



## New patterns of space policy in the post-Cold War world



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### A B S T R A C T

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This paper aims to study the new generation of space policy, analyzing the factors that are pushing towards a new configuration: the new political actors active in this field – *developing countries*, particularly the BRICs – and the market forces. The objective is to identify the critical factors that are changing the character of space policy. Thanks largely to the interviews conducted in the field, it has been possible to identify three elements which concur to shape a “new pattern” of space policy: the new generation satellites (so called “small satellites”); the ability to launch and the platforms from which to put satellites into orbit; GNSS (Global Navigation Satellite Systems) signals that several space agencies are trying to refine in order to become independent from US influence, exerted by “global” supplying of the GPS (Global Positioning System) signal. In conclusion it is therefore possible to reaffirm that space policy is one of the most evident indicators of the changes taking place in post-Cold War politics, and at the same time they are in themselves a critical factor in the definition – and continuous re-definition – of the political hierarchies in the international arena.

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### 1. Introduction

Space policy has changed profoundly in recent years, for political, economic, and technological reasons, after having long been the stage on which the two superpowers of the Cold War measured their ability to impress international opinion. In the space race, symbolic elements were accompanied by strictly military ones: in fact the propulsion force necessary to put a satellite and/or a space mission into orbit could (and can) be used equally for military purposes. In short, space policy was the protagonist of the Cold War for its high symbolic meaning and strong military significance.

The international community that has come into being after the fall of the Berlin Wall has characteristics that are different from the bipolar world: there is no longer a highly divisive political and ideological conflict in the West (and in the rest of the world), but at the same time the political tools available to deal with international conflict have weakened significantly [6]. In this scenario space policy has acquired a different appearance: it remains an important element through which to gain international prestige – in particular for developing countries – but at the same time it plays a role that is no longer just political and military [27]. Nowadays the market is vaster and of greater importance, especially because the

civilian use of services provided by satellites has increased significantly – essentially for technological reasons that will be illustrated in the central part of this paper – and it is very likely they will continue to increase over the coming years.

This paper aims to study the new generation of space policy [45,46], analyzing the factors that are pushing towards a new configuration: mainly, the new political actors active in this field – *developing countries*,<sup>1</sup> particularly the BRICs<sup>2</sup> – and the market forces. The method by which the research was done is mixed: as well as the consultation of literature (*desk* part) we have added several interviews (*field* part) with some top professionals at UNOOSA (United Nations Office for Outer Space Affairs), ESA (European Space Agency) and COSPAR (Committee on Space Research). The conversations were conducted vis-à-vis, through a series of semi-structured questions, and were recorded [5] with the specific

<sup>1</sup> The concept of “developing country” is statistically defined by the World Bank: to this category belong those countries with a Gross National Income (GNI) per capita lower than US\$ 12,746 (World Bank, 2015; see <http://data.worldbank.org/about/country-and-lending-groups> accessed 3 April 2015).

<sup>2</sup> The acronym BRIC was coined in 2001 by Jim O’Neil, an economist at Goldman Sachs: BRIC is a group of countries – Brazil, Russia, India, China – whose aggregate GNP, within a few decades (originally O’Neil pointed to 2040: then this time was anticipated by about a decade) would be higher than the aggregate GNP of G7 countries (see Ref. [42]).

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purpose of investigating the new patterns of space policy.

In the following pages we will give an account of the results of our study. The heart of the work is the section that deals with the critical factors which have determined the current evolution: for this reason we have focused on the analysis of new generation satellites, mainly looking at civil and commercial uses; the ability to launch and the platforms from which to put satellites into orbit; GNSS (Global Navigation Satellite Systems) signals that several space agencies are trying to refine in order to become independent from US influence, exerted by “global” supplying of the GPS (Global Positioning System) signal. We will close with a rapid analysis of the post-bipolar international political system, in relation to the role played by space policy.

## 2. Space policy and international relations (IR)

According to a recurring representation, realists imagine international relations as an area populated by billiard balls, representing the nation states about to touch or even clash [2]. Liberals instead depict international politics as a close network of relationships – a cobweb – created by international institutions and economic interdependence, which wrap around the billiard balls mitigating their dangerous potential [44]. In both perspectives, but especially the liberal one, the emphasis is on how *hard power* (coercion) and *soft power* (influence) complement each other in the script played out by actors on the international scene [30,38].

