down requirements and of its enforceability transpires only if the issue in question falls with in the jurisdiction of WTO and substantially affects trade. Since outer space related activities have successfully emerged of the first two ordeals unscathed, WTO could enforce the requirements that it makes of regarding space related activities.

The question of enforceability comes in two ways. One is the enforceability by the Dispute Settlement Body of its decisions and the second one is certain minimum standards on enforcement. But, when WTO will exercise this function depends on the performance of obligations that have been undertaken by space savvy member nations. In the course of their spatial trade in goods, services, and intellectual property, if they fail to comply with their commitments and thereby causes injury to another member, the aggrieved member could access the mighty dispute settlement mechanism, which has its own system of implementation and enforcement. Apart from this, the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) prescribes certain minimum standards regarding the

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enforcement of intellectual property rights by the member states. So for the trade in all intellectual properties concerning space, members are obliged to go behind these minimum standards[43].

The fourth test, "the issue must have international co-ordination", albeit sounds simple is somewhat quizzical in application. Unlike the other three tests this one does not require for any kinship with WTO. And this makes it trickier. But if viewed from the angle of WTO, which will have to acquiesce the entry, the test captures the dimension of "a need for international co-ordination to resolve the problem at hand". This indubitably will be a no-nonsense approach. So what needs to be tested is that whether predicaments in space trade calls for international co-ordination for its unraveling.

If the nature of space activities is concerned, they are the prototype delineation of international co-ordination. This might be because of the tremendous scientific as well as economic and societal benefits that could be derived from space activities. Environmental monitoring, natural resources management, Global Navigation Satellite Services (GNSS), capacity building etc. are all areas that are witnessing a towering echelon of international co-ordination. When the commercial paybacks are supplemented to this then it is certain that it will have the need of a much higher degree of international co-ordination.

The Dust Settles!

"WTO" and "space", not known to be a "bread and butter" sort of combination, if depicted as a hodgepodge and generates spiky criticisms from various spheres, the advocates of this blend need not be bowled over. Nearly all of such bearings owe to a prejudice that WTO is bound for as the sole watchdog of space activities. But in this milieu, it is submitted that the chore undertaken in the preceding paragraphs is not intended to accentuate that WTO is going to fill up the vacancy of the policeman of this "village commons". Instead, the raison d'être is to lay bare the normative congruence of the legal personality of WTO with space jurisprudence. Its symmetrical outcome neither does need to scare the critics, as WTO, in the regulation of commercial space activities, will not act *ultravires*. Like all other international organizations with legal personality, WTO also has its own behavioral attributes and temperaments. These attitudes and temperaments were fed into its legal personality inorder to perform certain specific functions. Only those organizations with the same kind of legal personality and temperament could fulfill those functions (unfortunately there is no other). Even its *modus operandi* depends on the objective it has to achieve. In the case of WTO, it has a mission-a mission to eliminate all sorts of barriers to trade and to ensure predictability in a multilateral trading system. In pursuance of this objective, the method adopted was of an "embedded liberalism" coupled with a consensual decision-making and legal sanctions. The choice of this depended to a large extend on the prevailing political and social pressures.

It is without a shred of doubt that space business will also have to go on in a free market. Since most of the space savvy nations with the exception of Russia are members to the WTO[44], and have undertaken commitments in this regard, any trade hampering or unfair practice, in the course of space trade, on their part will invoke the WTO law.

IV. WTO LAW AS A SOURCE OF SPACE LAW

Contemporary debates on the sources of international law more often than not start in on with a reference to Article 38(1) of the Statute of the International Court of Justice[45]. Though meant for the Court[46], general or particular treaties; custom; general principles of law; and judicial decisions and teachings of highly qualified publicists still serve as the major sources of international law and its various branches including space law. In the present context, the Marrakesh Agreement establishing the World Trade Organization (WTO Agreement) is a "particular" international convention within the meaning of Article 38(1)(a) as are the series of annexed additional agreements and hence could straightforwardly get qualified as a source of international space law. But considering the composite treaty character of WTO and the uncanny "call for" for law as a result of space activities, the "source arguments" are not taken too simplistic. So it appears that space jurisprudence must be a purveyor of laws with an everlasting reserve. The demand at times may be rather bizarre.

In order to cope with the situation effectively, what is required is to identify every kind of law that might be germane to the given circumstances and to establish its linkage with space activities[47]. Such a "purposeful approach" will broaden the gamut of space law. But the exercise will be complete and constructive only if the chosen law is normatively symmetrical with the ethos of space jurisprudence and a disparate blend could also prove to be fatal. If this is accepted as an "evaluation factor", then WTO jurisprudence could attend to the calls from space sector.

Another way of looking at the sources is "as the legal forms used in establishing and the progressive development of space law"[48]. A cruise through the *seven stages*[49] in the development of space law as narrated by C. Wilfred Jenks is the finest validation for this proposition. Among the various stages, in the sixth one, he has proposed *a law of world public services* as a source of space law. Forecasting the proliferation in global communications, meteorology, navigation, and other scientific advances, Jenks envisaged a set of regulation for these activities based on the principle of "public utility". His intent was to foil the perpetuation of an oligopoly in space services. Such an application of the *public utility principles* to space services should negotiate for ownership of the space segments of joint ventures, equitable contracts, availability of services on an equal and non-discriminatory basis, patent arrangements, and the like[50]. But to accomplish this, says Jenks, "there must be a responsible process of decision-making, settlement of disputes, and securing compliance with decisions".

