# Ruwantissa Abeyratne

# Megatrends and Air Transport Legal, Ethical and Economic Issues



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Ruwantissa Abeyratne Cote Saint-Luc, Québec Canada

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#### Preface

I commenced writing this book in February 2017, inspired by my lead role on megatrends, in Aviation Strategies International—a global aviation consultancy firm headquartered in Montreal. At this time, the travel and tourism industry was the largest industry in the world where 1 in 10 people across the globe was working in the industry and the industry was contributing US\$ 7.6 trillion to the global economy. The industry was growing steadily at an annual rate of 3.5%, and it was thought that the trend would continue for some time. Also at the time, Donald Trump was new in the White House; the vote on Brexit had just been passed in the British House of Commons and was headed for the House of Lords; elections were looming in the Netherlands, France and Germany; the credibility of the European Union was in serious question with Guy Verhofstadt—the European Parliament's Brexit Negotiator—calling for a drastic review of the philosophy of the EU; and, to add to the excitement, North Korea had tested a missile capable of carrying a nuclear warhead, to the chagrin of the United Nations Security Council, and China was still flexing its muscle in the South China Sea.

Whilst all this was going on, new concepts of state sovereignty were being introduced. In international affairs, the preeminent consideration was the sovereignty of states, which was introduced after the 30-year war by the Peace of Westphalia of 1648—which recognized the immutable and inalienable sovereignty and right of states (countries) to charter their own independence and existence without interference from other states or persons. Over the few centuries that lapsed, the pristine concept of sovereignty evolved from a purely domestic application of government prerogative over governance to include responsibility towards people. A more recent concept is called R2P—Responsibility to Protect—pioneered by Canada, where the responsibility of a government to protect its own people is extended to people of other states who might be in need of protection from acts of their own governments and others. In recent times, the way things have gone around the world has brought to bear a further extension of this responsibility, introduced as *sovereign obligation* by Richard Haas, President of the Council on Foreign Relations, in his essay in the January/February 2017 issue of *Foreign*  *Affairs* called *World Order 2.0—The Case for Sovereign Obligation*: Haas said "[S]uch a concept of sovereign obligation, it is worth pointing out, differs from the notion of sovereign responsibility...It stems from a need to expand and adapt the traditional principles of international order for a highly interconnected world. Sovereign obligation thus retains a respect for borders and an opposition to their being changed through coercion or force".

Contemporaneously, a parallel dimension was taking place in the shape of megatrends—large, transformative, global forces that affect everyone in the world—which are emerging as compelling drivers of our existential world, affecting, among many other human endeavours, the development of air transport. To begin with, global balance of power as a megatrend is the first to be addressed in the context of aviation. Climate change and the scarcity of resources, hyperconnectivity, accommodating growing individuality and individual empowerment, harnessing technology, the exponential rise of the middle class, social mobility and decreasing inequality, big data analysis and privacy, digitization, globalized public demand for better services, technological innovation, medical advances, artificial intelligence and super computers and game changers are other megatrends that would affect aviation.

Particular to the aviation industry (and the world) would be that by 2020 the global middle class will number 3 billion people, and we (including the aviation industry) will be able to connect with them all through the smart devices in their pockets. By 2020, 21 billion network devices will be in use—up from 2 billion just a decade ago. Mobile technology, cloud computing, data analytics, biotech and genomics and artificial intelligence are all advancing rapidly. Consequently, one could expect growth opportunities related to aircraft digitization and new high-performance materials, as well as for hybrid engines and 3-D printing. The aerospace industry is probably the slowest cycle industry of any; however, aerospace programs will need to advance much more quickly to respond to advances in technology. Examples include satellite technology, cybersecurity, directed energy, nanotechnology, urbanization, wireless intelligence and smart city concepts.

Intrinsically linked to these developments would be another megatrend—the continued rise of Generation Y (25–35-year-olds) which would constitute 34% of the global population in 2020. Generation Y will be the most adaptive to change, ready to experiment with new technologies and a high level of purchasing power in 2020. Generation Y is identified as the pioneers of another powerful megatrend called the *global code*—which is a new culture of universal values that is reshaping business and marketing. These values are those of what is called the *global tribe* (another term for millennials) who will be responsible for two sub trends that would directly impact aviation. These are the *Gypsy complex*, where the global tribe will associate with each other through international travel (with no permanent home), and *reverse brain drain* which is a massive reversal of highly educated and skilled workers back to their homeland in 2020. This movement of labour force will have a huge impact on the economy and industry, particularly for aviation.

