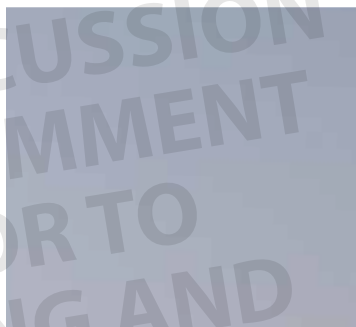
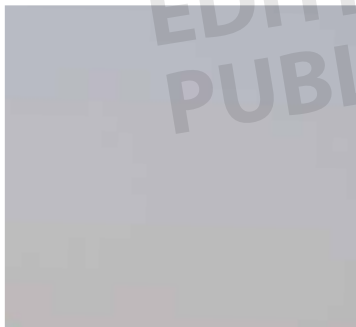
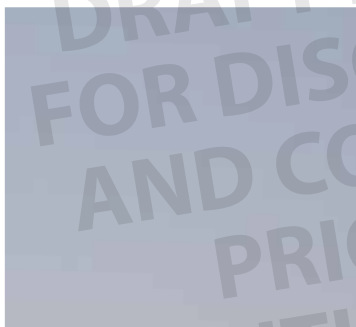


# Digital competition policy and regulation in the Africa and Arab regions

DRAFT REPORT  
FOR DISCUSSION  
AND COMMENT  
PRIOR TO  
EDITING AND  
PUBLICATION





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# EXECUTIVE SUMMARY

The disruptive years of 2020 and 2021 have generated enormous implications for the role of the ICT sector in national economies all over the globe. As the pandemic crisis conditions and emergency responses gives way to what appears to be a protracted pandemic ‘tail’ of ongoing management and adjustment, telecommunications and information technology systems have emerged even more strongly than previously as a key social and economic asset for pandemic responses and adaptations. ICT networks have enabled work and education from home as well as directly assisting coordination of resources for health management, enabling test/track/trace management and, most recently, facilitating vaccine distribution.

While COVID-19 has precipitated the need to urgently address a range of ICT regulatory and policy issues, especially in relation to competition policy, it is nonetheless true that these issues have been continuing and underlying for, in some cases, decades. The pandemic has had a catalytic effect in drawing the more urgent attention of regulators and legislators globally to concerns such as the availability and affordability of services to all groups in society, the role of digital platforms in the telecommunications ecosystem, mechanisms to secure additional investment and returns on that investment by industry stakeholders, the changing nature of market power, disinformation/misinformation online, and regulatory responses to changing technology including facilitating the transition from legacy 2G and 3G services to 4G and 5G. Addressing these many existing issues has become more urgent.

In the Arab and Africa regions in scope for this report<sup>1</sup>, where a significant proportion of nations are emerging economies, many of these problems are more pressing in general and even more so in the context of COVID-19. Restrictions on physical travel mean that groups that do not have access to telecommunications services-face material social and economic exclusion in periods of lockdown. The increased demand for telecommunications services for work, education and for other key functions, has pushed inadequate networks up against or beyond capacity. In markets where revenue per customer is low, digital platforms may reduce earnings to the point where it is difficult for operators and other stakeholders to fund investment in new infrastructure. Added to these telecommunications-specific issues is the fact that, in developing nations, governments and regulators are more highly resource constrained and may simply not have the personnel to keep up with this radically changing environment. This underscores the important role played by best practice regulation in supporting sector competition, and the role of the ITU in assisting regulators in the region to formulate effective regulatory responses to these dynamics.

This report on information and communications technologies, competition policy, regulation and analysis in the digital platform environment in the Arab and Africa regions provides an overview of global regulatory issues and assesses their relevance in the region. It describes a range of potential regulatory adaptations to these changing circumstances and provides a set of specific recommendations designed to improve regulatory intervention and outcomes with respect to competition issues for the benefit of telecommunications consumers and national economies in the region.

A central concept that emerges from this discussion of technology, market and regulatory dynamics is the need for more extensive and, in fact, new kinds of collaborative regulation. The types of collaboration included within this concept are multiple. The policy issues thrown up by the increasing prominence of digital platforms, for example, points to a need for a higher level of regulatory collaboration across telecommunications, competition policy, and arms of government concerned with data privacy and online misinformation and cultural issues. Collaboration is also needed at regional and sub-regional levels where groups of neighbouring countries with similar circumstances and similar issues can have much more influence on outcomes by acting together. Finally, at the global level there is a need to coordinate policies in relation to such issues as taxation, privacy and copyright.

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<sup>1</sup> the ‘Arab and Africa regions’ in scope for this report are shown in Exhibit 2 and Exhibit 3 below.

Section 1 provides a brief overview of the Arab and Africa regions and identifies the broad technological trends and market evolutions that are influencing regulatory development, in particular, the emergence of 'IP everywhere' and the growing market power of digital platforms.

Section 2 discusses traditional regulatory issues and approaches and how they are impacted by the broad processes of digital transformation. The rising influence of OTT services and digital platforms create unprecedented regulatory challenges as well as new opportunities to provide more innovative services to end users.

Section 3 presents a regional benchmark of competition policy and regulation in order to chart the progress that individual countries have made towards digital transformation. The statistical approach is based on data from ITU and other institutions tracking the digital readiness of each country in terms of regulation, competition and network investment. The results for each of the 22 countries in the Arab region and each of the 44 countries in the Africa region are presented in Annexes to the report.

In Section 4 the role of digital platforms and OTT services in telecommunications markets is examined, the nature of digital platform services is described, winners and losers in the digital platform environment are identified and regulatory challenges are discussed.

Section 5 focuses on taxation issues arising from the emergence of digital platforms which, of course, is a global issue. Approaches to this issue in the Arab and Africa regions are discussed as well as case studies of exemplar global approaches from the EU and France.

Section 6 provides direction for the regulatory road ahead including a comprehensive checklist of emerging regulatory priorities. Finally, Section 7 provides conclusions and recommendations (these are also provided below for convenience).

**RECOMMENDATION 1:** Prioritise the development of best practice in spectrum management emphasising spectrum trading and sharing while supporting and facilitating operator competition. Emphasise spectrum management to make available large contiguous blocks of IMT spectrum in order to encourage provision of high-performance wireless broadband services utilising 4G and 5G technology. Encourage technology neutrality in all aspects of spectrum management.

**RECOMMENDATION 2:** NRAs should seek collaboration with central government and other relevant agencies to develop shared approaches to misinformation, personal data protection, cross border data/information flows and responsiveness to cultural sensitivities in relation to content published on digital platforms. These issues may be addressed via ongoing multi-regulator collaborations, assignment of particular responsibilities to existing regulators and/or establishment of new specialist agencies.

**RECOMMENDATION 3:** Consider the need to revise existing market definitions in relation to broadband services in particular the extent to which wireless and fixed broadband markets are converging and implications for ongoing regulation of broadband markets. Critical to that is to encompass fixed wireless access (FWA) given the growth in deployments.

- RECOMMENDATION 4:** Reconsider and redefine the nature and scope of USO and USF policies to reflect the declining importance of traditional voice calling and the growing importance of all services delivered via wireless broadband and the associated need to reframe policy settings to include funding of digital infrastructure (public and private) and digital skills development.
- RECOMMENDATION 5:** Consider new policies and legislation that will encourage investment in and the more rapid and lower cost rollout of new wireless services particularly granting of rights of way for backhaul and tower sites and policies to share wireless and other digital infrastructure.
- RECOMMENDATION 6:** Explore new ways of funding national network infrastructure, including partnership models in which digital platforms share the cost of national ICT infrastructure, as is already happening in some parts of the region. Seek to reward those willing to invest in digital infrastructure and avoid burdening the ICT sector with excessive licence fees and sector-specific taxes that restrict convergence, distort competition and hinder economic development.
- RECOMMENDATION 7:** Seek proactive roles for NRAs to encourage the development of a range of ‘digital initiatives’ including digital identity, digital money and financial services and the development of better policies and institutions for the protection of personal data.
- RECOMMENDATION 8:** Those countries that have not yet joined the BEPS framework should do so, primarily because a unified approach is required to address the complex issue of taxation of digitalised services. Further, ahead of the finalisation of a global consensus on the optimal form of digital services tax that ought to be adopted, Arab African countries should, depending on their local market circumstances, consider imposing a tax on foreign digital services by imposing a VAT/GST or alternatively follow the lead of Kenya, Nigeria and Zimbabwe and implement a DST. However, given possible adverse trade consequences that could arise from imposing the tax, so this should be weighed up. Consideration should be given to the likely amount of revenue a DST would generate, both now and in the future as the consumption of digital services grows.

# 1 INTRODUCTION

## 1.1 The need for effective ICT regulation

The Information and Communication Technology (ICT) sector is an industry that has traditionally been relatively heavily regulated. There are many reasons for this: its role as an essential service; its essential facilities are not easily replicated; its importance for social and economic inclusion; and its critical role in contributing to economy-wide productivity. Perhaps the most distinctive characteristic of the industry that has attracted and shaped regulatory interventions, however, has been the natural monopoly characteristics of important parts of the sector, in particular, the industry's physical infrastructure.

Industries that are characterised by natural monopolies, along with industries that are monopolised for other reasons, are, by definition (and in practice), areas of the economy where market rivalry and competitive pressure cannot be relied upon to ensure beneficial outcomes for consumers. Therefore, much of the traditional regulatory effort in communications has been directed at encouraging competition and limiting the use of monopoly power. Access and interconnection have also central regulatory priorities aimed at ensuring anywhere-to-anywhere connectivity.

Other central regulatory concerns universal service along with issues such as spectrum management and allocation and protection of end user welfare.

Thus, ICT regulation encompasses both the efficiency and equity concerns of governments. ICT is critical for economy-wide productivity and has repeatedly been shown to significantly contribute to productivity, efficiency, and economic growth and development. Demonstrating its important equity role, the availability of telecommunication services throughout society, including those places geographically remote and groups socio-economically disadvantaged, is fundamental for achieving social inclusion and access to opportunity and services.

