# International Spectrum Management Regime:
## *A Case of Regulatory Lock-in for the Developing Countries?*

*The international spectrum management regime was established over a hundred years ago by a few developed countries. Since then, the number of the developing countries in the Radio Sector of the International Telecommunication Union's (ITU-R) membership has increased significantly until these countries became a majority. Moreover, until recently, the developing countries' contributions were limited to demanding preferential treatment for themselves over the developed countries or resisting the introduction of new wireless technologies and services within the ITU-R Radio Regulations.*

*However, the call of African and Arab countries in the last World Radiocommunication Conference of 2012 (WRC-12) for an immediate allocation to the band 694-790 MHz for mobile service to face their growing demand for broadband showed that the international spectrum management regime is not completely a case of regulatory lock-in for developing countries. With the right incentives and qualified leadership, these countries are able to be proactive and to overcome some deficiencies of the regime such as discussing only items that are on the agenda of WRCs.*

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### Resistance to New Services and Technologies
*Developing countries resist new radiocommunication services and technologies that present unnecessary changes to the well-established ITU-R Radio Regulations or may contradict with them as these regulations are considered the basis for spectrum policy in many of these countries.*

### Support to New Services and Technologies
*Developing countries support the equal treatment within ITU-R of all technologies as long as it fulfils the IMT requirements. They also support the study of new technologies within the ITU-R to have some sort of international regulations for these technologies.*

### Proactivity in the WRC-12
*The last WRC-12 witnessed a change in the pattern of the developing countries positions to be proactive where the African and Arab countries called for the band 694-790 MHz to be allocated immediately for mobile services in Region 1 as it was in ITU Regions 2 and 3 to meet growing broadband demand.*

### Policy Implications
*WRC-12 highlighted the challenges to the traditional division of the world into three regions in terms of spectrum allocation. Moreover, several countries criticised the slow decision making process of WRC which can take at least eight years when it comes to allocating new spectrum or adding new service to existing allocations.*

## International Spectrum Management Regime

There are three main theories for studying international regimes. Neoliberals envision that interdependencies and mutual interests of creating international technical standards could motivate increased international cooperation. On the other hand, neorealists argue that regimes are built on the dominant states' interest and their power to impose acceptance of the regime and compliance on other states. The third theory is constructivism which assumes that state behaviour is shaped by elite beliefs and considers that regime is built on shared knowledge.

In approaching the international spectrum management regime, it is found that the establishment of the regime at the beginning of the 20th century aimed mainly to resolve the issue of interference between neighbouring countries and that the regime was based on a main concept which is common use of common frequencies.

It argued that none of the three main regime theories can be applied exclusively to examine the regime. Firstly, from the viewpoint of liberalism, the creation of the regime was associated with the mutual interest of the founding countries in enabling international interconnection. Moreover, countries usually reach decisions within the ITU-R without the need for conducting a formal vote recognizing the importance of consensus in reducing manufacturing costs. Secondly, from the viewpoint of realism, the ITU was controlled prior to 1950 by a small number of developed countries to convey their domestic preferences. These countries were using the voting of their overseas colonies to dominate the ITU activities.

Therefore, it seems that the international spectrum management regime compromises elements of cooperation that is based not only on mutual interest but also on political power. It is argued also that constructivism can explain changes in states interests and preferences which trigger changes in the international regime.

## Developing Countries Presence in the ITU-R

While the presence of developing countries in the ITU-R has evolved with time to become a majority, the ITU-R Radio Regulations were perceived by these countries as not relevant to their need. Therefore, there were several attempts to change the focus of these regulations from the technological needs of the industrial world to the basic demands of the least developed countries. In addition, developing countries have been demanding preferential treatment for themselves over the developed countries.

On the other hand, many developing countries lack the sufficient knowledgeable and experienced staff to participate efficiently in the decision making process despite of being the majority in the ITU. While the attendance and contributions of the developing countries have not changed significantly, what has changed is the role of leading developing countries and regional organisation and the realisation that the major competitive advantage of developing countries is their collective numbers.