Also important as a megatrend that would impact aviation are the *next game changers* who are the next big emerging markets which are identified as the *Next 11*, or the future economic engines of growth—signalling a shift in economic power in 2020 from BRIC countries to nations of Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, South Korea, Turkey and Vietnam.

Next-generation business models in 2020 will redefine future business propositions and influence technology and product development. Some of these evolving models are *personalization*, *car sharing* and *pay by the hour*, and their impact on changing trends in aviation (beacons at airports, check-in and locating places in airports) would be an interesting development.

Technology is fast changing the way we work and the air transport world is no exception. A megatrend that would be exclusively aviation specific would be the application of the Internet (Internet of Things, *IoT*) to inflight entertainment and communications. Additionally, pilots are already accessing Wi-Fi cabin networks for weather information and flight planning. IoT is also being used for flight tracking and real-time flight status. This has now morphed to the Internet of Everything (IOE) which will connect almost all goods and services we use, ostensibly to make our lives easier and communications fluid and seamless. From the airport perspective too, technology has brought forth a compelling megatrend that focuses on the passenger as the priority. It is called Airport Service Quality (ASQ), which Airports Council International (ACI)-the international association of airports-defines as the world-renowned and globally established global benchmarking programme measuring passengers' satisfaction whilst they are travelling through an airport. Essentially, this boils down to the type of services offered and their nature which would earn approval and satisfaction of the passenger. In this context, there are many airports, both international and domestic, that provide special services to passengers in need. One particularly prominent hub airport categorizes those in need of special services as accompanied babies and children, unaccompanied children, pregnant women and sick or disabled passengers. In the case of the mentally incompetent, such as a passenger suffering from dementia, he/she would come under the last category of a sick or disabled person. However, when one reads the array of services offered by this particular airport, they are all physical assistance such as wheelchairs, accessible ramps, crosswalk warning bumps indicating direction, semi-dome-shaped warning spots on the ground and easy access to special phones and service areas enabled by the warning bumps.

When megatrends are analysed against developments in aviation, one would need to conceptualize change in an unprecedented manner, based on contextual and strategic thinking, taking into consideration global technical, political, economic, legal and demographic trends. In this sense, "strategy" is defined by the *Harvard Business Review* as "the creation of a unique and valuable position, involving a different set of activities from your competitors". The leadership of any air transport enterprise in this area would require exposure to new forms of intellectual openness and curiosity and, above all, an enduring capacity to identify and analyse the effects of such trends on aviation. Megatrends and aviation would essentially entail a palpable transition from best practices to strategic analysis in the context of the new global business order and global risks facing global trends.

This book analyses some of the key areas of air transport that could be affected by megatrends and the legal issues that accompany them.

Cote Saint-Luc, Québec, Canada March 2017 Ruwantissa Abeyratne

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#### Chapter 1 Megatrends and Air Transport: An Overview

#### **1.1 Future of Aerospace Transport**

Megatrends and air transport means different things to different people. While some think of trends that are emerging, others think long term and this treatise would be incomplete if it did not start with the long term perspective first and then get onto what is emerging right now. On 24 November 2016 there was a luncheon presentation entitled *The Next 100 Years of Aviation* convened by The International Aviation Club of Montreal and McGill University. It was an event well attended by the aviation intelligentsia of Montreal. The presentation was well thought through and eloquently delivered. One of the prognostications presented for the next century was that Mars would be colonized and we would be growing vegetables and other produce for our consumption on the planet. This is not difficult to imagine since at present the Mars One project has developed plans to send humans to Mars, although much has to be accomplished in the nature of making the planet habitable for human existence. It is said though, that "establishing a permanent settlement is very complex, but it is far less complex and requires much less infrastructure that is sent to Mars than on return missions".

Already, Mars One—a not-for-profit foundation that works at establishing permanent human life on Mars—has commenced discussions with established aerospace companies with a view to developing the systems needed for sustaining human life and establishing human colonies. Although such systems require complex designing, construction, and testing, it is said that no scientific breakthroughs are required to sustain human life on Mars as existing technology is sophisticated enough to ensure living conditions on the planet. Perhaps the most encouraging statement issued by Mars One is that there will already be a habitable environment waiting for the first human crew to land on the Planet.