A broad set of central regulatory concerns and issues remained relatively stable throughout the middle to late twentieth century, but in the 1990s the emergence of mobile consumer communications began disrupting regulatory norms. After the turn of century, the emergence and increasing power of digital platforms ('big tech') accelerated the disruption of the ICT industry and have placed regulatory practices under unprecedented pressure. In 2020, the global COVID-19 pandemic has meant that numerous social and economic activities that previously occurred in the physical world have now been driven online. The use of digital tools facilitated the continuation of social and economic activity in many countries despite the lockdowns which were put in place in many countries. This widespread shift to online activity has further strengthened the position of digital platforms.<sup>2</sup>

This study examines contemporary ICT regulatory practices in the Arab and Africa regions consisting of 66 in-scope countries (see Appendices A and B). It discusses general objectives and rationales for regulation in the ICT sector comparing global best practices with the context of the Arab and Africa regions. It also compares traditional approaches to regulation with now rapidly evolving contemporary discussion on the regulatory implications of the rise of digital platforms and what is sometimes called the 'app economy' and the associated growing use of over-the-top (OTT) services.

## 1.2 General overview of Arab and Africa regions

The Arab region is home to 427 million people,<sup>3</sup> Despite the region on average enjoying a reasonably high standard of living, the vastly diverse Arab region exhibits significant disparities in stages of economic development both between and within countries – countries vary substantially in terms of resource endowment, economic and geographical size, population, and standards of living.<sup>4</sup> Nevertheless, as a whole, the Arab region has

<sup>2</sup> ITU "Pandemic in the Internet Age: communications industry responses: GSR Discussion paper on ensuring connectivity and business continuity key lessons learned (15 June 2020). Available at <https://reg4covid.itu.int/>

<sup>3</sup> The World Bank. See <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=1A>.

<sup>4</sup> <https://www.imf.org/external/pubs/ft/mena/04econ.htm>; <https://en.unesco.org/sites/default/files/unaress.pdf>



made significant progress towards global development goals since the turn of the century. In 2019, the region had a GDP of US\$8.15 trillion.<sup>5</sup>

Despite such progress, it is important to emphasise that economic growth in the Arab region is susceptible to international oil price fluctuations. While oil-rich countries are directly affected by oil price fluctuations, other Arab countries also suffer from a spillover effect which affects remittances and intraregional development funds. Due to insufficient diversification and poor integration in global value chains, economies in the Arab region are less likely to participate in growth opportunities when global productivity improves, while remaining vulnerable to global declines in resource demand. As such, there is a need to diversify economies in the region to withstand economic shocks and make the most of the growth opportunities in the economy.<sup>6</sup>

### Exhibit 1: Map of the Africa region

**Note:** use a UN map

Disclaimer: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of ITU and of the secretariat of ITU concerning the legal status of the country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

Source: UNESCO. See <https://en.unesco.org/sites/default/files/unaress.pdf>.

The total population of the African region is over 1 billion people.<sup>7</sup> In 2019, sub-Saharan Africa had a GDP of USD\$1.755 trillion.<sup>8</sup> Except for South Africa and countries in North Africa which have diversified production systems, the economies of most African countries are less developed. Further, in most of these African countries, relatively poor economic progress has been aggravated by rapid population growth, which has kept per capita gross domestic product low or, in some cases, caused it to decline. In recent years, there has been some economic growth across Africa, which saw the continent beginning to catch up with the rest of the world. In particular, Tanzania and Kenya have seen impressive increases in per capita GDP over the past decade.<sup>9</sup>

In order to maintain economic development, however, Africa will need to consider a number of policy initiatives at individual country and regional levels including consideration of population control within individual countries and the organisation of states into regional economic blocks to create internal markets large enough to sustain growth.<sup>10</sup>

Steps in this regard were taken in 2018 with agreement on the African Continental Free Trade Area (AfCFTA). It was created by the African Continental Free Trade Agreement among 54 of the 55 African Union members. AfCFTA is the largest in the world in terms of the number of participating countries since the formation of the WTO. Brokered by the African Union (AU), AfCFTA was signed on by 44 of its 55 member states on 21 March 2018.<sup>11</sup> As at 1 February 2021, 35 of the AU's member States have ratified AfCFTA.<sup>12</sup> The agreement initially requires members to remove tariffs from 90% of goods, allowing free access to commodities, goods, and services across the continent. Free trade commenced as of 1 January 2021. The general objectives of the AfCFTA are to:

- create a single market, deepening the economic integration of the continent;
- establish a liberalised market through multiple rounds of negotiations;
- aid the movement of capital and people, facilitating investment;
- move towards the establishment of a future continental customs union;
- achieve sustainable and inclusive socioeconomic development, gender equality and structural transformations within member states;
- enhance competitiveness of member states within Africa and in the global market;

<sup>5</sup> The World Bank. See <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=1A>.

<sup>6</sup> [https://www.un.org/sites/un2.un.org/files/sg\\_policy\\_brief\\_covid-19\\_and\\_arab\\_states\\_english\\_version\\_july\\_2020.pdf](https://www.un.org/sites/un2.un.org/files/sg_policy_brief_covid-19_and_arab_states_english_version_july_2020.pdf), page 17.

<sup>7</sup> [https://www.who.int/immunization/monitoring\\_surveillance/data/ga\\_afrprofile.pdf](https://www.who.int/immunization/monitoring_surveillance/data/ga_afrprofile.pdf)

<sup>8</sup> <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=ZG>

<sup>9</sup> [https://www.britishcouncil.org/sites/default/files/j147\\_next\\_generation\\_africa\\_overview\\_a4\\_final\\_web.pdf](https://www.britishcouncil.org/sites/default/files/j147_next_generation_africa_overview_a4_final_web.pdf)

<sup>10</sup> <https://www.britannica.com/place/Africa/Economy>

<sup>11</sup> <https://au.int/en/cfta>

<sup>12</sup> <https://africa-eu-partnership.org/en/afcfta> with updates on the number of AfCFTA ratifications.



- encourage industrial development through diversification and regional value chain development, agricultural development and food security; and
- resolve challenges of multiple and overlapping memberships.

The legal systems of most countries in the Arab and African regions, as well as globally, are generally modelled upon elements of five main types: civil law; common law; customary law; mixed or pluralistic law; and religious law.

Exhibit 2: Map of the Arab Region



Disclaimer: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of ITU and of the secretariat of ITU concerning the legal status of the country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

Source: LAS

In the Arab region, countries generally have mixed legal systems. For example, Iraq, Syria, Algeria and Qatar all have a mixed legal system of civil and Islamic law. Similarly, Somalia has a mixed legal system of civil law, Islamic law, and customary law. On the other hand, African countries have more diverse legal systems. For instance, South Africa's legal system is a mix of Roman-Dutch civil law, English common law and customary law.<sup>13</sup> Tanzania follows English common law, while Angola has a civil legal system. From a regulatory perspective it is important to note that each country's legal system has a significant influence on determining the legal remedies available when there has been a breach of competition policies, regulations or laws in the Arab and Africa region.

### 1.3 An overview of recent ICT history and development in the region

The number of active mobile broadband subscriptions continues to grow strongly in both the Arab and African regions. For example, in 2020, there were 82 mobile cellular subscriptions per 100 inhabitants in Africa, and 98 mobile cellular subscriptions per 100

<sup>13</sup> <https://www.cia.gov/library/publications/the-world-factbook/fields/308.html#SF>

inhabitants in the Arab region.<sup>14</sup> Further broken down to various regions, this amounts to around 477 million people in Sub-Saharan Africa who subscribed to mobile services in 2019, accounting for 45% of the population.<sup>15</sup> Similarly, by the end of 2018, nearly half of the 25 countries in the Middle East and North Africa region had unique (that is, accounting for subscribers with more than one subscription) mobile subscriber penetration rates of 70% or more. These figures are predicted to further increase in the coming years.<sup>16</sup>

Overall, while there is impressive growth in mobile broadband access in African and Arab countries, however, there remains more limited access to fixed broadband and fixed telephone services. In the Arab area, there were 8 subscriptions per 100 inhabitants in 2020. The figures for fixed broadband subscriptions in Africa are even lower, with only 1 subscription per 100 inhabitants, respectively.<sup>17</sup> This disparity in mobile compared with fixed network connections reflects the better affordability and availability of mobile in these regions.<sup>18</sup>

There are several barriers to improving connectivity and ICT services in the African and Arab regions. First, customers need to trust the online environment for the digital economy to achieve its full potential. In many Arab and African jurisdictions, however, the protection of privacy and safeguarding of personal data is provided under general provisions of law rather than specific data privacy laws. Streamlining and simplifying companies' compliance obligations through the implementation of laws that are underpinned by similar underlying privacy principles can have a number of advantages. These include saving time and resources for companies, while also preventing misuse of personal data and encouraging responsible innovation. Establishing common privacy principles can also build trust among governments and help them ensure that citizens' data is protected as it travels across borders.<sup>19</sup>

Other significant barriers to the Africa's fixed broadband penetration lies in the enormous gaps in broadband infrastructure, limited availability of broadband services, as well as the high cost of access to broadband services where they do exist.<sup>20</sup> Indeed, the continent has the least affordable broadband services in the world.<sup>21</sup> Africa has the lowest Internet usage rate in 2019 (at only 28.2%), and the lowest number fixed telephone and fixed broadband subscriptions per 100 people.<sup>22</sup>

The fundamental problem in the region, particularly in many parts of Africa, is that from a ICT operator perspective markets are often very thin, meaning that the total revenue available from ICT user per geographic area is quite low. This is partly because per capita incomes and Africa are low but also because many African nations have relatively low proportions of the population is living in urban areas. This means that the commercial returns to investment in infrastructure tend to be low. A concise summary of the key African challenges identified by the ITU is contained in Exhibit 3 below.