Now the situation has matured much beyond what an intuitive thinker like Jenks has envisioned. Rather than a mundane public services law, what time calls for is a *super law*. At this juncture, if viewed through the perspective of WTO law, the situation gets enfolded in a new adaptation. The WTO law, coated in the principles of non-discrimination and equitable access with its binding commitments on communication services, intellectual property, imports licensing, subsidies, and the like could be a superior reflection of the *law of world public services*. A transparent decision-making and its binding nature add reliability to its operation.

When space law recognizes WTO law as a source, its horizons robotically get broadened. But the expression "WTO law" has a wider connotation than it appears. Albeit the covered agreement are the main source of WTO law, even at times, the Dispute Settlement Mechanism under WTO might go for Article 38(1) in search of law. This fetches the GATT decisions, reports of WTO Panels and Appellate Body, and the teachings of the highly qualified trade law publicists into the sphere of international space law (all by virtue of Article 38(1)(d)). This may stir up a contrary view that the WTO Panel and Appellate Body report are not judicial decisions with in the meaning of

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Article 38(1)(d). But it is modestly submitted that what Article 38(1)(d) points out is *precedent*. Because from the phrasing of Article 38(1)(d), *"judicial decisions.... as a means for determining law"*, it is explicit that by *"judicial decisions"* what is indicated is not any jurisprudence but precedents of the decision making body[51]. Article 3(2) of the Understanding on the Rules and Procedures Governing the Settlement of Disputes (DSU) will rationalize the application of Article 38(1) by the DSB[52]. It says, " The purpose of dispute settlement is to clarify the provisions of the WTO Agreements in accordance with customary rules of interpretation of public international law".

Part II

V. COVERED AGREEMENTS VIS A VIS SPACE ACTIVITIES

The Covered Agreements[53] constitute the integral limb of WTO. These Agreements blanket a wide range of *quarters and measures* related to trade barriers, both tariff as well as non-tariff. But the readers should not take this as the *jurisdictional benchmark* of WTO. It is easier said than done to envisage the character of the Covered Agreements because of its intricate and exceptional nature. Still the logic behind these Agreements could be perceived as that member nations shall not employ any trade hampering measures by way of the subject matters in the Covered Agreements. But Covered Agreements are not mere spelling out of the trade barriers that could hinder the trade flow but they also expose the probable areas where this could be applied *but not exhaustive*.

When outer space related activities are pooled into the free market, on account of its high potentials and all-embracing applications, partakers possibly will employ many trade impeding measures to tighten their belt over this industry. If such measures fall within the ambit of these covered agreements, then WTO, by virtue of the Member's commitments, can exert a regulatory pull over such dealings. This part of the article attempts to see the scope of the Covered Agreements vis-à-vis space activities.

The General Agreement on Trade in Services (GATS)

The General Agreement on Trade in Services (GATS) is a mollycoddled child in the WTO family and consequently, it stands odd in comparison with other agreements[54]. This Agreement has its say in all forms of international trade in services. In other words, the Agreement aims at creating a credible and reliable system of international trade rules ensuring fair and equitable treatment of all participants and promoting trade and development through progressive liberalization[55].

In the context of space activities, although telecommunications now fall within the purview of GATS, and at the same while allowing for the mounting number of space services, an attempt is made to tot up the germane space activities, in progress and probable, that the GATS may address.

In the first instance, it is the telecommunications, now in the list of the specific commitments of most nations, which is to be toted up. Owing to the wider connotation of the term "telecommunications", many related space services like navigation, telegraph, telephone, telex, and data transmission will find place under the GATS jurisdiction (By virtue of Article 3 (a) and (b) of the Annexe on Telecommunications). Other space related services are launch, leasing, transportation (this includes tourism and shuttling services), maintenance services (retrieval and repair of satellites, and orbital fuelling), and expert services (movement of natural persons). Along with these space services, services like banking, financing, consulting, and insurance may find secondary application to space activities.

To be under the GATS, a particular service has to be supplied on a *commercial basis* and *in competition with* other service suppliers[56]. If any of the aforesaid services are supplied while exercising a governmental authority it will be excluded from GATS[57].

Unlike the supply of goods, the supply of services moves through 4 modes. Aside from the cross-border supply, it moves by way of consumption abroad, commercial presence in the consuming country, and movement of natural persons[58].

Regarding space services, for telecommunications, the first and the third modes are most significant. To illustrate, for services like *call-back, calling cards and telemedicine* it is cross border supply i.e. services coming to the consumer and secondly, for effectively serving the national telecommunication market of a country, a commercial presence is needed[59]. Whereas services like launch and leasing will pass through the second mode (consumption abroad), services of experts will resort to the fourth mode (movement of natural persons). But going by "territorial presence" as the benchmark to determine the supply of services, in-orbit services may find it difficult to get qualified. When the question of retrieving, fuelling, and repairing of satellites in orbit comes, neither cross border supply, nor commercial presence, nor movement of natural persons can supply services. Perhaps this could be measured as "consumption abroad", the second channel, under Article I (b). But what Article 1(b) asserts is *supply of services in the territory of one member to the service consumers of any other member*. But if the expression *in the territory of a member* is treated as synonymous with the *source of the service*, then the ambiguity will become paler.

But in place of falling back on such a constricted and far-fetched validations, it is better to behold the interpretations proffered by the WTO's DSB in the context of service supply. This exercise assumes significance because in GATS, determination of whether a measure is covered by the GATS must be made before the consistency of that measure with any substantive obligation of the GATS can be assessed[60].