Doubtless, this news is music to the years of the next generation of aviation professionals who occupied two tables at the luncheon—youngsters from both the International Civil Aviation Organization and McGill University. How exciting for them to be at the cusp of outer space travel, let alone be faced with the long term prospect of being able to have an extra terrestrial abode for their children and grand children!

However, there seem to be a couple of snags here: At the presentation, it was forecast that by 2116, there could be at least one flight a day from Earth to Mars presumably carrying tourists and settlers. But before then, well, way before then, humans would have landed on Mars and in fact settled there permanently. Sarah Knapton, Science Editor for *The Telegraph* in her article entitled *Nasa planning 'Earth Independent' Mars colony by 2030s* quotes NASA as having claimed that humans will be living and working on Mars in colonies entirely independent of Earth by the 2030s. In fact, NASA is purported to have released a plan for establishing permanent settlements on Mars on the basis of creating 'deep-space habitation facilities' which will act as stepping stones to Mars.

If humans were to settle on Mars in just 15-20 years' time, how is this conceivable when we still do not have a global understanding or agreement on at what altitude air space ends and at what point outer space begins? What are the laws that would govern travel from airspace to outer space? Air law and space law are closely inter-related in some areas and both these disciplines have to be viewed in the twenty-first century within the changing face of international law and politics. Both air law and space law are disciplines that are grounded on principles of public international law, which is increasingly becoming different from what it was a few decades ago. We no longer think of this area of the law as a set of fixed rules, even if such rules have always been a snapshot of the law as it stands at a given period of time. The issue of air space and outer space is looming over the aerospace community, particularly with the prospect of space travel on a commercial basis which is already a reality. Currently, the aerospace community is considering such issues as sub-orbital flights and space tourism, both of which could further blur the boundaries between air space and outer space, while raising issues of topical interest. So far, there has not been a universally accepted definition distinguishing air space and outer space. Some years ago, when the legalities of an aerospace plane, which is a hypersonic single stage to orbit reusable vehicle that horizontally takes off and lands on a conventional runway were considered, it was thought that the transit through near space which is involved is incidental to the main transit which takes place within the airspace. Generally, the aerospace plane, which will be constructed with the use of aeronautical and space technologies and would be capable, and, indeed, required to fly both in airspace and outer space, would bring to bear the need to consider the applicability of and appropriateness of laws relating to the space plane's activities. It will be subject to the sovereignty of the State whose airspace it is in. This is an incontrovertible fact which need not be stated since any object within the airspace of a territorial State would indeed be subject to that State's sovereignty.

Recently, the official launch of space tourism, where paying customers travelled beyond Earth's atmosphere, gave rise to an entirely different dimension, where the different issue of sub-orbital flights has emerged as requiring some consideration, particularly on the question as to whether such flights travel to outer space or whether they are deemed to be considered as not leaving the Earth's atmosphere. Unlike the aerospace plane which would leave the territory of one State as an aircraft, enter outer space and travel in outer space until it descends to a destination State, sub-orbital flights would not usually travel between two States but would ascend to an altitude sufficient for the persons on board to view the Earth as a whole globe, a phenomenon not available to aircraft passengers. The vehicle would descent to the State from which it took off. This activity is called "sub-orbital flying" and is gaining increasing popularity in the realm of space tourism. One of the issues that sub orbital flights raise is whether, at the height the flights are conducted, the vehicle is deemed to be in air space or outer space. Therefore, sub orbital flights inevitably call for a determination as to what might be air space, as against outer space This question is particularly relevant when one considers liability arising from death or injury to passengers while travelling in outer space. Although there are established treaty provisions regarding air travel under the Montreal Convention of 1999 there is no such treaty governing travel in a spacecraft in outer space.

Once the travel issue is settled, the other question that would emerge would be what laws would govern human conduct in outer space. Who would be the governing authority? Article 1 of the Outer Space Treaty provides that the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. It goes on to say that outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

Finally, Article 1 provides that there shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.

The more challenging provision in the Treaty is Article 2 which prescribes that outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. This precludes a State from appropriating a celestial body *inter alia* by use.