**Exhibit 3: Possible consideration for the Africa region to address affordability and meaningful connectivity**

**A number of means to address challenges in affordability and meaningful connectivity could be considered:**

- **Adopt long-term investment friendly strategies that ensure the predictability and regulatory certainty needed to promote business and encourage sustainable investment models for broadband connectivity.**
- **Explore new business models and strengthen partnerships for massive digital infrastructure and digital skills development, giving priority to content and meaningful applications development in key sectors (education, health, agriculture, etc.).**

<sup>14</sup> <https://www.itu.int/en/ITU-D/Statistics/Pages/ff2020interactive.aspx>

<sup>15</sup> [https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/09/GSMA\\_MobileEconomy2020\\_SSA\\_Eng.pdf](https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/09/GSMA_MobileEconomy2020_SSA_Eng.pdf)

<sup>16</sup> see, for example, <https://www.gsma.com/mobileeconomy/sub-saharan-africa/>

<sup>17</sup> <https://www.itu.int/en/ITU-D/Statistics/Pages/ff2020interactive.aspx>

<sup>18</sup> *ibid.*

<sup>19</sup> [https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA\\_MobileEconomy2020\\_MENA\\_Eng.pdf](https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA_MobileEconomy2020_MENA_Eng.pdf)

<sup>20</sup> [https://www.uneca.org/sites/default/files/PublicationFiles/towards\\_improved\\_access\\_to\\_broadband\\_inafrica.pdf](https://www.uneca.org/sites/default/files/PublicationFiles/towards_improved_access_to_broadband_inafrica.pdf)

<sup>21</sup> *ibid.*; <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf>

<sup>22</sup> <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf>

- Review universal service fund (USF) models and approaches, including exploring new community network access models and public community access points (Wi-Fi hubs) for underserved and rural communities.
- Strengthen competition along the entire ICT value chain, especially for last-mile connectivity.
- Operationalize regional Internet exchange points (RIXPs) and invest in network-based content delivery platforms to drive down costs and ensure that Internet traffic stays national and, at most, regional.
- Invest in regional and national data centres.
- Review and harmonize licensing regulation including spectrum allocation and pricing approaches and set up incentives and or obligations for infrastructure sharing.
- Support local digital innovation and enable new emerging technologies (IoT, platforms, AI, cloud computing) and satellite solution for wide scale rural connectivity.

Source: ITU, Digital Trends in Africa, Information and communication technology trends and developments in the Africa region 2017-2020, March 2021, page 19

To address the significant gaps in connectivity, new services in Sub-Saharan Africa extended satellite-enabled broadband from urban areas further to remote regions in 2019.<sup>23</sup> In addition to such initiatives, however, regional cooperation is also crucial to not only enhance broadband availability, but also to ensure the optimal use of the available infrastructure to improve digital connectivity across the continent.<sup>24</sup>

#### 1.4 Regulatory challenges in emerging markets

The preceding discussion shows that many of the in-scope countries for this study have emerging economies characterised by relatively lower GDP per capita. This section examines regulatory challenges that are characteristic of emerging economies.

As described in the previous section, many of the in-scope countries in this study are relatively underdeveloped economically. Lower per capita incomes and relatively large rural populations means in ICT markets and can, depending on the market result in below average returns in relation to infrastructure investment. How governments and regulators respond to these challenges depends upon their policy settings. At the broadest level, the concerns of governments and regulators can be characterised as focusing on efficiency or equity issues.

ICT industry policy and regulatory settings impact on economic efficiency because ICT services play such an important role in promoting economy wide productivity and also have a significant impact on level of innovation in national economies. This is especially the case in our connected world where increasingly commerce is online. Therefore, governments wish to ensure that ICT services are widely available and affordable to promote economic growth and improved living standards.

Governments are also concerned, to varying extents across the globe, with equity issues. Equity-oriented policies are concerned with the distribution of benefits across society. Many governments operate distribution policies designed to redistribute resources from groups with higher incomes to those with lower income.

Because ICT plays such an important role in access to information and services and therefore opportunities for employment, business and economic development, governments and ICT regulators typically intervene in markets to encourage or require operators to make services available in geographic areas or to socio-economic groups where these services would not otherwise be available. The rationale for such intervention may be to encourage economic development in these areas as well as be driven by equity considerations such as increasing access and inclusion.

These considerations form the general rationale for interventions such as universal service obligations (USO) and regulatory requirements to meet mandated coverage targets or undertake defined infrastructure rollouts in relation to ICT or spectrum licenses. While gaps remain, competitive cellular mobile service offerings have significantly helped

<sup>23</sup> <https://www.cio.com/article/3509583/how-satellites-are-meeting-demand-for-connectivity-in-africa.html>

<sup>24</sup> [https://www.uneca.org/sites/default/files/PublicationFiles/towards\\_improved\\_access\\_to\\_broadband\\_inafrica.pdf](https://www.uneca.org/sites/default/files/PublicationFiles/towards_improved_access_to_broadband_inafrica.pdf)

bridge the 'digital divide' and least for voice and increasingly for mobile broadband. Because these interventions sometimes require operators to provide services in areas which are non-economic, cross subsidies are required from some source. Cross subsidies may be provided by taxpayers, ICT operators, other ICT users (in economic markets) or international aid donors.

Governments in lower GDP counties are typically highly fiscally constrained and therefore have limited ability to subsidise ICT infrastructure. Indeed, this is a common feature even in developed country markets where ICT infrastructure has generally been left to the private sector to fund. Additional complications may arise in markets where governments own or have a significant shareholding in the incumbent ICT operator. In such situations, governments have an interest in maximising revenue from the operations of its ICT company which may conflict with the implementation of best practice regulation and the promotion of sector competition.

Fiscal limitations may also mean that insufficient resources are available to fund national regulators and this may manifest as insufficient skilled staff numbers or insufficient budgets to undertake appropriate training and capacity building. The widening and the deepening of the skillsets required by all sector regulators including those in emerging regulators (including e.g. privacy, data protection, cybersecurity, child online protection, mobile money and e-payments, IoT, cross-border cloud issues, online content regulation, etc) make the task even more challenging. While collaborative regulation is essential this is far from easy.

Regulatory agencies in emerging countries may also have insufficient resources or contracting limitations which foreclose on their ability to attract international consultants who can provide best practice advice. When domestic operators are able to get world class support from their Group headquarters and other regulatory support, emerging country regulators are often outmatched.

When it comes to the regulation of digital platforms, such imbalances are magnified and amplified. Digital platforms have resources greater than many Governments and certainly more than most sector regulators. Smaller developing countries will be unlikely to be able to influence the behaviour of global technology companies not only because of the challenges of mounting such arguments but because digital platforms are, by their nature, home and large market centric.

Multiple different legal systems and laws, in the Arab-African region, results in a number of complications including confusion interpreting different legal requirements and obligations across jurisdictions, end users not being able to easily use digital platform apps in local languages, the absence of any effective moderation by digital platforms on content in these jurisdictions, problems with effective communications between national governments and digital platform senior management and/or their public relations or customer facing conduits.

Different cultural perspectives, electoral approaches, values and religious views in many African and Arab societies are therefore rarely taken into account in a singular unitary approach to *inter alia* content and its classification and distribution by large global content providers. In addition, many African countries have their own languages that are not spoken widely (even though English, French, Arabic, Spanish and Portuguese are widely spoken across various in-scope countries).

### 1.5 Technology trends impacting regulatory approaches

Changes in technology continuously impact regulatory approaches. Since the telecommunication sector is essentially concerned with the transport of data and information, it is one of the industries most exposed to the enormous progress of information technology. This progress has been driven by the increasing digitisation of all forms of content and information and the relentless progress of Moore's Law.

The procession of technological changes which have driven the industry are too numerous to detail in this document but are well known to industry practitioners and regulators. From the early use of lasers in undersea cable communications, to the digitisation of telephone exchanges, and the emergence of mobile telephony in the 1990s, technological change has delivered massive benefits to consumers and demanded that regulators

constantly reassess industry definitions and other foundations of their regulatory principles and approaches.

The rapid emergence of the World Wide Web into popular awareness in the mid to late 90s preceded an all-encompassing wave of digitisation of content and communications which has led to the emergence of OTT services and the emergence of broadband data delivered by fixed line or wirelessly as the dominant communications issue of the 2020s.

Technological change frequently leads to changes in commercial dynamics, industry structure and the emergence of new dominant companies in almost all industries. As broadband services have become increasingly ubiquitous and data speed and reliability have improved, OTT services have increasingly become more competitive with traditional ICT services. As discussed throughout this document, this creates threats but also opportunities for traditional carriers and it creates new challenges for regulators which are discussed at length below.

## 1.6 The rise of digital platforms

The rise of digital platforms has probably been the most significant industrial phenomenon of the last two decades. As Exhibit 3 shows, the share of technology companies in the value of the top ten most valuable publicly traded companies in the world has increased from 8.9% in 2007 (due entirely to Microsoft in the year that Apple launched the iPhone) to 86% in the third quarter of 2020.

**Exhibit 4: The share of technology companies in the value of the top ten most valuable publicly traded companies globally**

2007 4th quarter	Market cap \$ billion	2020 3rd quarter	Market cap \$ billion
Petrochina	724	Apple	1,981
Exxon Mobil	511.9	Microsoft	1,592
General Electric	374.6	Amazon	1,577
China Mobile	354.1	Alphabet	999.6
I&C Bank of China	339	Alibaba Group	795.4
Microsoft	333.1	Facebook	746.1
Gazprom	329.6	Tencent	646.8
Royal Dutch Shell	269.5	Berkshire Hathaway	509.5
AT&T	252.1	Visa	425.5
Sinopec	249.6	TSMC	420.4
TOTAL (\$ billion)	3,738		9,693
TOTAL TECH (\$ billion)	333.1		8,338
% TECH	8.90%		86%

Source Systems Knowledge Concepts



The term ‘digital platform’ is broad, general and somewhat imprecise it has been adopted in this report because of its growing global acceptance and its description of what such companies do – they are digital platform for engagement, sales, advertising etc. The US Subcommittee on Antitrust, Commercial and Administrative Law<sup>25</sup> focused on Facebook,

<sup>25</sup> Investigation of Competition in Digital Markets, Subcommittee on Antitrust, Commercial and Administrative Law 2020

Google, Apple and Amazon. The 2019 Digital Platforms Inquiry by the Australian Competition and Consumer Commission focused mostly on Google and Facebook. Other companies such as Microsoft are often included in the discussion of regulatory issues arising from the emergence of 'big tech'. The ITU has developed an analysis of digital platforms that focuses on their multi-sided market characteristics and market definition using the "small but significant non-transitory increase in price" (SSNIP) test<sup>26</sup>.