In *EC Banana III*[61], the Panel in the context of *a priori* exclusion from the scope of GATS observed, "no measures are excluded *a priori* from the scope of GATS as defined by its provisions". Instead the Panel held, "the scope of the GATS encompasses any measure of a Member to the extent it affects the supply of a service regardless of whether such measure directly governs the supply of a service or whether it regulates other matters but nevertheless affects trade in services". Further in Article 1(3)(b,) services are defined as "any service in any sector except services supplied in the exercise of governmental authority". This interpretation will take the *criteria* a great deal further from "territorial presence".

The GATS in its very first clause declares that the Agreement applies to measures by members affecting trade in services. So any measure taken by any WTO member that affects space services would be dealtwith by GATS. The Agreement, later explains that *"measures by members"* include measures taken by non-governmental bodies in the exercise of powers delegated by government authorities[62]. This invites more attention on account of the fact that most of the in-orbit services are offered by private entities[63]. GATS requires members to ensure the observance of its obligations and commitments by the non-governmental entities and take reasonable measures in this regard. This clause makes WTO members to some extent responsible for the act of its non-governmental entities. This clause is in perfect equilibrium with the principle enunciated by the Outer Space Treaty that state parties shall bear international responsibility for national

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activities in outer space including those carried on by non-governmental entities and such activities shall require continued supervision and authorization by the state party.

Another GATS's general clause that is worthy of attention in the context of space activities is the one on security exceptions (Article XIV *bis*). Members are given the freedom to take on certain measures a propos the supply of services in the interest of their national security. This provision may have an off-putting impact, when viewed in the light of certain navigational services with a hub on military as well as civilian activity. A ciphering from their part of the navigational signals on the pretext of national security is likely to put the users deprived from the benefits[64]. But this off-putting impact, to some extent, ebbs as a result of sub clause 2 of Article XIV *bis*, which requires any such measures taken under this clause to be reported to the Council for Trade in Services *to the fullest extend possible*.

The part on specific commitments and fourth protocol on telecommunications of GATS, owing to the enormity of the task, is set aside for a later research paper. What is intended here is only an appreciative scratch of the surface.

As a peroration, a provision in the general clauses that addresses the specific commitments of members seems pertinent. Article VI doles out a *service rendering standard*. That is, even in case of sectors (including telecommunications) where specific commitments are given, measures of general application must be administered in a *reasonable, objective, and impartial manner*. To ensue this the Agreement has built-in certain effectual transparency provisions.

Finally, form the perspective of telecommunications one greatest advantage of GATS is that the negotiations are carried out with specific focus for each sector. This is unlike "goods negotiations" with no special interest in a particular product. So there is less danger of protectionist capture by vested interest.

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) [65]

The TRIPs Agreement introduced intellectual property rules into the multilateral trading system. The level of world intellectual property protection was put on a pedestal by this Agreement by specifying certain minimum standards. TRIPs requires member states to slot in certain specified norms and rules into their national legal systems and enforce the national law. In the present milieu, for the protection of outer space related intellectual property rights too, the minimum standards of TRIPs must be followed.

As per Article 7 of TRIPs, for a right to fall within the ambit of TRIPs protection and enforcement it must satisfy 5 criteria. They are: 1) it should promote technological innovation, 2) should transfer and disseminate technology, 3) should be of mutual advantage to the producers and the users, 4) should be conductive to social and economic welfare, and 5) should balance rights and obligations.

If the nature of rights conferred on space related activities and its impact on society are measured, it seems that it goes in consonance with and accomplishes all the objectives enshrined in TRIPs. It is beyond doubt that advancement in space technology promotes technological innovation, which in turn is transferred and disseminated through bilateral technology transfer agreements between space agencies. Rights bestowed by telecommunications serve as a typical example of rights, which is of mutual advantage to the producers and users. Above all space activities are and will remain highly conductive to social and economic welfare.

In the light of this, the legal protection of inventions made in zero-gravity, protection of raw data and space craft designs, satellite trade marks, data submitted to governmental and non-governmental agencies, and controlling anti-competitive practices in spatial contracts, the minimum standards stipulated by the TRIPs Agreement demands meticulous compliance by member countries.

The Agreement on Technical Barriers to Trade (TBT Agreement)

This Agreement requires WTO members to ensure that technical regulations, voluntary standards, and conformity assessment procedures do not create unnecessary obstacles to trade. It also calls for a harmonized system of standards on as wide a basis as possible, encouraging all standardizing bodies to play a full part in the preparation of international standards by the relevant international bodies, including the ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission). To ensure harmony in this regard, the Agreement has adopted the "Code of Good Practice for the Preparation, Adoption and Application of Standards"[66] (herein after the "Standardization Code").

It is in the context of this Code that the space activities get to the limelight. Standards are imperative in the space industry not only in the context of goods but also in services. Though the TBT Agreement is located in the WTO package as an Agreement on Trade in Goods, it grabs hold of its place in the service sector by virtue of Article VI (4) of GATS[67]. "Standards" in terms of space application range from *fastening devises* like nuts, bolts, studs, and screws to *space craft system engineering*. Also for project management requirements, requirements for design, development, manufacturing, verification and operational activities applied to space systems and their constituent parts, and interface requirements transmitted between organizations the *"standards determined"* influences space markets[68].