Garold Larson, Alternate Representative to the First Committee of the 64th Session of the United Nations Assembly held on 19 October 2009, succinctly outlined the policy of the United States on space exploration. The foremost principle outlined by Larson was that the United States will continue to uphold the principles of the 1967 Outer Space Treaty, which the United States recognized as providing fundamental guidelines required for the free access to and use of outer space by all nations for peaceful purposes. He went on to say that the United States will continue to take an active role in identifying and implementing cooperative efforts with established and emerging members of the international spacefaring community to ensure the safety of the space assets of all nations and also expand cooperation with other like-minded spacefaring nations and with the private sector to identify and protect against intentional and unintentional threats to its space capabilities.

The European Union, in 2008, published a draft Code of Conduct for Outer Space Activities, which it later revised in September 2010. The fundamental postulate of this code is that member states should establish policies and procedures to minimize the possibility of accidents ... or any form of harmful interference with other States' right to the peaceful exploration and use of outer space. The Code applies three basic principles in pursuance of its overall objective: freedom of access to space for peaceful purposes; preservation of the security and integrity of space objects in orbit; and due consideration for the legitimate defence interests of states. The code is not a legislative instrument and therefore has no legally binding effect on member States. It remains a voluntary agreement among states with no formal enforcement mechanisms. On 4 April 2011 the European Commission published a space strategy for Europe whereby the European Union seeks to identify and support the development of essential technologies for exploration, in particular in the fields of energy, health and recycling (support for life in isolated environments). These matters are not necessarily dealt with in the space sector itself and cross-fertilisation should be promoted with other sectors in order to benefit the citizens directly.

Answers can always be found but the key principle is that technology and space exploration must go on for the benefit of humanity. In the ultimate analysis, a joint space programme between key players of North America, Europe and Asia could greatly stabilize international space exploration. Growing spinach on Mars is one thing, but getting the laws in place within the next 15 years is an entirely different prospect.

#### **1.2** The Future of Air Transport Law

Having discussed the aerospace connection in the next 100 years, one has to consider what an overview of the law would be like in air transport leading on to the megatrends of the present and the future. Half the world is living in cities. It is not probable that globalization will stop and, with exponential development, this city population will only grow globally. An ageing population, many with disposable incomes, is another irreversible trend. Against this backdrop, increasing urbanisation; expanding middle class; and rise in migration, tourism and international students are current and future trends. Development and international cooperation is a buzz word in many developed and developing countries.

Air travel will double in 2020 as against today's figure. It is forecast that, between 2009 and 2028 there will be a demand for 24,951 passenger and freighter aircraft worth USD 3.1 trillion, and that, by 2028 there will be 32,000 aircraft in service compared with 15,750 in 2009. In January 2015, ongoing projects for airport construction amounted to the value of US\$543 billion globally. These facts and figures incontrovertibly spell out the future of air transport and the

inevitable fact that liberalization of air transport is a compelling need to meet demand. However, protectionism of market access is looming its head, taking us back to the frustrating 70s and 80s.

Additionally, technology and development resonate the fact that in the near future, commercial space travel will take off, posing a challenge to tenets of air transport law. Regrettably, in all these areas, initiatives in air transport law have been insoluciant at best. This article looks at the state of the world today in the context of air transport law and inquires into its future in five key areas that have been selected for discussion.

At a time when the world celebrates over 70 years of regulated air transport and *Air and Space Law* celebrates 40 years of publication, it is appropriate to envision the shape public international law pertaining to air transport should take in the years to come.

At the outset a seminal point of nomenclature has to be clarified. The law pertaining to air transport has been quoted, and often misquoted, with the use of various terms, the first being "air law". *Milde* asserts that the term is "controversial and imprecise", saying that it is possibly influenced by the French term "*droit et aerostats*"<sup>1</sup> and that it is misleading in that it wrongfully implies a separate branch of law. He asserts that the term "aeronautical law" would be more to the point although the sustained use of the term "air law" should be respected.<sup>2</sup> According to *Milde*, there is no autonomy that could be ascribed to the term "air law" which he claims is composed of various principles that applies to social relations (physical persons, corporate bodies and sovereign States) regulated by law. Although one cannot question this premise, one could certainly question whether the term "aeronautical law" as suggested by *Milde* is consistent with his argument about social relations, since aeronautical law is essentially the law relating to "aeronautics" which is defined as "a science that deals with airplanes and flying" or the science dealing with the operations of aircraft.<sup>3</sup>

*Dempsey*, on the other hand is seemingly comfortable with the term "air law" when he says that that international air law or aviation law is composed of public and private categories<sup>4</sup> and that the *Magna Carta* of air law is the Chicago Convention of 1944.<sup>5</sup> Be that as it may, the author prefers to use the term "air transport law" for purposes of this article.