Given this different theorization, for realists space is primarily a strategic theater, to be conceived as an extension of aeronautic domain [3,11,31], where only zero-sum political games are played, while for liberals it is a place of intergovernmental cooperation and trade, where it is always possible for all players to achieve positive-sum political games [32]. In this regard it should be remembered that in 1959 the United Nations created a body dedicated to the peaceful use of space (COPUOS: United Nations Committee on the Peaceful Uses of Space) [10]. The subject is also governed by various international treaties, among which one should mention the OST (Outer Space Treaty<sup>3</sup>) of 1967 and the Moon Treaty<sup>4</sup> of 1979.

So where does the truth lie between realism and liberalism? It is clear that at certain times and in certain areas, international relations – including space policy [23] – are subject mostly to realist logics and dynamics, and *vice versa* to liberal ones in other situations. As Russett and Oneal wrote:

Rather than ask which theory is right and which is wrong, we should ask if and how they both could be true. One might be more important under some conditions and less important under others, and they might well reinforce one another [44].

The thesis of this essay is that the space policy of the Cold War was largely absorbed by realist dynamics, typical of bipolar international systems [54], while in the present phase liberal dynamics are prevailing, facilitated by the strong growth of the space market for civilian use and the ability of some political actors – particularly the BRICs – to use these elements as leverage in order to upgrade their international role. In other words, the critical factors that define the new patterns of space policy – new generation satellites, launch capability and GNSS – are driven by the market and the activism of some new protagonists of international politics. As we reiterate, it is preferable to imagine realism and liberalism in a circular perspective, as aspects of the same reality destined to become more or less visible depending on the times and the

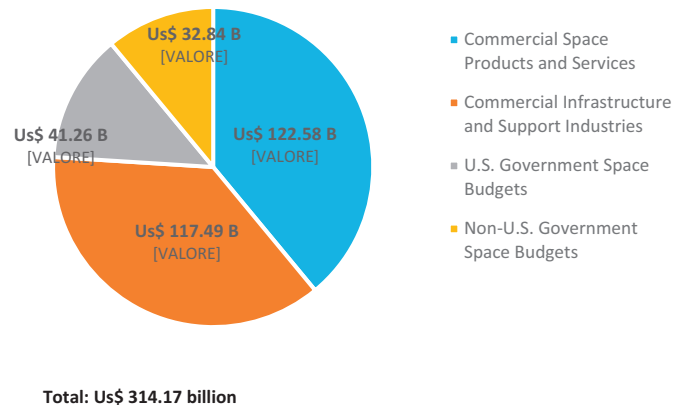


Fig. 1. Global space activity (2013).  
Source: [49]; 4

circumstances: there was cooperation also during the Cold War, just as there is always conflict in international relations even when commercial logic seems to prevail. Concerning the latter aspect, the economic strength of some actors of the international scene – in this essay we discuss in particular the space policies of China, India & Brazil – has enabled them to be at the center of some space clusters that are particularly dynamic; not coincidentally, these same actors are now preparing to reap the benefits of these achievements, acting as regional leaders in a definitively post-bipolar (and ever less unipolar) international system (see Fig. 1).

## 3. The new face of space policy

In 2013 the wealth produced by the space industry was estimated at Us\$ 314.17 billion, with an increase from the previous year of 4% [49]. The positive trend of this sector is not episodic, being confirmed by recent annual reports. In the latest report the sub-sectors of the space industry were as follows:

The most significant percentages are the commercial products and services (39%) and support to businesses and commercial infrastructure (37%), giving a total of 76% of the market absorbed by non-governmental orders. With regards to growing businesses, most have been pushed up by commercial products, services, infrastructure, business support: the most significant surge was in the request for satellite services for civil use. Investor confidence is confirmed by indices recording the performance of stocks in the space sector, in relation to the other indices (Nasdaq, S&P 500 etc.). In the same period, government orders were down 1.7%, partly as a result of budget cuts by the American administration. In short, in the characteristic military-civil *dual-use* of space policy, in the present days the market of military use is falling and the market of civil use is on the rise [41,15].

In addition to telecommunication companies and other business areas that appear alongside the big public players that have always been active (NASA et al.), for some years a new category of actors has appeared on the scene, called *emerging space actors* (EMSAs)<sup>5</sup> by specialized studies. The latter join the *developed space actors* (DVSAs), identifiable in the two superpowers of the Cold War (USA and USSR/Russia) and in the other winners of the Second World War (UK and France, with the exception of China<sup>6</sup>): for this very

<sup>3</sup> Treaty on Principles Governing the Activities of the States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies.

<sup>4</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.

<sup>5</sup> Of course this concept is influenced by the “developing country” one defined by the World Bank (see note 1).

<sup>6</sup> China must be collocated within the EMSAs as to its GNI per capita, which places it among the developing countries.

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