Currently, standardization for the space applications, in Europe, is done by the European Co-operation for Space Standardization (ECSS), for United States, the American National Standards Institute (ANSI) has designated the American Institute of Aeronautics and Astronautics (AIAA), and for Russia the primary standardization body for space exploration and development is the Russian Space Agency.

In the Standardization Code, the TBT Agreement requires all standardization bodies to notify its acceptance and the scope of its standardization activities to ISO/IEC Information Centre, either directly or through its national ISO member body. It is noteworthy that all the nations with space applications have notified its acceptance of this Code. For all of them, the National Treatment clause stipulated in clause D of the Code would have its application.

Another pertinent provision that may have an imperative application on space activities is clause F, which permits the standardization body to deviate from the international standards if existing standards prove ineffectual. This applies when such ineffectiveness are due to bizarre climatic or geographic conditions, and technological problems. The vitality of this clause will crop up in the context of fixing standards for space station, satellites and spacecraft equipments, and in-orbit applications.

Lastly, the subject of concern is regarding the avoidance of duplication or overlapping with other standardization bodies. The issue becomes more sensitive when considers the role of the International Telecommunications Union (ITU) in developing internationally agreed technical and operative standards and defining tariff and accounting principles for international telecommunication services. But the recently adopted strategic partnership between ISO, ITU, and WTO

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with the common goal of promoting a free and fair global trading system is indisputably a positive step to future.

Agreement on Subsidies and Countervailing Duties (SCM)

This is the Agreement that will be decisive to the space segment second in importance to GATS. The Agreement intends to do away with all sorts of subsidies that hamper with the international trade. Unlike GATT, it proffers a comprehensive definition for subsidies[69]. It is these expansive definitions that make the Agreement vital for space activities. But one needs to be wary in dealing with subsidies as this unswervingly addresses the national policies.

But the first question that deserves attention here is the squaring off of the economics of subsidies with the norms of space law. One fundamental principle of space law is that of state responsibility for all national space activities, be it governmental or non-governmental. This accentuates the state-centric nature of space law. If viewed in the present context, the State, by virtue of its role as the regulator of space activities has the right to grant subsidies to space industry, public or private. One criticism that may crop up is that WTO pampers with this principle of space law. Here what needs to be considered is that WTO does not prohibit subsidies *per se* but only those that hamper the free flow of international trade. If such subsidies cause material injury to another state, the Subsidies Agreement holds the state responsible for it and requires complying. So what becomes apparent is a situation of *congruence* rather than of *incongruence*. In the exercise of this power by WTO, the ethical base of space jurisprudence remains unscathed.

As stated earlier "subsidy" has a wider characterization under this Agreement. Owing to the wider ramifications, and the impracticality to portray all that in this article, what is presented here is a sample.

One measure that amounts to "subsidy" under the Agreement is *"a financial contribution by the member, where government revenue that is otherwise due is foregone or not collected (tax credits)"*. This clause is of import to the space segment in the context of numerous government tax incentives and loan guarantees, which are pervasive in this sector, for space activities. Normally, it is the sovereign right of a state to tax any revenue. It is also *free not to tax* any particular revenue. What the aforesaid clause indicates is the non-collection of the revenue that is *otherwise due*, amounts to subsidies under this agreement. So to constitute a *subsidy*, there must be a governmental provision to tax, but not taxed. Perhaps, a solid law granting tax exemption to space industry may help. The DSB in *US-FSC* has taken a similar stand. But the Appellate Body has expressed its dissatisfaction to this attitude and sought to have more solid definitions for the expression *otherwise due*. Above all, the Subsidies Agreement permits the members to resort to unilateral countervailing duties as a last resort and these sort of steps may prove fatal to space industry[70].

The comprehensive nature of the definitions may also have its impact on the government policies of providing launch and other related infrastructure as well as other governmental benefits to the space industry.

Other Pertinent Agreements

Examination of the certain selected agreements in the paper does by no means indicate that others are extraneous or of no consequence. This deficiency is attributable to the present restraints. But to keep away from unfairness to this endeavor, those agreements are referred to here.

With the mounting private participation, as huge investments started flowing towards space related endeavors, the Agreement on Trade Related Investment Measures (TRIMs) assumed significance for the space sector. Though its applicability is limited to trade in goods, its check on trade-restrictive and distorting investment measures could be imperative to space sector. Owing to the shift in the nature of space activities from state-centric to corporeal-centric, the new Agreement on Government Procurement (GPA) will gain significance. In space field, the national security exception in Article XX of GATT, 1947 can have far reaching effects in the trade area and risks becoming a disguised protection of economic specific interests. The substantial swelling in the space business may further invoke Agreements on anti-dumping and Agreement on Import Licensing Procedures. Automatic accession to the mighty Dispute Settlement Body of WTO will certainly give space faring nations a fair deal in the enforcement and management of their trading rights.

VI. CONCLUSION

When "business" turns out to be the chief business in space, those must be driven sooner than it drives space activities. If not, *sputniks* may go astray from their trajectories in the billowing force of these deals. On the road to commercialization, they need acclimatization with the changes and to make over and look for new trajectories. When space activities tread all the way through the boulevards of business, it may encounter many business-allied systems including institutions as well as regulations. At this juncture, to move about rebuffing the prospects of free trade, though out of the question, will be the biggest foolhardiness. As a catalyst in this free market, Geneva's part also cannot be cast off.