# Resistance to New Services and Technologies

There are several cases in which the developing countries resist new radiocommunication services and technologies that present unnecessary changes to the well-established ITU-R Radio Regulations or may contradict with them. This is related to the differences between the needs of the developed countries to introduce new trends in wireless technologies and the concerns of developing countries regarding changing their existing equipment.

In other words, developing countries may prevent advanced technically efficient technologies proposed by the developed countries if these technologies are not economically efficient to them. Moreover, developing countries are not facing the same challenges the developed countries are facing. One other explanation for the resistance of developing countries to changes to the ITU-R Radio Regulations is that these regulations are considered the basis for their spectrum policy. Therefore, these countries are concerned that any changes to them may cause difficulties in managing the spectrum at the national level.

# Support to New Services and Technologies

While the previous section shows several examples of resistance to new technologies and services for reasons such as contradiction with the ITU-R Radio Regulations, this has not always been the case. For instance, one of the issues that have witnessed strong support from the developing countries is the inclusion of particular new technologies into the IMT radio interfaces.

It is argued that this position was not a support to these technologies per se. Instead, it was a support to the equal treatment within ITU-R of all technologies as long as it fulfils the IMT requirements. Moreover, several developing countries support technology neutrality and therefore promote the diversity in technology standards to provide more flexibility to their national operators. In addition, private sector companies cannot vote in WRCs and national regulators are the ultimate decision makers. Therefore, it seems that developing countries are sometimes used as a proxy for the industry to support their positions.

Furthermore, it is argued that in some cases developing countries supported the study of new technologies within the ITU-R to have some sort of international regulations for these technologies under the umbrella of the ITU-R and to ensure the protection of existing services from harmful interference. In other words, as it is difficult for developing countries to resist the introduction of new technologies manufactured by the industrial countries, they prefer to have ITU-R recommendations on the usage of these technologies instead of developing usage regulations by themselves.

# Proactivity in the WRC-12

While the previous two sections show examples of support or resistance to new technologies or services, none of them were initiated by developing countries. Instead, these positions were in response to proposals by developed countries. However, the last WRC-12 witnessed a change in the pattern of developing countries positions to be proactive.

More specifically, the African and Arab countries called for the band 694-790 MHz to be allocated immediately for mobile services in Region 1 as it was in ITU Regions 2 and 3 to meet growing broadband demand. It is worth mentioning that unlike the normal procedures of discussing only items which are on the agenda of the conference; the 700 MHz issue was initiated during the conference. While several countries, mainly from Europe, opposed such proposal, WRC-12 decided eventually to allocate the 694-790 MHz frequency band in Region 1 to mobile service on a primary basis in addition to the existing primary broadcasting service.

# Reflections on Regime Theories

Recalling the neoliberalism / liberalism approach in regime analysis, it seems that the resistance to particular new services or technologies is related to the absence of mutual interest between the developed and developing countries and the differences in their spectrum policy. More specifically, while developed countries encourage certain issues such as adopting service allocation flexibility and allowing secondary market of spectrum, developing countries are in favour of strengthening government control over radio spectrum.

On the other hand, the support to particular new services or technologies could be explained by the presence of mutual interest between developing countries and the private sector. While the former tends to favour international regulations for these technologies and minimise potential interference, the latter seeks to have international acknowledgements for their products and to obtain access to the spectrum identified by the ITU-R for these technologies.

Recalling the constructivism approach in regime analysis, it is argued that the attitudes of the elite policy makers in the leading developing countries have an impact on the positions of the developing countries with regard to the 700 MHz issue. More specifically, the elite policy makers in three leading countries namely, UAE, Egypt and Nigeria, supported the 700 MHz allocation issue during WRC-12.

# Policy Implications

WRC-12 highlighted the challenges to the traditional division of the world into three regions in terms of spectrum allocation. More specifically, while Arab and African countries are located in ITU region 1 along with European countries, the WRC-12 witnessed the tendency of them to align themselves with American and Asian countries in region 2 and 3.

In addition to the decline of the ITU three regions, several countries criticised the slow decision making process of WRC which can take at least eight years when it comes to allocating new spectrum or adding new service to existing allocations. The decision of allocating spectrum to mobile services in the 694-790 MHz band during WRC-12 without being one of the agenda items or studied beforehand was, to say the least, a significant challenge to the decision making procedures.

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