Regulatory issues created by the rise of digital platforms and traditional ICT regulatory issues intersect at several points. Digital platforms offer a range of over-the-top (OTT) services, some of which compete directly with the services offered by ICT carriers and some of which are close substitutes. Most obviously, products such as FaceTime, Skype, WhatsApp and a number of others offer messaging voice and video calling services that compete with traditional carriers. Social media platforms also offer various publishing and communication services that act as near substitutes for direct communication services. Typically, the message services offered by digital platforms are more feature rich than those previously available. A clear example is the rich messaging services compared with traditional SMS messaging. While a substantial proportion of messaging traffic has moved away from SMS, SMS messaging is still used by consumers because of its high level of interoperability and its use in a range of key activities like two factor authentication (2FA) for banking and emergency messaging.

Thus, digital platforms have reduced demand for operator value-added services and have pushed operators towards being commodity bandwidth suppliers. The impact of this is to lower operator margins and profitability raising concerns about diminishing their capacity to undertake ongoing investment. At the same time, however, it is likely that the services provided by digital platforms have generated increased demand for bandwidth which tends to drive increases in revenue for operators.

The increasing scale and market power of digital platforms raise a number of other issues that are beyond the traditional scope of national regulatory agencies (NRAs). These additional issues include the abuse of monopoly power, disruption of media and information markets, privacy and use of personal data, extension of monopoly power into associated markets, and predatory acquisition of potential competitors. These issues are discussed in more detail in Section 4.

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<sup>26</sup> see <https://digitalregulation.org/approach-to-market-definition-in-a-digital-platform-environment/>



## 2 TRADITIONAL REGULATORY ISSUES AND APPROACHES AND IMPACTS OF DIGITAL TRANSFORMATION

### 2.1 Context

Over the past 10 years digital transformation has driven significant market and regulatory disruption. This disruption, which is set to continue, extends to almost all corners of the globe and is increasingly affecting the Africa and Arab (A&A) regions, and is primarily the result of a transition to data-centric business models based on digital platforms<sup>27</sup>.

Digital platforms are embedding market power and, in a race for scale and scope, leading to transnational markets. This means that regulation is increasingly beyond the scope of individual national regulatory authorities (NRAs). NRAs have to work in regional collaboration if they are to be effective. This is especially the case in A&A where there is neither a legacy of strong competition nor of effective regulation, but regional bodies<sup>28</sup> including WATRA, CRASA, GCC and AREGNET have played an increasingly important role in driving and harmonising policy and regulation. Fratel<sup>29</sup> - French speaking network of telecommunications regulators has also played a role.

Policy makers and regulators are having to construct robust market and regulatory frameworks within their countries while at the same time dealing with the emergence of transnational digital platforms and services. Legacy national services still exist, and traditional regulation of services and prices will continue for some time, but traditional services are increasingly constrained by over-the-top (OTT) applications on transnational digital platforms. In A&A the emergence of OTTs has often been seen as a threat to established supply chains and government revenue sources, but they can also be seen as creative disrupters that may herald a more efficient and effective digital services sector.

To realise the benefits of digital transformation, the regulatory frameworks in A&A need to promote and support the strengthening of national infrastructure. All digital platforms and services need access to national infrastructure for delivery and customer engagement. The focus of NRAs should therefore be on ensuring this access is available with sufficient capacity, at acceptable quality of service (QoS) and on fair terms.

The ever-increasing demand for data puts pressure on national network infrastructure, especially access networks. Infrastructure costs are highest in the least developed countries, landlocked countries, small island states and in rural and isolated areas: all of which characteristics are prevalent in the A&A regions. This means that the investment requirements to provide adequate bandwidth are especially burdensome in A&A and in some cases they may be incompatible with competition.

Given the likelihood of limited physical network competition in A&A, licensing requirements and conditions attached to state funding are critical to success. National regulatory authorities should also explore partnership models in which digital platforms share the cost of national ICT infrastructure, as is already happening in some parts of the region.

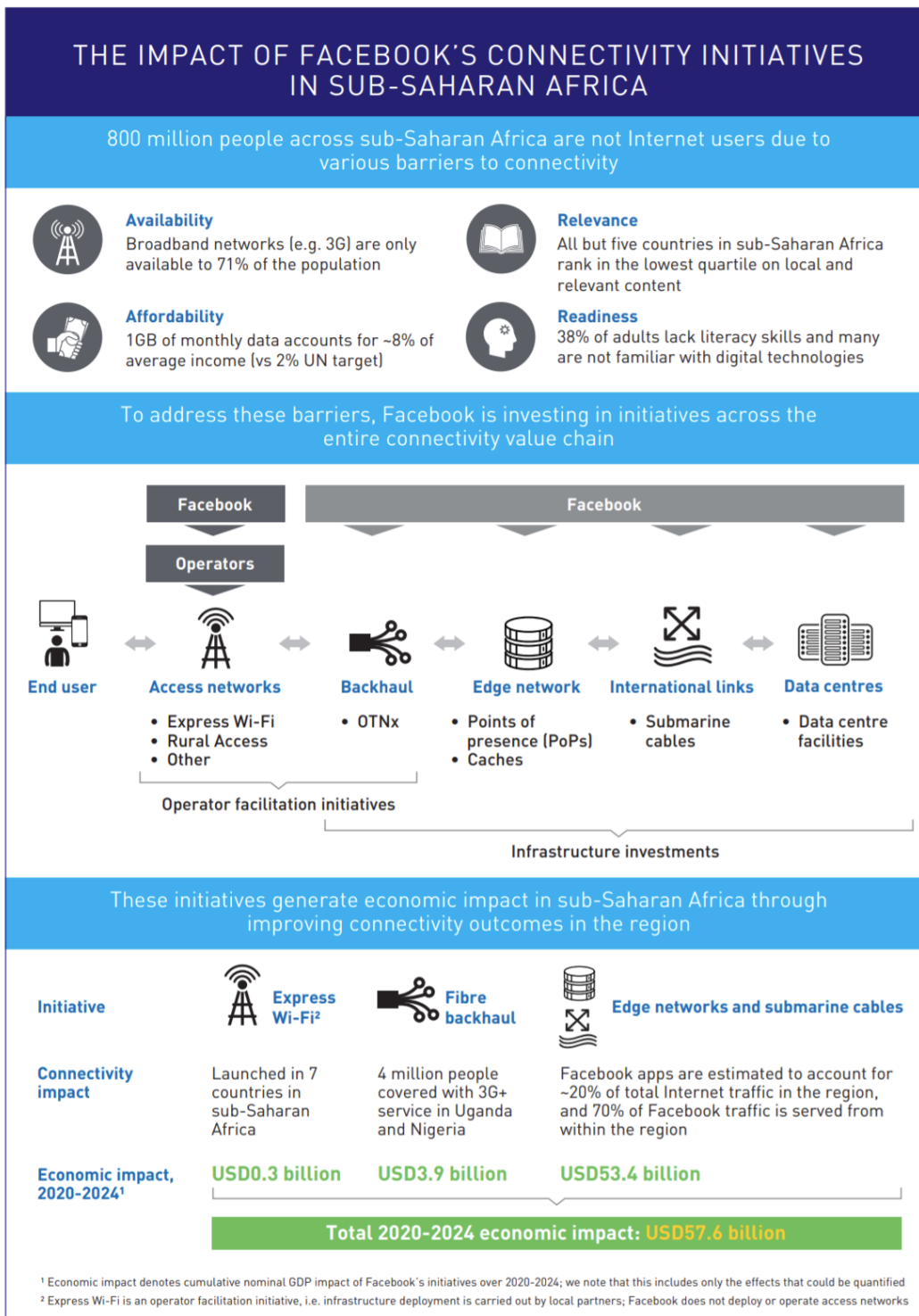
<sup>27</sup> For a full analysis of these trends please consult the ITU-World Bank Digital Regulation Handbook and Platform – <https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/DigiReg20.aspx> – especially the module on competition and economics.

<sup>28</sup> Refer to [www.itu.int/en/ITU-D/Regulatory-Market/Pages/RA\\_Portal/RA\\_AFR.aspx](http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/RA_Portal/RA_AFR.aspx) and [www.itu.int/en/ITU-D/Regulatory-Market/Pages/RA\\_Portal/RA\\_ARB.aspx](http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/RA_Portal/RA_ARB.aspx)

<sup>29</sup> [www.fratel.org](http://www.fratel.org)



Exhibit 5: Facebook’s investment in Africa



Source: <https://www.analysismason.com/contentassets/f8a396952f9c4481982c674724d85356/the-impact-of-facebooks-connectivity-initiatives-in-the-ssa-region---30-june-2020.pdf>

## 2.2 Regulatory market analysis

### 2.2.1 Traditional approach

Before digital disruption, telecommunication networks, services, and markets were primarily national in scope and for the provision of a limited and standardized set of telecommunication services to end users. Most countries, including most of A&A, had moved well beyond the limitations of monopoly supply, offering some degree of competition and consumer choice. However, until recently, the supply of telecommunication services was largely a one-way transaction in a single-sided market.

Under the auspices of NRAs, controlling a quasi-competitive market, the supply chain was split into wholesale and retail components. Wholesalers were subject to economic regulation especially where they controlled bottleneck facilities or had significant market power (SMP)<sup>30</sup>. Retailers were generally not regulated or lightly regulated (except for consumer protection and affordability), because effective competition could arise based on equal access to wholesale inputs.