In this exercise, the author pulled out all the stops to sift those space applications that may cross the threshold of WTO's realm and few of its corollaries. But he has no intention to hoodwink the readers and persuade them to deify WTO. Assimilation with it could neither fetch milk and honey. But it cannot be cast-off either. WTO must be accepted with all its virtues and evils. Owing to its present tilt, space sector will have to learn to live with WTO. As opposed to keeping cold-shoulder at its prospects, it is wise to be conscious of its role and capitalize on its up beats.

Epilogue

WTO rules are buttressed by a strapping enforcement mechanism. Space industry should be cautious in fasten together with it. A "policeman" is not in attendance to check against WTO-overreaching!!!!

End Notes

[1] John H. Jackson, *The Jurisprudence of the GATT and WTO* (Cambridge: Cambridge University Press, 2000), pp.17-18. In the words of Jackson, "With scarcely any institutional framework, with no provision for a secretariat, and with legal ties to an organization that failed to materialize- - - - - the GATT has limped along for nearly forty years". The original mandate of the GATT is to negotiate and remove all kinds of barriers to trade in the forms of tariffs. Despite the original theory of GATT that GATT was not to be an international organization, it was forced to assume the role for which it was never designed.

[2] Jackson, "The Puzzle of GATT: Legal Aspects of a Surprising Institution", *Journal of world Trade Law*, vol.2, 1967, pp.131-61. The General Agreement on Tariffs and Trade commenced its operation as a preparatory committee for trade and employment of the Economic and Social Council of the United Nations. Later on, tariff negotiations were also included to the purview of this committee. This preparatory committee produced a single document called the General Agreement on Tariffs and Trade. Though the tariff negotiations that led to the

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GATT and the negotiations on the creation of an International Trade Organization (ITO) proceeded simultaneously, certain political factors thwarted the creation of ITO. Soon GATT was brought into force through a protocol for provisional application. As it turned out, the ITO did not come into being and all attempts to definitive application rather than provisional application of GATT failed. For a detailed discussion on the birth of GATT see, T.N. Srinivasan, *Developing Countries and the Multilateral Trading System: From the GATT to the Uruguay Round and the Future* (Delhi: Oxford University Press, 1998, pp.9-19. Also see Jackson, *The World Trading System: Law and Policy of International Economic Relations* (Massachusetts: The MIT Press, 1994), pp.27-37.

[3] As early as 1970, GATT had been so successful that tariffs among the major industrialized countries were no longer a problem. World merchandise in trade volume terms had grown at an average annual rate of around 8 percent between 1950 and 1974, while world output had grown at around 5 percent. For support see Robert E. Baldwin, *Non-tariff Distortions of International Trade* (Washington DC: Brookings Institution, 1970).

[4] GATT even made a desperate attempt to adapt itself with the changing international trade scenario. The best example for this is the Multilateral Trade Negotiations (MTN) initiated in 1973 within the GATT. The MTN addressed a wide range of non-tariff measures and came out with agreements on subsidies and countervailing duties, anti-dumping duties, technical barriers to trade, government procurement, import licensing, valuation for customs purposes et. al. The significance of MTN lies in the fact that it happened at a time when international economic system had been passing through a difficult stage and the use of non-tariff measures were high. As the regulator of international trade (by then through its six negotiating rounds GATT has, to a larger extend succeeded in trade liberalization with its tariff regulatory power and has created a scenario of increasing economic interdependence) GATT attempted to address the issues of non-tariff measures. In fact, MTN is an attempt to broaden the mandate of GATT. For details see Jackson, n.1, pp.34-48.

[5] The Multilateral Trade Negotiations (MTN) gave the realization that GATT's institutional mandate is inadequate for dealing with the current economic crisis.

[6] For a detailed discussion on the foundation and aims of a multilateral trading system see the application of its theory in the context of space exploration at page 4 of this paper.

[7] The key to predictable trading conditions is often the transparency of domestic laws, regulations, and practices. Many WTO agreements contain transparency provisions, which require disclosure at the national level-for instance, through publication in official journals or through enquiry points-or at the multilateral level through formal notifications to the WTO. Much of the works of the WTO bodies are concerned with reviewing such notifications. The regular surveillance of national trade policies through the Trade Policy Review Mechanism provides a further means of encouraging transparency, both domestically and at the multilateral level.

[8] As per this principle members are bound to grant to the products of other members treatment no less favorable than that accorded to the products of any other country. Thus no country is to give special trading advantages to another or to discriminate against it. All are on an equal basis and all share the benefits of any moves towards lower trade barriers.

[9] This principle requires that once goods have entered a market, they must be treated no less favorably than the equivalent domestically produced goods.

[10] Robert Howse, "From Politics to Technocracy-And Back Again: The Fate of Multilateral Trading Regime", *American Journal of International Law*, vol.96, 2002, p.108.

[11] See K.H. Bockstiegel, "Commercial Space Activities: Their Growing Influence on Space Law", *Annals of Air and Space Law*, vol.XII, 1987, pp.175-91.

[12] If one considers the aforementioned metaphor, it would not be a surprise to note that, an assemblage who has a common matter of concern, and about which they have apprehensions, decided to fall back on sharing, co-operation and mutual assistance. Even a cursory glance at the major space treaties, General Assembly Resolutions, and General Principles of Space Law gives one the aroma of a "utilitarian approach". The concept of "common province of mankind" envisaged in the Outer Space Treaty and the "common heritage of mankind" in the Moon Treaty underscore this.