Another disturbing trend that has been consistent throughout the past 70 years is that the meaning and purpose of law as it applies to air transport has been upended, in that the law has inflexibly dictated to changing economic and social circumstances instead of the other way around, where the law, as a management and social

<sup>&</sup>lt;sup>1</sup>Milde (2012), p. 1.

<sup>&</sup>lt;sup>2</sup>Ibid.

<sup>&</sup>lt;sup>3</sup>http://www.merriam-webster.com/dictionary/aeronautics.

<sup>&</sup>lt;sup>4</sup>Dempsey (2015), p. 215.

<sup>&</sup>lt;sup>5</sup>Convention on International Civil Aviation, signed at Chicago on 7 December 1944. See ICAO Doc 7300/8:2006.

tool, should adapt to changing circumstances and be changed accordingly. At the forefront of this inequity are two key influences or drivers—international law and politics—and their treatment of sovereignty of States and air traffic rights which concepts have not overcome the antiquated notions of market share and protectionism that belie modern exigencies of market economics. Generally under legal theory, each State is sovereign and equal and the term *sovereignty* may be used as a synonym for independence. However, in modern parlance, with the rapid growth in telecommunications and global competition and rivalries, no State can be entirely sovereign to the exclusion of others.

Inextricably connected to this phenomenon is the awareness of the international community that, within the progression of air law are two main issues concerning the evolving role of air law. The first is that that the distinction between air law and space law is continuing to blur. The second is that principles of air law are getting increasingly involved in activities related to military warfare. With regard to the threat envisioned in the use of military warfare on civil aviation activity, the same players, i.e. international law and politics, play the same role. Although airspace is common and States have sovereignty over the airspace above their territories, this does not enable them to use such air space arbitrarily. There are strict principles with regard to aerial military activity and prohibition of the use of military warfare on civilian populations and properties. These must be strictly adhered to in the basis of political consensus.

Air law and space law are closely inter-related in some areas and both these disciplines have to be viewed in the twenty-first century within the changing face of international law and politics. Both air law and space law are disciplines that are grounded on principles of public international law, which is increasingly becoming different from what it was a few decades ago. We no longer think of this area of the law as a set of fixed rules, even if such rules have always been a snapshot of the law as it stands at a given moment.

With changing technology, old political dogma and economic theory are no longer viable and today's challenges demand that we look at the world in a new way. With changing political philosophy, where governments are increasingly asserting their sovereignty, a whole new compromise in air transport law becomes necessary. Although one speaks of globalization, in practice, when one looks at cross border integration of markets, the world is only semi-globalized with barriers that effectively preclude air transport's full potential. Air transport, more than any other industry, demonstrates that a borderless world is still a theoretical concept where State interest still takes prominence over the consumer.

New and emerging threats to civil aviation will continue to be a cause for concern to the aviation community. Grave threats such as those posed by the carriage of dangerous pathogens on board, the use of cyber technology calculated to interfere with air navigation systems, and the misuse of man portable air defence systems will remain real and will have to be addressed with vigour and regularity.

Another area that requires attention is the reactive and ineffective manner the legal regime applicable to air transport was put to work over 2014, where several air

disasters took the world by surprise. The regulators scrambled to set things rights, and it was as though they had not imagined that such disasters were possible.<sup>6</sup>

It is submitted that the enduring weakness of air transport law is the disconnect between where the world is headed and the role to be played by air transport as a product that should be a more efficient engine for growth.

#### **1.3** Where Is the World Headed?

For the next few years at least, the global order portends a disturbing uncertainty. Economic power is shifting across the globe to emerging markets in the far east. Technology is changing rapidly, affecting the way air transport is being conducted around the world. Globalization and deregulation are no longer intrinsically linked to each other. Although the prevailing cross border flow of people will increase, the quantum of cross border investment of foreign direct investment would probably remain at the current rate of around 10%, thus attracting continued protectionism in air transport.<sup>7</sup> The World Bank, in its January 2015 Report,<sup>8</sup> expects overall, global growth to rise moderately, to 3.0% in 2015, and average about 3.3% through 2017. The Report posits that a growth rate of 2.2% will be seen in high income countries in 2015–17, which would be an increase of 1.8% as against 2014, on the back of gradually recovering labour markets, ebbing fiscal consolidation, and still low financing costs. Growth is projected to gradually accelerate in developing countries, rising from 4.4% in 2014 to 4.8% in 2015 and 5.4% by 2017.