Economic regulation has traditionally been based on a market analysis procedure that comprises three parts:

- **The definition of markets.** From a regulatory perspective markets are defined on the basis of demand and supply substitutability, with the boundaries of a market based on behavioural responses to a small but significant non-transitory increase in prices (SSNIP) by a hypothetical monopolist providing a single focal product in that market. Markets have by default generally been defined on a national level (occasionally with regional variants).
- **The assessment of dominance or significant market power (SMP).** Although many economic factors are involved in creating or sustaining a dominant market position, much legislation and most regulatory practice has focused on an assessment of market share (usually revenue-based) as this is the most easily quantified and validated measure. Regulators sometimes assess a range of other relevant factors, such as market concentration, access to finance, economies of scope, technological advantage, and the prospect of countervailing buying power.
- **The imposition of proportionate remedies.** Normally remedies are imposed ex ante on SMP suppliers in order to prevent them engaging in anticompetitive practices that, absent regulation, they might reasonably be expected to practise. The remedies that are chosen should be the least intrusive remedies that adequately address the specific competition concerns identified. The major categories of commonly imposed remedy are:
  - An obligation to supply
  - Non-discrimination
  - Transparency (e.g. publication of reference offers)
  - Cost-based pricing.

Exhibit 6: The three stages of regulatory market analysis and intervention



<sup>30</sup> ITU-T Recommendation D.261 provides regulatory principles for market definition and identification of operators with significant market power (for international services)

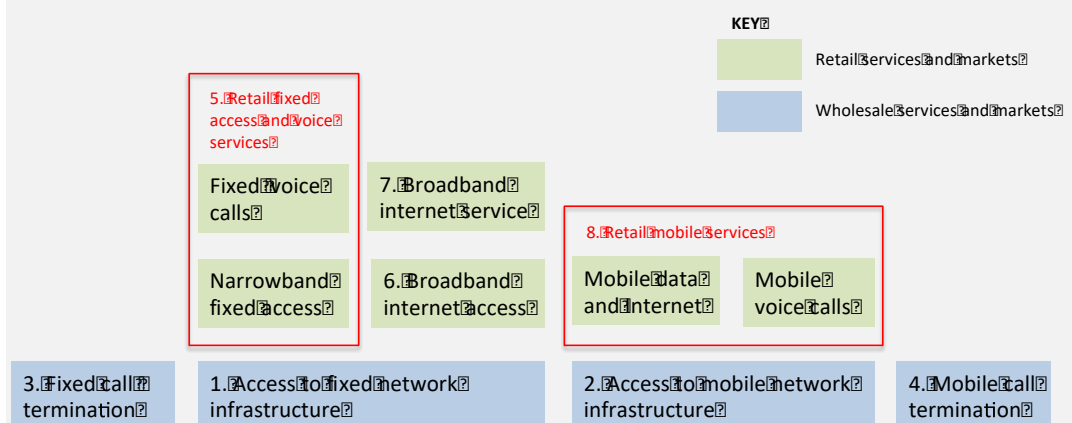
This three-step approach to regulatory market analysis was pioneered in the European Union, but it has become common practice in A&A as well. Countries as diverse as Saudi Arabia, Oman, Comoros, Liberia, Lesotho and Malawi have all conducted detailed market analysis and used the determination of SMP as the trigger for other forms of regulation such as access and interconnection.

**Case study: Palestine**

The ICT sector in Palestine faces all the same challenges that are being faced in other countries around the world. The sector is characterised by rapid technological change and the capital investment programmes that are required to deliver modern, high-capacity broadband infrastructure do not sit easily with the principles of competition. Regulations that are designed to encourage competitive supply or allow for open access to the networks of dominant operators can have the unintended consequence of limiting investment incentives. At the same time, the competitive necessity of making those investments, be it in network infrastructure, service-delivery platforms or sophisticated marketing programmes, makes it increasingly difficult for smaller service providers to compete.

The Ministry of ICT and Information Technology (MTIT) recognised that the best way forward was to allow market forces to set the optimally efficient prices in segments that are, or could become, effectively competitive, while at the same time ensuring that regulatory intervention is applied to segments which are not effectively competitive. Under the assistance of the ITU, the MTIT conducted a review and analysis of wholesale and retail ICT markets in Palestine. The review encompassed both consideration of the definition of relevant ICT markets and an assessment of the degree to which competition is effective in each identified market. The MTIT also undertook an assessment of which remedies would be appropriate to implement in those markets where SMP was found

Having examined the pattern of supply and future trends within the Palestinian ICT sector, a conceptual framework was developed based on eight identifiable markets as shown in the diagram below



Each of the eight markets was analysed in the following four steps:

1. The scope of the market was defined based on an analysis of demand-side and supply-side product substitution;
2. The suitability of ex-ante regulation was determined on the basis of three cumulative criteria: high and non-transitory barriers to market entry; no trend towards effective competition; ex-post remedies are unlikely to be sufficient to address concerns related to market dominance;
3. Suppliers with significant market power (SMP) were identified based on market share and a range of other indicators relevant to each market (e.g. control of infrastructure not easily duplicated, economies of scale and scope, vertical integration, countervailing buyer power);
4. Remedies were identified, these being appropriate to the causes of SMP and proportionate to the scale of market failure identified.

One of the main advantages of market analysis is that it provides a foundation for ex-ante regulatory intervention in circumstances where ex-post interventions are difficult to substantiate. This is often the case in A&A, where competition law is generally underdeveloped. However, where the legal framework supports it, ex-post remedies may be imposed when specific anticompetitive practices are identified (e.g. predatory pricing, exclusionary behaviour, tying and bundling). The market analysis process to be followed is similar to that for ex-ante regulation: the aim is to impose proportionate remedies on SMP suppliers. However, ex-post regulation requires the regulator to prove that some

behaviour has had anticompetitive effect or intention, and then to impose remedies that will remove and recompense for any harm caused.

## 2.2.2 The impact of digital transformation

The rise of digital platforms and the consequent increase in competition from service providers independent from telecommunication network operators, has radically altered the landscape in which regulators attempt market analysis. In particular:

- Markets can no longer be presumed to be national in scope; and market analysis is harder for NRAs who cannot demand or easily obtain relevant data from global players.
- Market definition is complicated by the presence of two-sided digital platforms – is there a single market covering both sides of the platform or two different markets?
- The SSNIP test is hard to use in markets where services are often zero-rated, bundled, or have usage-independent prices. Which price should be raised? What constitutes a SSNIP when the base price is zero?
- One dominant player in a market may no longer be an undesirable (or avoidable) state of affairs. One platform with high market share may be the welfare-maximizing market structure reflecting high network effects. An explosion in demand for data leading to large-scale network investment may be, in many cases, incompatible with competitive market models.
- SMP designation (and regulatory remedies) therefore needs to be based on a much broader range of indicators (e.g. service differentiation, congestion, access to data, innovation, barriers to entry, and barriers to expansion.)

Many behaviours previously considered anticompetitive are now part and parcel of legitimate business models e.g. some pricing below marginal cost and some tying of services are common features of digital platforms. There will still be genuine concerns about predatory pricing and exclusionary behaviour, but they will be much harder to detect and prove.

Traditional ex-ante regulation based on market definition, dominance, and determination of remedies will, of course, continue to be important for national markets and specifically for the regulation of network infrastructure access. More generally, however, competition regulation is tending to refocus on ex-post symmetrical regulation (the same rules applied to all suppliers) with intervention targeted at specific cases of competitive harm. Symmetrical regulation will be based on broad regulatory principles such as fair, reasonable and non-discriminatory access to resources, supported by high levels of cross-sectoral regulatory co-operation.

These changes are necessary because:

- The traditional focus on SMP-based regulation was intended to enable others to compete fairly but digital platforms, access networks, and even entire national broadband networks, may now sometimes be best delivered as virtual monopolies
- Even where competition exists it is increasingly hard to define markets, determine thresholds for SMP, and determine and apply appropriate remedies
- Under the current regime, some cross-border operators are too big to fail and/or too large to challenge – they can and do act with regulatory impunity.

However, for ex-post regulation to be effective, countries in A&A need to establish and adequately resource separate competition authorities (or assign equivalent powers to the NRA).

## 2.3 Access and interconnection

### 2.3.1 Traditional approach

Any-to-any connectivity was a fundamental requirement in newly liberalized ICT markets, ensuring that all users could connect with each other regardless of network operator. Interconnection between competing networks was therefore essential and, because of the imbalance of power between incumbents and new entrants, commercial negotiation

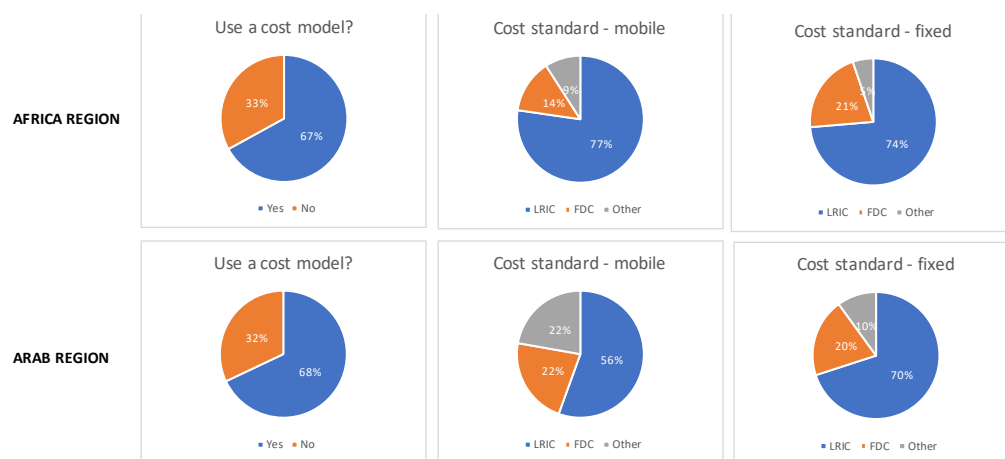
could not produce fair, reasonable and pro-competitive outcomes. Regulated interconnection was the bedrock of market liberalisation.

The principle of regulated interconnection was extended to include wholesale access to any technically or commercially feasible component of an incumbent or SMP operator’s network. The aim was to create a “level playing field” in which new entrants could choose, without prejudice, between building their own infrastructure and renting from the incumbent, through either access or interconnection. Given this regulated access to necessary wholesale inputs, new entrants could replicate the retail offers of the SMP provider.