[13] With the progress achieved in new areas of technology like remote sensing, telecommunications, and transportation, it was quite natural for the "co-existence" aura that surrounded the space activities during its initial days to give way for "co-operation". But as the players began to explore the immense market potential of these activities, coupled with the new fangled technology on space station, zero gravity sciences, and asteroidal mining, their entire focus was on monopolizing those lucrative markets thus giving way for "competition". For a detailed discussion on the developments see Nathan C. Goldman, *Space Commerce: Free Enterprise on the High Frontier* (Cambridge: Ballinger Publishing Company, 1985); Anthony J. Lewis, "Geologic and Geomorphic Applications from Space: Past and Present", *Space Activities and Implications: Where from and Where to at the Threshold of the 80's* (Toronto: The Carswell Co. Ltd., 1980), pp.13-33; Andrew J. Young, *Law and Policy in the Space Station's Era* (London: Martinus Nijhoff Publishers, 1989).

[14] The author is remorseful for using the expression "pretensions". But it is irresistible at this point of time. The space jurisprudence seems to be in a "Rip Van Winkle sleep". Though much water has flown under the bridge, it still is draped in its old attire of "co-operation" and "co-existence". The author is awfully fretful at this state of affairs.

[15] Even in 1960s, the United States and Soviet space programs had begun to produce and develop direct and "spin off" technologies that were soon integrated into the economies of the space powers. In the 70s and 80s, space activities like telecommunications and transportation found place in the commercial agenda of United States, Soviet Union, Europe, and Japan. The introduction of remote sensing and the launching of space station soon widened this agenda. For a detailed discussion on the national commercial space policies of these States see Goldman, n.13.

[16] See, Goldman n. 13, pp.50-53.

[17] The Uruguay Round of multilateral trade negotiations was mainly based on a "single undertaking" or "package" approach. Each country had the option of either accepting the entire package of agreements that ultimately became part of the Agreement Establishing the World Trade Organization or refusing to accept the package, in which case they remained completely outside the WTO. Although General Agreement on Trade in Services (GATS) were also a part of the single undertaking, it is radically a different type of Agreement, because it is based on a "positive list" approach in which countries undertook specific commitments such as market access and the national treatment obligation only in the sectors that they listed in their schedules. Further, it offered a "menu" of options because countries could specify the level of commitments that they wished to undertake in a sector by exempting themselves from certain general obligations. "Telecommunications" was one such sector in the "menu of options". For more on it see Krishnan Venugopal, "Telecommunication Sector Negotiations at the WTO: A Case Study of India, Srilanka and Malaysia", Paper presented at the *ITU/ESCAP/WTO Regional Seminar on Telecommunications and Trade Issues*, October 2003, Bangkok, Thailand. Also see Stephane Lessard, "International Trade in Telecommunication Services: Towards Open Markets", *Annals of Air and Space Law*, vol.22, Part I, 1997, pp.403-12.

[18] By January 2000, 93 members had included telecommunications services in their list of commitments.

[19] Some of the recent efforts, particularly in the Seattle and Doha Rounds of ministerial talks, to broaden the mandate of WTO to certain issue have created much hue and cry among the developing country members and certain interest groups. These topics include labour standards, competition policy, government procurement, health, human rights, and environment. For a detailed and analytical debate on the linkage issues see Steve Charnovitz, "Triangulating the World Trade Organization", *American Journal of International Law*, vol.96, 2002, pp.28-55; Gregory C. Shaffer, "The World Trade Organization

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Under Challenge: Democracy and the Law and Politics of the WTO's Treatment of Trade and Environment Matters", *Harvard Environmental Law Review*, vol.25, 1999, pp.19-83; David W. Leebron, "Linkages", *American Journal of International Law*, vol.96, 2002, pp.5-27.

[20] Joint statement of the formal Director Generals on the Multilateral Trading System (February 1, 2000).

[21] Article III (2).

[22] See preamble to the Agreement Establishing the World TradeOrganization, http://www.wto.org/english/docs_e/legal_e/04-wto.doc.

[23] Philip M. Nichols, "Corruption in the World Trade Organization: Discerning the Limits of the World Trade Organization's Authority", *New York University Journal of International Law and Politics*, vol.28, 1996, pp.711-14.

[24] See Article I; In the WTO language, the expression "covered agreements" indicate all those agreements that are listed in the Annexure 1 to 4 of the Agreement Establishing the World Trade Organization.

[25] The dispute settlement system of the GATT is generally considered to be one of the cornerstones of the multilateral trade order. Trade relations often involve conflicting interests. Agreements, including those painstakingly negotiated in the WTO system, often need interpreting. The most harmonious way to settle these differences is through some neutral procedure based on an agreed legal foundation. That is the purpose behind the dispute settlement process written into the WTO agreements. See the original text of the Understanding on Rules and Procedures Governing Settlement of Disputes, http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#Understanding. For an analytical discussion on this Agreement see Norio Komuro, "The WTO Dispute Settlement Mechanism: Coverage and Procedure of The WTO Understanding", *Journal of World Trade*, vol.29, 1995, pp.5-95.

[26] WT/DS/15.EC alleged that an agreement (IDO Monitoring Agreement) reached between US and Japan constitutes a breach of Japan's obligations under WTO, in particular those under Articles I and II and Article XVII of GATT, 1994. Also, this will nullify and impair the benefits accruing to the EC thereunder.