A significant gap in the shape of things to come and existing air transport law is the disconnect between where the world is heading, both politically and technologically, and the laws needed to steer air transport in line with shifting trends while offering a safer, more secure and more efficient product. The power shift to the east, where consumer spending in China is \$2.2. trillion in 2015 and Middle Eastern countries such as Saudi Arabia, Qatar UAE, Kuwait and Bahrain have \$1 trillion in investment, are harbingers of the direction the world economy is taking. These figures have to be read in conjunction with some basic facts on the direction air transport is headed. Covering the years 1980 to 2013 a study<sup>9</sup> was conducted by the OECD,<sup>10</sup> which reflects that the airline sector is continuing to grow exponentially.

<sup>&</sup>lt;sup>6</sup>see Abeyratne (2014a). Also by the same author, Flight MH 17: The Legal and Regulatory Fallout (2014b), pp. 329–342. Flight MH 370 and Global Flight Tracking – The ICAO Reaction (2014c), pp. 544–558.

<sup>&</sup>lt;sup>7</sup>Ghemawat (2011), p. 29.

<sup>&</sup>lt;sup>8</sup>Global Economic Prospects: Having Fiscal Space and Using it, January 2015, at 21.

<sup>&</sup>lt;sup>9</sup>AIRLINE COMPETITION—Background Paper by the Secretariat, Directorate for Financial and Enterprise Affairs Competition Committee, 18–19 June 2014, DAF/COMP(2014)14.

<sup>&</sup>lt;sup>10</sup>Organisation for Economic Co-operation and Development (OECD), established in 1961, promotes policies that are calculated to improve the economic and social well-being of people around the world. The OECD provides a forum in which governments can work together to share

Another compelling fact The OECD Report brings to bear is that by 2026, air transport will contribute \$1 trillion to world's GDP.<sup>11</sup> The International Civil Aviation Organisation (ICAO)<sup>12</sup> posits that passenger trips increased from 4.028 billion in 1980 to 19.125 billion in 2012. and that International scheduled passenger traffic grew by 5.2% in 2013 in comparison to 2012 and is expected to reach over 6.4 billion passenger by 2030.<sup>13</sup> According to ICAO's forecast, there will be an average annual growth rate of 4.5% by 2030 in passenger traffic (of both scheduled and unscheduled services).<sup>14</sup>

The key drivers of air transport, according to an *Airbus Industrie* forecast, of economic growth will be: increasing urbanisation; expanding middle class; and rise in migration, tourism and international students.<sup>15</sup> This forecast predicts that emerging countries-regions (Asia and the Pacific, Africa, Middle East and South America) will overtake the developed countries-regions in terms of economic growth with a 10% increase in growth in passenger travel.

There are three areas that would be crucial in the years to come if we are to avoid self- induced stagnation. They are: competition for growth; international intervention to secure the welfare of people; and investment in a balanced education and healthcare for the people. As for competition for growth, this is not a new measure of economic proactivity.

The World Economic Forum reports in its Global Agenda<sup>16</sup> that geostrategic competition is a compelling sign of future global trends and that recent developments have led to tectonic shifts in state interaction, bringing to centre stage geopolitics and realpolitik causing wide ranging effects on the world economy. Air transport, which has remained a political tool in view of the legal recognition of sovereignty in air space, would undoubtedly be affected by this trend.

experiences and seek solutions to common problems. The Organization works with governments to understand what drives economic, social and environmental change.

<sup>&</sup>lt;sup>11</sup>AIRLINE COMPETITION, *Supra*, note 9, *Background Note* at 3. The Report goes on to say that worldwide, aviation and related tourism generate over 56 million jobs, of which 8.36 million are directly linked to the aviation sector. Around 35% of international tourists travel by air.