For the entrant’s build-or-buy decision to be neutral, regulated access and interconnection charges had to be cost based. Much thought and effort went into determining the most efficient cost-standard to be used, gradually settling on the use of long run incremental costs with a mark-up for common overhead costs (LRIC+). Most regulators constructed their own cost models bottom-up (i.e. simulations of actual networks based on efficient economic and engineering practices), giving rise to the acronym BU-LRIC+ as the widely adopted cost-standard. However, in some places (most notably the European Union) even lower rates, based on “pure LRIC” were used for call termination. Pure LRIC represents the difference in total costs with and without the supply of the termination service, divided by the number of call termination minutes.

Although A&A was slower to adopt cost-based interconnection than other parts of the world, NRAs have worked hard in recent years to construct cost models or create benchmarks so as to drive down interconnection charges and enhance competition. The following diagram shows the latest update of different costing methodologies in A&A.

**Exhibit 7: Regulatory cost models in use in the Africa and Arab Regions**



Source: ITU Tariff Policies Database, 2020

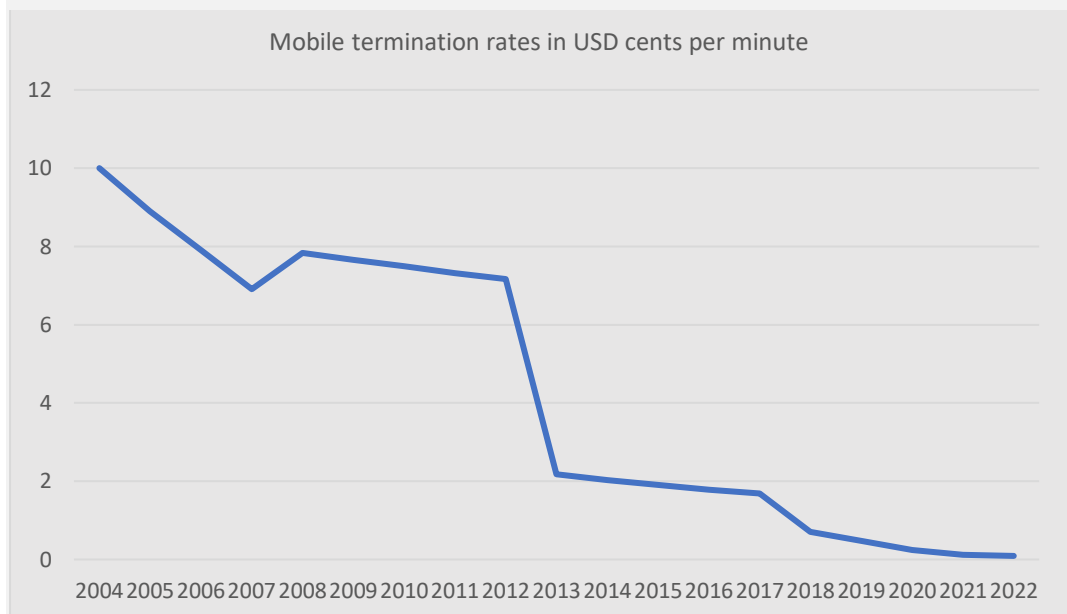
### 2.3.2 The impact of digital transformation

Whereas regulated interconnection had a critical role to play when voice was the predominant application in the ICT sector, it is far less important in a data-driven environment. Data services provide connectivity between users and a central cloud-based data server. They do not generally connect users on different networks and even where they do (e.g. picture and video messaging) they do this at the application layer over the internet.

The importance of regulated cost-based interconnection is therefore declining, but at the same time there is a growing need for regulated cost-based access to facilities including access network infrastructure. Regulatory cost models will therefore continue to play an important role, but they will pivot towards access and away from interconnection in the years ahead.

**Case study: Tanzania**

Tanzania was one of the first countries in Africa to establish interconnection rates using bottom-up long run incremental cost (BU-LRIC) cost models. The first models were constructed for the Tanzania Communications Regulatory Authority (TCRA) in 2004 and they have been updated every 4-5 years since, most recently in 2017. The chart below shows how the mobile termination rate has fallen over this period, based on the TCRA's interconnection rate determinations<sup>31</sup>.



Whilst there are many factors that affect the mobile termination rate, including differences over time in the costing models deployed by TCRA, the single major factor is the increase in data traffic. When the first models were constructed the mobile network was almost entirely used for voice traffic, so the entire costs of the network were allocated to voice services and interconnection traffic bore its proportion of those costs. By 2017 when the most recent model was constructed, 98% of the network traffic load was for data services, with the result that most of the shared network costs were allocated to data services, and a far lower proportion was borne by voice interconnection. This trend is set to continue: all voice traffic is marginal to the cost of a modern mobile network.

## 2.4 Infrastructure sharing

### 2.4.1 Overview and traditional approach

Infrastructure sharing in the ICT sector refers to sharing network components and associated non-electronic and physical infrastructure. It can help to expand coverage, reduce costs, avoid infrastructure duplication and maximise existing network facilities, and is an alternative to mergers which often come with increased regulatory concerns.<sup>32</sup>

In the early days of liberalization there was persistent debate about the merits of facilities-based competition and services-based competition. The former prioritized the competitive supply of infrastructure, even if it resulted in less consumer choice in terms of service providers. Even where facilities-based competition was promoted, regulators soon realised that the barrier to market entry was high, and the “ladder of investment” theory was proposed. The idea was that if various forms of infrastructure access were possible, then investors would be able to choose their entry point and then to increase their investment step-by-step until they became full facilities-based operators. This required access at every technically and commercially feasible point in the network, to provide a full suite of different infrastructure sharing options including passive (civil engineering) assets, active electronics, and radio frequency spectrum.

Infrastructure sharing can impact the level of competition in the ICT sector. It can increase competition by reducing barriers to entry, particularly the upfront costs of building

<sup>31</sup> The most recent determination can be found at: <https://www.tcra.go.tz/report/Interconnection%20Determination%20No.%205%20Issued%20in%20December,%202017>

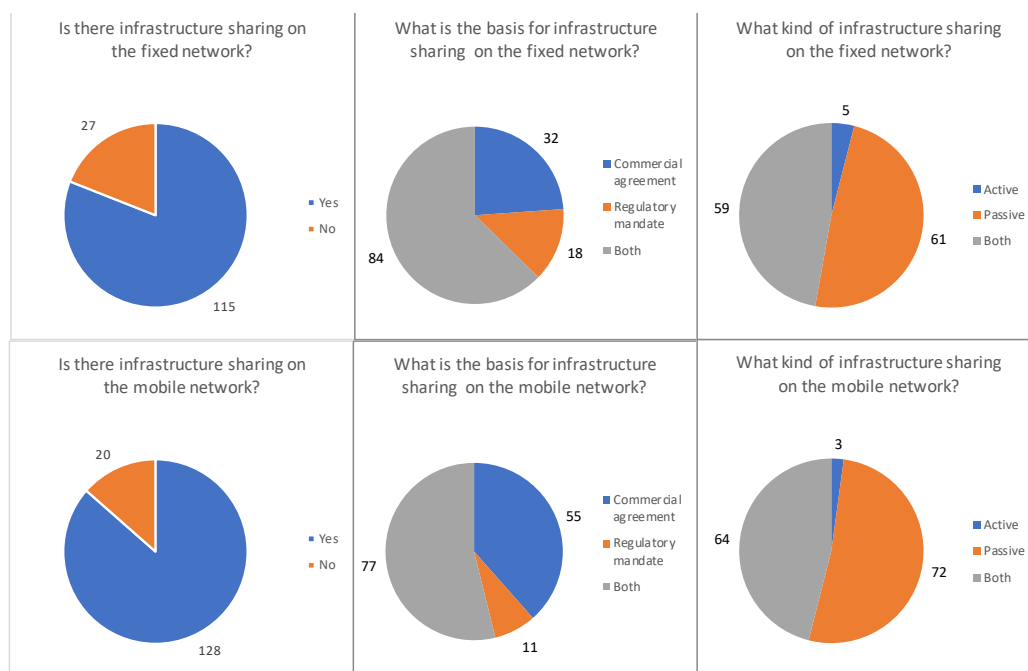
<sup>32</sup> Asia-Pacific Telecommunity, SATRC Report on Policy and Regulatory Aspects of Infrastructure Sharing, 13-15 December 2018.

infrastructure that may have priced smaller competitors out of the market. This is particularly beneficial in emerging markets, where the capital needed to purchase expensive infrastructure may otherwise be lacking. Increased competition can lead to greater technological advancements as mobile network operators (MNOs) look to optimize their operations and take advantage of economies-of-scale and efficiencies that will benefit the MNOs' businesses. However, infrastructure sharing must be effectively regulated to ensure that it has a beneficial impact on competition.<sup>33</sup> Sharing infrastructure requires cooperation between competitors, and if this is not carefully monitored, it could lead to competitive collusion.<sup>34</sup>

The benefits of infrastructure sharing extend beyond increasing competition in the ICT sector. Infrastructure sharing can also reduce lease rates because the rent can be shared among multiple MNOs who all use the one piece of infrastructure, such as a tower. It is an effective way to minimize the environmental impact of building infrastructure by avoiding unnecessary duplication and can also reduce the energy and operating costs of MNOs and lessen the demand on a country's national grid.

Network sharing is a common practice in almost every telecom market in the world, but the level of sharing can vary based on the market and government policy.<sup>35</sup> In some markets, infrastructure sharing is more regulated than in others, but there has been a general trend of encouraging infrastructure sharing, including active sharing.