[27] EC complained that Korea's Government Procurement Fund Act constitutes a breach of Korea's obligations under Articles III and XVI of GATT, 1994. By virtue of this legislation Korea has granted US products advantage, favor, or privilege, which has not been accrued to like product originating in EC. Hence this legislation constitutes a breach of Article I of the GATT, 1994.

[28] In this case European Community (EC) alleged that a tender published by the Japanese Ministry of Transport to purchase a multi-functional satellite for the installation of Global Navigation Satellite System has discriminated EC bidders and were treated less favorably than suppliers of other parties.

[29] The WTO dispute settlement process involves various stages. The first stage is consultations between the governments concerned (even when the case has progressed to other stages, consultation and mediation are still always possible). If consultation cannot amicably settle the dispute then Panels are constituted. The Panel gives its first report within six months from the date of its constitution. If the parties are unsatisfied with the Panel's report then they could appeal to the Appellate Body of the WTO. For a detailed version of the WTO's dispute settlement see Komuro, n.24; *A Hand Book of WTO Dispute Settlement System* (Cambridge: Cambridge University Press, 2004); A Jayagovind, "The Dispute Settlement Understanding: A Critique", *Indian Journal of International Law*, vol.41, no.3, 2001, pp.418-34.

[30] See detailed version of these complaints in http://www.wto.org/english/tratop_e/dispu_e/dispu_subjects_index_e.htm.

[31] This contention is based on the advisory opinion of the Permanent Court of International Justice *in Jurisdiction of the European Commission of the Danube*, 1927. See 1927 PCIJ (Ser.B) No.14. As quoted by Charnovitz, n.19.

[32] Ocean-full of ink has been poured down regarding the space-sea legal analogy. This pertains to different aspects of these branches of law. For more on this point see works by H.H. Almond, Guyla Gal, Gorbiel, Vladimir Kopal, N. Jasentuliyana, P.P.C. Hanappel, and others in the *Proceedings of the 28th Colloquium on the Law of Outer Space, 1985*, pp.118-72.

[33] See Section 6(1) (a) of the Agreement Relating to the Implementation of Part XI of the Convention, 1994.

[34] The Agreement Relating to the Implementation of Part XI of The Convention came into force in 1994. That is at the time when the Uruguay Round Final Act was at its culmination. Perhaps this is the factor that might have enthused the negotiators to resort to GATT. The Expression "General Agreement on Tariffs and Trade, its relevant codes, and *successor or superceding agreements*" in Section 6 emphasizes this point. See *The United Nations Convention on the Law of Sea, 1982: A Commentary Part VI* (The Hague: Martinus Nijhoff Publishers, 2002).

[35] For a detailed and interesting discussions on this point see Carl Q. Christol, *Space Law: Past, Present, and Future* (Denver: Kluwer Law, 1991); I.H. Ph. Diederiks-Verschoor, *An Introduction to Space Law* (Denver: Kluwer Law, 1993), Bin Cheng, *Studies in International Space Law* (Oxford: Oxford University press, 1998);

[36] The theory of comparative advantage is perhaps one of the most significant theories of international economics. Classical economists like Adam Smith and David Ricardo propounded it. The theory requires each nation to specialize in the goods in which they have comparative advantage. A country is said to have comparative advantage in the production of a good if it can produce that good at a lower opportunity cost than another country. For a fundamental and interesting discussion on this theory see Steven Suranovic, "The Theory of Comparative Advantage: An Overview", *www.internationalecon.com*.

[37] For the application of this theory to the current multilateral trading system see Robert Howse, "From politics to Technocracy-And Back Again: The Fate of the Multilateral Trade Regime", *American Journal of International Law*, vol.96, pp.94-117.

[38] Ibid. at p.95.

[39] For a though provoking journey into the principles of space law see Mohammed Bedjeoy, "Classicism and Revolution in the Elaboration of the Principles and Rules of Space Law", ed., Nandasiri Jasentuliyana, *Perspectives on International Law* (London: Kluwer Law International, 1995), pp.441-62.

[40] Ibid.

[41] Ida Bagus Rahmandi Supercana, *The International Regulatory Regime Governing the Utilization of Earth-Orbits* (Leiden: Rikkuniversiteit te Leiden, 1998).

[42] As this theory is highly prone to confusions and misunderstandings, it needs to be understood in a constructive manner. Ricardo has defined comparative advantage by using the examples of England and Portuguese with regard to the production of cloth and wines. If England specializes in producing wine and Portugal in cloth, then the total output of both goods could rise. If appropriate terms of trade are chosen, then both countries could end up with more of both goods after specialization and free trade than they each had before trade. This means that England may nevertheless benefit from free trade even though it is assumed to be technologically inferior to Portugal in the production of both cloth as well as wine. Later on, he defines comparative advantage by comparing productivities across industries and counties. In this situation, Portugal is more productive than England in both cloth and wine. If Portugal is twice as productive in cloth relative to England but three times as productive in wine, then Portugal has comparative advantage in wine. Similarly, England's comparative advantage good is cloth in which its productivity disadvantage is least. This implies that to benefit from specialization and free trade, Portugal should specialize and trade the good in which it is "most best" at producing, while England should specialize and trade the good in which it is "least worse" at producing.

[43] For a discussion on the application of TRIPs Agreement to space related activities see S.G. Sreejith, "The Pertinent Law for Space Related Intellectual Property Issues: An Odyssey into TRIPs", Paper presented at the *Students Session of the 54th International Astronautical Conference*, 2003, Bremen, Germany.