<sup>&</sup>lt;sup>12</sup>The International Civil Aviation Organization is the United Nations specialized agency dealing with international civil aviation. ICAO was established by the Convention on International Civil Aviation (Chicago Convention), signed at Chicago on 7 December 1944. See ICAO Doc 7300/8: 2006. The main objectives of ICAO are to develop the principles and techniques of international air navigation and to foster the planning and development of air transport. ICAO has 191 Contracting States.

<sup>&</sup>lt;sup>13</sup>ICAO Press Release, 16 December 2013. The OECD Report also notes that the number of travellers has increased because, among many other things, prices have decreased significantly in response to increasing competition in the air transport market. For example, in 1974 the cheapest round-trip New York–Los Angeles flight (in inflation-adjusted dollars) that regulators would allow: \$1442. Today one can fly that same route for \$268.

<sup>&</sup>lt;sup>14</sup>Global Air Transport Outlook to 2030, Circ.333, AT/190: 2012, at 59.

<sup>&</sup>lt;sup>15</sup>Airbus Industrie, Global Market Forecast: Flying on Demand 2014–2033, at 16.

<sup>&</sup>lt;sup>16</sup>World Economic Forum: outlook on the Global Agenda 2015, http://www.weforum.org/reports/outlook-global-agenda-2015.

In view of the above, when one applies the trajectory of the global economy and its direction in the coming years to the market economics of the air transport industry, it becomes eminently clear that the economic forces that are shaping the global economy will affect the progress of aviation. The World Energy Council (WEC) has reported that fuel demand in the transport sector in the next 40 years will come mainly from developing countries such as China and India, where demand will grow by 200% to 300%. In contrast, the WEC is of the view that the transport fuel demand for the developed countries will drop by up to 20%, mainly due to increased efficiencies. The demand of the developing countries is expected to surpass that of the developed countries by the year 2025.

The report also forecasts that oil may still fuel more than 80% of the global transport sector for the next 40 years due to strong demand growth from the heavy duty sector, shipping and air traffic. WEC projects that by 2050 global fuel demand in all transport modes could increase by 30–82% compared to 2010 levels. This portend the inevitability that fossil fuels, the reserves of which are still being discovered, will retain its heavy influence over the coming years and therefore global efforts would have to be concentrated on market based measures as well as the development of alternative fuel technology.

Against this backdrop, and in view of the air transport forecasts discussed above, an IATA forecast which predicts that air travel will double over the next 20 years<sup>17</sup> becomes extremely relevant, inevitably bringing to bear a dichotomy—that in the absence of a more liberalized air transport regime than what prevails currently, this exponentially increased air travel market could be stultified.

#### 1.4 Challenges Facing Air Transport Law

#### 1.4.1 Nationalism and Sovereignty

With regard to the direction in which the world is headed and the impact it has on air transport, arguably, the most significant future challenge to air transport law would be rising nationalism and sovereignty in air space, where the latter has been misunderstood by many States to confer to them absolute immunity against their domestic decisions and actions. This misconception has been exacerbated by Article 1 of the Chicago Convention which recognizes that States have complete and exclusive sovereignty over the airspace above their territory. In light of this lack of clarity in air transport law, many States still believe that air transport services should be subservient to their parochial national interests of protectionism.

*The Economist* states that it would become necessary in 2015 to recognize that nationalism is back. The trend in politicians' agenda would be to claim that they are

<sup>&</sup>lt;sup>17</sup>The Shape of Air Travel Markets Over the Next 20 Years, https://www.iata.org/publications/ economics/Pages/index.aspx.

standing up for their own countries and this would cut across Europe, Asia and the Americas. The political ambition behind this strategy would be popularity that would enable politicians to grow in power. *The Economist* is of the view that there will be an increase in international tensions and an "unpromising background for efforts at multilateral co-operation, whether on climate, trade, taxation or development<sup>18</sup>".

Nationalism, when merged with sovereignty of air space forms a dangerous combination that presents a misconception that ascribes primacy to protectionism. This would be detrimental to the "fair and equal opportunity" for carriers to operate air services that is provided for in the Preamble to the Chicago Convention. Moreover, it would form an ominous cocktail with both Article 1 and Article 6 of the Convention, the latter of which requires an airline operating scheduled air services to obtain permission from a grantor state to fly in and out of its territory, and would undermine the spirit of globalization and its very purpose of economic efficiency.