**Exhibit 7: Infrastructure sharing in the Africa and Arab Regions**



Source: ITU Tariff Policies Database, 2020

Prior to the rollout of 4G networks, infrastructure sharing was less common and, for the most part, regulators would only allow passive sharing.<sup>36</sup> However, with the high costs of 4G and 5G infrastructure, both passive and active sharing have been utilised more by regulators to try and lower the costs of services. Whether regulators permit infrastructure sharing depends on factors such as maturity of markets, level of competition, infrastructure status, and so on.<sup>37</sup>

<sup>33</sup> Davide Strusani and Georges V. Hounbouon, IFC, *Accelerating Digital Connectivity Through Infrastructure Sharing*, Note 79, February 2020, Available at [www.ifc.org/wps/wcm/connect/2d3c4eff-12a8-4b0b-b55d-9113a950ed33/EMCompass-Note-79-Digital-Infrastructure-Sharing.pdf?MOD=AJPERES&CVID=n2dwWtn](http://www.ifc.org/wps/wcm/connect/2d3c4eff-12a8-4b0b-b55d-9113a950ed33/EMCompass-Note-79-Digital-Infrastructure-Sharing.pdf?MOD=AJPERES&CVID=n2dwWtn)

<sup>34</sup> <https://www.telecomtv.com/content/business-models/why-is-infrastructure-and-investment-sharing-so-fraught-with-difficulty-38764/>

<sup>35</sup> Arthur D Little, *Network Sharing in the 5G Era*, November 2020.

<sup>36</sup> Hungarian Academy of Sciences, *Competition Policy Issues in Mobile Network Sharing: A European Perspective*, 2018.

<sup>37</sup> *Ibid.*



In most jurisdictions, the terms of infrastructure sharing are set through commercial negotiation, but regulators may publish guidelines and may be required to resolve disputes.

Best practice principles for infrastructure sharing regulations from ITU experience include:

- The regulatory framework should apply to all sector participants.
- All types of sharing should be permitted as long as competition is not adversely affected.
- All sector participants should have the right to request the sharing of infrastructure that has been mandated for sharing.
- All sector participants when requested are obliged to negotiate sharing of their (mandated) infrastructure.
- Operators designated as having SMP in a passive or active infrastructure market are required to publish a reference offer approved by the NRA.
- Commercial terms for infrastructure sharing should be transparent, fair/economic and non-discriminatory.
- The approval process for new infrastructure should be timely and effective and should encourage infrastructure sharing.
- Dispute resolution process should be cross-sector, documented, timely, and effective.
- The infrastructure sharing regulatory framework should take into account the national broadband plan, universal access and service fund (UASF) policy, and future technology development.

Prices for infrastructure sharing are best set through commercial negotiation so that they embed a commercial rate of return on investment; but regulators need to have oversight of the terms and conditions so as to ensure that infrastructure owners do not abuse their dominant market position.

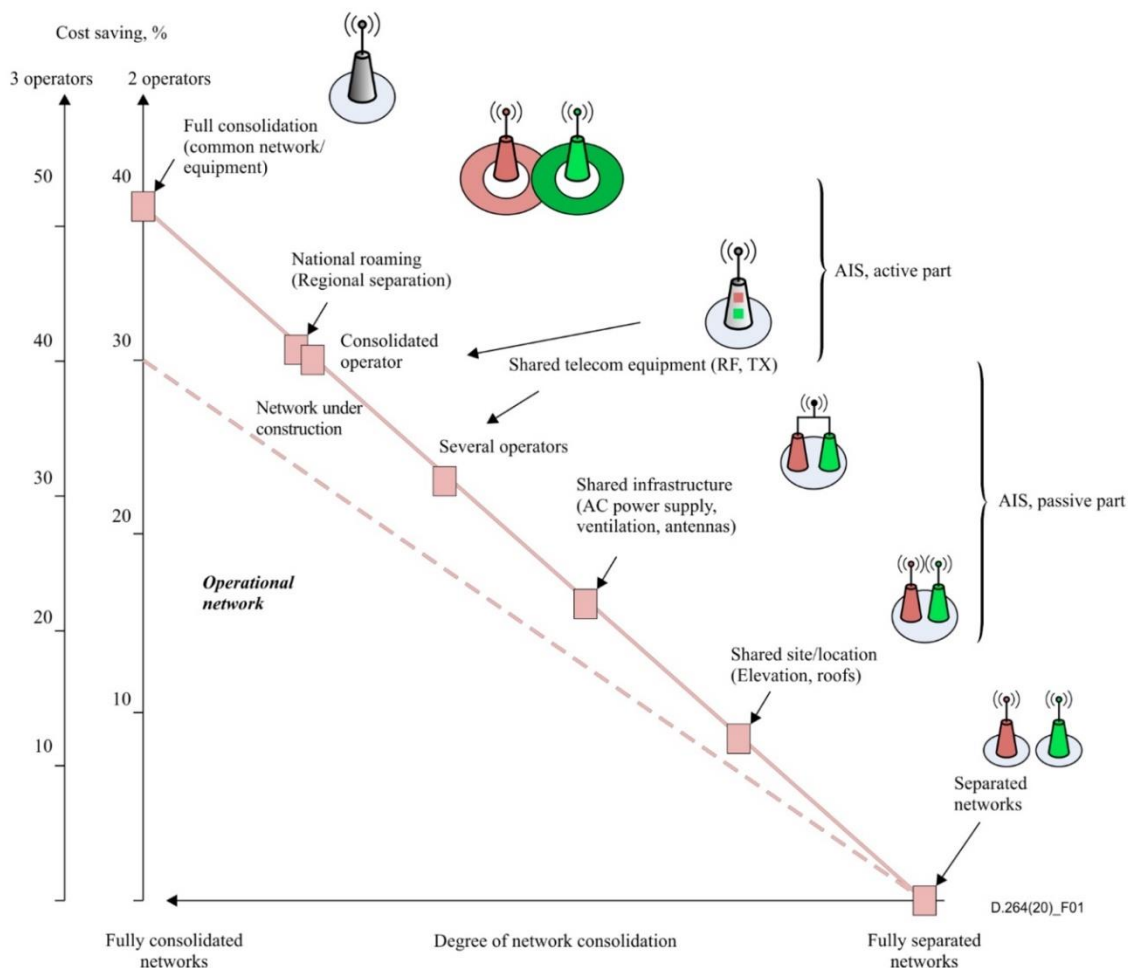
Infrastructure sharing can benefit consumers, because increased competition can allow for competitively priced services and greater choice options to consumers.

In Nigeria, after the three largest MNOs transferred their assets to independent tower companies, the price of mobile Internet access as a percentage of gross national income per capita declined by 3 percentage points per year (compared to just 0.4 percentage points the year prior).<sup>38</sup> Moreover, the quality of service (QoS) can also improve (particularly in congested urban areas) because more operators are able to alleviate congestion and bottlenecks in the coverage cycle.

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<sup>38</sup> IFC, *op cit*, page 3.

**Exhibit 8: ITU estimates of potential scenario of cost savings**



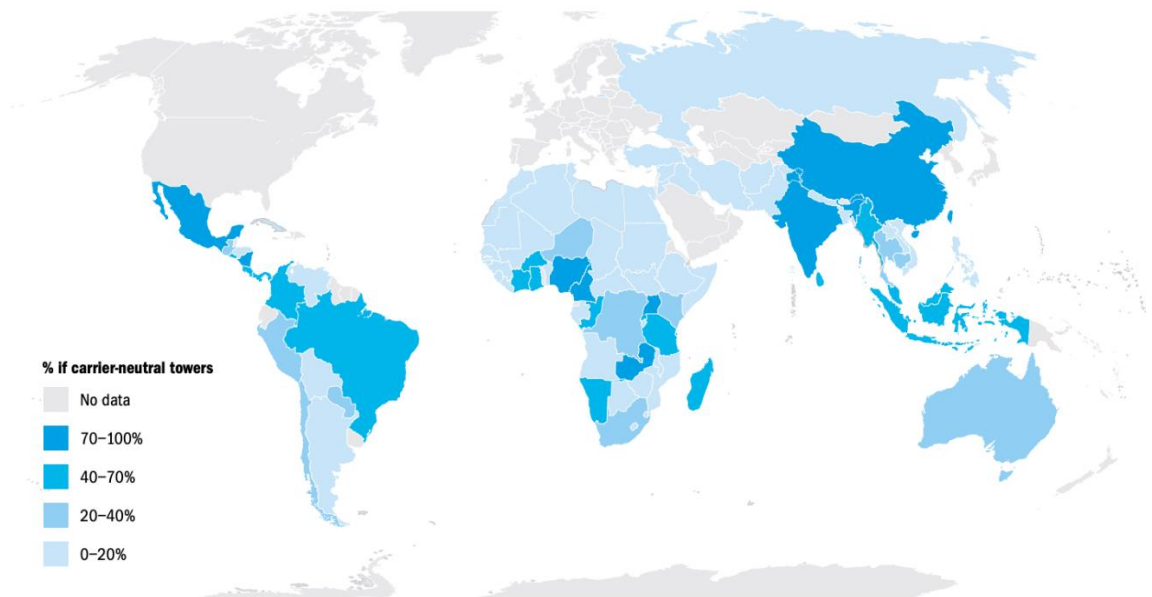
Source: ITU, Shared uses of telecommunication infrastructure as possible methods for enhancing the efficiency of ICT, April 2020. D.264 (04/2020)

Below, the common forms of infrastructure sharing in the ICT sector are considered, and their impact on competition.

### 2.4.2 Passive Sharing

Passive sharing is the simplest form of infrastructure sharing, involving non-electronic infrastructure. Operators share sites, towers, masts and associated buildings and common services such as electricity and security which support mobile services. This typically lowers per-site costs while maintaining separate physical mobile networks. Generally speaking, the assets that are shared are used to support mobile service but are not used for transmitting or receiving signals. The aim of regulators when they allow passive sharing is to create cooperation and competition, with the ultimate aim of reducing costs for consumers. Passive sharing will raise fewer competition issues than sharing active network elements.