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[44] Countries with space technology like Argentina, Australia, Brazil, Canada, China, European members, India, Japan, United Kingdom, and United States are members to the World Trade Organization. The only non-member space power is Russian Federation. But even they have also joined as a member government with observer status. The negotiations for Russian accession are currently on in WTO.

[45] Article 38:The court whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply; a) International Conventions, whether general or particular, establishing rules expressly recognized by the contesting states; b) international custom as evidence of a general practice accepted as law, c) the general principles of law recognized by civilized nations; d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of the rules of law.

[46] From the wordings of Article 38(1), it seems that it is purely descriptive and is not intended to circumscribe in anyway the operation of the sources that are described. See Michel Virally, "The Sources of International Law", Max Sorensen ed., *Manual of Public International Law* (London: McMillan, 1968), pp.118-22.

[47] For an inspiring article related to this see Eilene Galloway, "The Definition of Space Law", *Proceedings of the Thirty Second Colloquium on the Law of Outer Space, 1989*, pp.331-34.

[48] Maurice N. Andem, *International Legal Problems in the Exploration and Peaceful Uses of Outer Space* (Rovaniemi: University of Lapland, 1992).

[49] C. Wilfred Jenks in an address at the Seminar of International Diplomats at Salzburg has thrown light into seven major stages in the development of space law. He has depicted the first five stages as those through which space law making has gone through and the sixth and seventh as future stages. The stages are 1) speculative phase, 2) the beginnings of practice, 3) the declaration stage, 4) the treaty stage, 5) spelling out the treaty, 6) the law of world public services in space, and 7) space controls in the world community and space law in the common law of mankind. For an articled form of this speech see Wilfred Jenks, "Seven Stages in the Development of Space Law", *Proceedings of the 11th Colloquium on the Law of Outer Space, 1968*, pp.246-63.

[50] Ibid. at p.258.

[51] See Moustapha Sourang, "Jurisprudence and Teachings", Mohammed Bedjeoy ed., *International Law Achievements and Prospects* (Boston: Martinus Nijhoff Publishers, 1991), pp.283-88.

[52] The inspiration behind this idea is derived from David Palmer and Petros Mavroidis, "The WTO Legal System: Sources of Law", *American Journal of International Law*, vol.92, 1998, pp.398-413.

[53] Normally, all the agreements that are appended to the Agreement Establishing the World Trade Organization are referred in the WTO language as Covered Agreements. The most important of these are the Annex IA entitled the Agreement on Trade in Goods, which includes the text of GATT, 1994 and six undertakings concerning the interpretation of its articles, and 12 substantive agreements, running from the Agreement on Agriculture to the Agreement on Safeguards. Apart from this, Annex IB and IC, the General Agreement on Trade in Services and the Agreement on Trade Related Aspects of Intellectual Property Rights respectively are also prominent among the Covered Agreements. For a clear picture of this framework see Jackson, *The World Trade Organization: Constitution and Jurisprudence* (London, The Royal Institute of International Affairs, 1998), pp.36-57; For the full text version of these agreements see *The Results of the Uruguay Round of Multilateral Trade Negotiations* (Geneva: GATT Secretariat, 1994).

[54] The GATS is set on three pillars. The first is a framework Agreement containing basic obligations which apply to all member countries. This includes the Most Favored Treatment and transparency clauses. The second part deals with national schedules of commitments containing specific national commitments as well as commitments for continuing process of liberalization. The third is a number of annexes addressing the special situations of individual service sector. Unlike other WTO Agreements, in GATS, the national treatment principle is not a general obligation but a commitment made in the national schedule of commitments. See Andre Sapir, "The General Agreement on Trade in Services-From 1994 to 2000", *Journal of World Trade*, vol.33, no.1, 1999, pp.51-66. Also see WTO Secretariat, *An Introduction to GATS* (Geneva: Trade in services Division, 1999).

[55] See Preamble of the GATS.

[56] Article 3(c).

[57] Article 3(b).

[58] See Article 1(2).

[59] Marco C.E.J. Bonckers and Pierre Larouche, "Telecommunications Services and the World Trade Organization", *Journal of World Trade*, vol.31, no.3, 1997, p.15.

[60] WTO Panel Report on Canada – Autos.

[61] WTO Panel Report on EC – Bananas III, para. 7.285.

[62] Article 1(3)(a)(ii).

[63] Some of the leading giants in the private launching industry are Martin Marietta Astronautics Group, General Dynamics Commercial Launch Services Inc., McDonnell Douglas Astronautics Company, and Kelly Space and Technology, Inc. Companies like Orbital Recovery Ltd., and Constellation Services International Inc., provides services like satellite life extension, retrieval, and repairs.

[64] The services of the GPS of United States and GLONASS of Russia are available to the civilian users as a benefit granted to them and hence cannot be enforced in case of a refusal. See Marco Ferrazani, "Global Navigation Satellite System", *Proceedings of the Sixth ECSL Summer Course on Space Law and Policy*, 1997.

[65] See Sreejith, n. 43.

[66] See Annex III of the Agreement on Technical Barriers to Trade.

[67] Article IV (4) of GATS: "With a view to ensuring that measures relating to qualification requirements and procedures, technical standards and licensing requirements do not constitute unnecessary barriers to trade in services..."

[68] For more details upon the space applications that requires as well as follows standards log on to the web pages of European Co-operation for Space Standardization.

[69] See Article 1 of the Agreement on Subsidies and Countervailing Duties.