*Steinberger* in 2000 observed that numerous and varied legal obligations of States prescribed by international legal instruments would essentially preclude them from exercising the puritanical concept of sovereignty, thus constraining their actions. It was *Steinberger's* view that such international responsibility would endorse a State's sovereignty rather than diminish it.<sup>19</sup> *Amitai Etzioni*, in a compelling article speaks of the new idea of sovereignty which was endorsed by UN Secretary General Kofi Annan, that there is a radical turnaround from the concept of sovereignty (absolute and exclusive rights of States within their borders which no other State could question or interfere with) of the Peace of Westphalia of 1648, to where sovereignty is not absolute but conditional, where a State could only maintain its sovereignty on condition that it met with its national and international obligations.<sup>20</sup>

*Etzioni's* compelling argument can be traced to UN Secretary General *Kofi Annan*'s statement before the United Nations General Assembly in 1999 where he said that State sovereignty was being redefined in its most basic sense by the forces of globalization and international cooperation. Annan said that the State was "widely understood to be the servant of its people, and not vice versa".<sup>21</sup> In similar vein, *Starke* is inclined to stretch the principle of sovereignty to accommodate external involvement by a State in the affairs of another in special circumstances:

<sup>&</sup>lt;sup>18</sup>Nationalism is back: Bad news for international co-operation, *The Economist: The World in 2015*, at 92. See the web version of Nov 20th, 2014 at http://www.economist.com/news/21631966-bad-news-international-co-operation-nationalism-back.

<sup>&</sup>lt;sup>19</sup>Steinberger (2000), p. 501.

<sup>&</sup>lt;sup>20</sup>Etzioni (2005–2006), p. 35.

<sup>&</sup>lt;sup>21</sup>Secretary-General Presents his Annual Report to General Assembly, 20 September 1999, Press Release, SG/SM/7136, GA/9596. See http://www.un.org/press/en/1999/19990920.sgsm7136. html.

..."Sovereignty" has a much more restricted meaning today than in the eighteenth and nineteenth centuries when, with the emergence of powerful highly nationalized States, few limits on State autonomy were acknowledged. At the present time there is hardly a State which, in the interests of the international community, has not accepted restrictions on its liberty of action.<sup>22</sup>

If, as the foregoing discussion reflects, air travel will double by 2020 and several thousands of new aircraft are placed in the market, ICAO will have to attempt a definition of sovereignty or in the least offer an interpretation that would be consistent with modern exigencies of market economics in air transport. This could be accommodated in a Repertory Guidance to the Chicago Convention that is long overdue.<sup>23</sup>

#### 1.4.2 Market Access

The ambiguity brought about by the concepts of sovereignty in air space as well as the restriction imposed by Article 6 of the Chicago Convention has given rise to some confusion between open skies on the on hand and protectionism on the other. This has impacted on the financing of airlines, which the Chicago Convention has nothing to do with. The recent spat between the carriers of the United States and the carriers of the UAE and Qatar are a case in point. The term "subsidy" is not defined precisely in economic terms although the Oxford English Dictionary defines the word as "a sum of money granted from public funds to help an industry or business keep the price of a commodity or service low". In broad terms therefore, a subsidy can be considered indirect protectionism. Under the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement),<sup>24</sup> a subsidy is recognized as a financial contribution by a government which confers a benefit.<sup>25</sup> A financial contribution is either money or anything else of value provided to a manufacturer or exporter (which could be construed as an international air service originating in a country) at a cost less than would have been charged in a commercial transaction. This could include indirect support from a government.<sup>26</sup>

It is quite obvious that the air transport industry stands at the crossroads of two major influences—globalization and the information revolution—which have revolutionized the trading world by driving competition. The fact that the UAE carriers (as well as Qatar Airways and Turkish Airlines) have the geographic advantage of

<sup>&</sup>lt;sup>22</sup>Starke (1977), p. 106.

 $<sup>^{23}</sup>$ In the 1970s ICAO made a half hearted attempt at developing a Repertory Guide to the Chicago Convention and has done nothing since toward explaining the legal and regulatory interpretation of the various provisions of the Convention. A commentary of the Convention was developed in 2013. See Abeyratne (2013a), Chapter 1.

<sup>&</sup>lt;sup>24</sup>https://www.wto.org/english/tratop\_e/scm\_e/subs\_e.htm.

<sup>&</sup>lt;sup>25</sup>Article 1.1.

<sup>&</sup>lt;sup>26</sup>Cunningham (1999), p. 6.