**Exhibit 9: Tower sharing through independent companies in selected markets** <sup>39</sup>



Disclaimer: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of ITU and of the secretariat of ITU concerning the legal status of the country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

Source: IFC, 2020

2.4.3 Active Sharing

Active sharing involves sharing the active electronic network elements, including electronics and antennae. Active sharing includes most of the passive infrastructure components. It requires more rigorous market and competition analysis than passive sharing, and regulators should not restrict competing service providers to build their own infrastructure.<sup>40</sup>

Active sharing has not been adopted across A&A at the same pace as in Europe. Over the past 10 years, only 10 active network sharing agreements have been announced across the region.<sup>41</sup> There are also sharing agreements that involve a deeper partnership between MVOs, where they share their core network and spectrum. These agreements are considered below.

2.4.3.1 Multi Operator Radio-Access Network (MORAN)

In many developing countries throughout Africa and the Middle East, spectrum pooling is not allowed.<sup>42</sup> This has led to an increased popularity for MORAN based sharing. A MORAN model allows for shared RAN, but separate spectrum. The operators' core networks remain separate in a MORAN agreement.

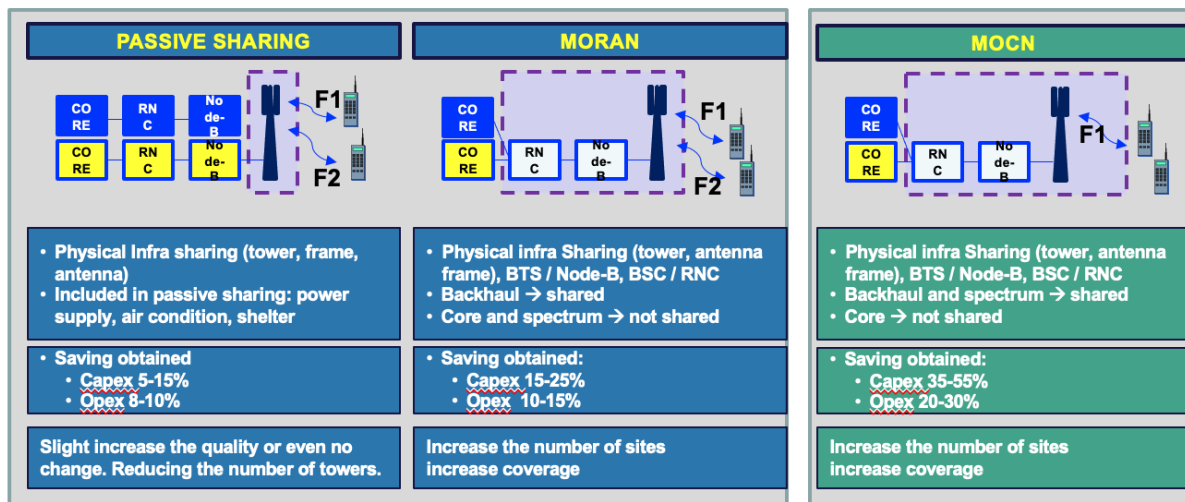
Such an arrangement can harm competition if the sharing covers a large proportion of the population and therefore makes it harder for a third player who is not part of the network sharing arrangement to compete.<sup>43</sup>

2.4.3.2 Multi Operator Core Network (MOCN)

MOCN is the same as MORAN, but the spectrum is also shared. This makes it the most resource-efficient solution, as mobile operators can pool their respective spectrum allocations.<sup>44</sup>

<sup>39</sup> IFC, *op cit*  
<sup>40</sup> A4AI, *Affordability Report 2019*, page 6.  
<sup>41</sup> IFC, *op cit*  
<sup>42</sup> Arthur D Little, *Network Sharing in the 5G Era*, November 2020.  
<sup>43</sup> *Ibid.*  
<sup>44</sup> For more information, see: [www.parallelwireless.com/products/multi-tenant-and-sharing/](http://www.parallelwireless.com/products/multi-tenant-and-sharing/)

Exhibit 10: Passive and Active Sharing



Source: Industry sources

### 2.4.3.3 5G rollout

The rollout of 5G has seen an increased interest in network sharing due to the high costs of infrastructure, including spectrum and fibre optic backhaul.<sup>45</sup> Infrastructure sharing provides a cost-effective option for MNOs seeking to rollout new technologies, which is particularly crucial in emerging markets. 5G technologies are expected to build upon existing sharing models like MORAN and MOCN but be supplemented with new features such as network slicing.<sup>46</sup> A MOCN agreement could also overcome any spectrum deficiencies, and MNOs can pool their spectrum allocations.

If MNOs are able to share infrastructure, they can share the investment costs that are part of any upgrade to 5G, including building new towers, upgrading existing towers, increasing small cell deployment, and indoor site opportunities (such as airports, stadiums, shopping centres and transit hubs for provision of inbuilding systems (IBS).

## 2.4.4 Other Competitive Models

### 2.4.4.1 Wholesale Open Access Networks (WOAN)

WOANs are a form of shared infrastructure designed to separate the business model of physical network provision and maintenance from internet access services offered to consumers.<sup>47</sup> Governments use WOANs as a solution to low connectivity and consolidated broadband markets that are in need of substantial reform.<sup>48</sup> WOANs are used to supply network access where there are market gaps, and increase competition. WOANs have been criticised by industry organisations for failing to achieve results and point to their low uptake as proof of their lack of viability.<sup>49</sup>

#### Case study: Rwanda

Rwanda was slow to liberalise the mobile sector and had a monopoly until 2006 when Rwandatel became the second mobile operator. In 2009, Tigo launched in Rwanda, but was later acquired by Airtel, and the cancellation of Rwandatel's licence in 2011 resulted in the market becoming a duopoly.<sup>50</sup> From 2013 to 2014, Rwanda developed its WOAN plan via a public-private partnership (PPP) with Korea Telecom (KT) to deploy 4G LTE.<sup>51</sup> The spectrum granted was in the 800 MHz and 1800 MHz bands under a 25-year licence. The spectrum is available under a wholesale basis to providers of LTE services. The contributions to the PPP were US\$140 million by KT, and infrastructure of fibre optic assets, spectrum resources and the 25-year licence. The number of subscribers on LTE infrastructure increased 200% in 2016, year-on-year.<sup>52</sup> By 2018, national LTE

<sup>45</sup> Ibid.  
<sup>46</sup> Refer to [www.mckinsey.com/industries/technology-media-and-ICT/our-insights/network-sharing-and-5g-a-turning-point-for-lone-riders](http://www.mckinsey.com/industries/technology-media-and-ICT/our-insights/network-sharing-and-5g-a-turning-point-for-lone-riders).  
<sup>47</sup> A4AI, *op cit*.  
<sup>48</sup> Ibid.  
<sup>49</sup> [www.gsma.com/spectrum/resources/woan-report/](http://www.gsma.com/spectrum/resources/woan-report/)  
<sup>50</sup> [www.budde.com.au/Research/Rwanda-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses](http://www.budde.com.au/Research/Rwanda-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses)  
<sup>51</sup> A4AI, *op cit*,  
<sup>52</sup> <https://africabusinesscommunities.com/news/rwanda-telecom-market-continues-to-develop-strongly,-market-research-shows/>

coverage was achieved.<sup>53</sup> This suggests that the WOAN was able to increase competition in Rwanda and created an increase consumers use of telecommunication/ICT services even with the relative high costs of devices.<sup>54</sup>

### Case study: South Africa

The affordability of data in South Africa has been a key policy issue since the 2016 #DataMustFall campaign. Since then, data pricing has been the subject of inquiries by both the Competition Commission and Independent Communications Authority of South Africa (ICASA). The South African government has sought to address the duopoly of Vodacom and MTN via the creation of a WOAN.

On 1 October 2020, the ICASA released an invitation to apply for the WOAN and also IMT Spectrum, with applications closing on 30 March 2021 for WOAN and IMT spectrum on 28 December 2020.<sup>55</sup> The WOAN will operate as a single network and will sell high-demand spectrum to telecommunication operators on a wholesale basis. The WOAN will be required to fulfil various obligations in the hope of transforming the telecoms sector, and will operate as a consortium that sells high-demand spectrum to telecom operators on a wholesale basis. The members that comprise the consortium that run the WOAN must be 70 percent South African owned, 50 percent black owned (as defined in the B-BBEE Act) and 20 percent owned by black women. ICASA have stated in their policy concerning the WOAN that there must be a diversity of ownership within the consortium, including SMEs, women, youth, and persons with disabilities. Moreover, 30 percent of the WOAN's capacity must be made available to operators that are awarded spectrum through the auction.

It is ICASA's stated hope that the WOAN will compete with Vodacom and MTN, with the result of bringing down retail prices for mobile data.<sup>56</sup> 80MHz of unallocated high-demand spectrum will be assigned to the WOAN. It will not have to participate in the upcoming spectrum auction, however, to try to lower costs and make it more financially viable. The spectrum the WOAN will receive shall be 2 x 10MHz in the 700MHz band, 30MHz at 2.6GHz, for 4G/LTE services and 30MHz at 3.5GHz, for 5G.

## 2.4.5 The impact of digital transformation

The need for infrastructure sharing has become greater as the investment required to construct and maintain broadband digital infrastructure has increased. The digital economy requires a scale of investment and a geographical reach that precludes the possibility of full facilities-based competition.

Furthermore, just as the transformation towards a digital economy was taking shape, the global financial crisis of 2008-2009 curtailed the availability of investment funds; and a similar dynamic is being felt today as the need for 5G mobile and Internet of Things (IoT) investment is juxtaposed with the global recession emerging as a result of the COVID-19 crisis. The nature and longer-term impacts of the pandemic are still emerging and it is becoming apparent that, even the increasing availability of vaccines does not mean that the impacts of COVID-19 will not continue to be significant. The ongoing economic disruption due to COVID-19 will likely mean it is more difficult than previously for governments and/or the telecommunications industry to secure funding for network infrastructure.

These circumstances have made infrastructure sharing a regulatory prerogative over recent years, and it now seems that it is likely to be a permanent feature of the ICT landscape.

All service providers, including the digital platforms that most require high-capacity infrastructure, should contribute proportionately to the cost of that infrastructure through the payment of appropriate regulated access prices.

## 2.5 Price regulation

### 2.5.1 Traditional approach

The aim of traditional retail price regulation has been to limit interventions to those situations where suppliers with SMP might otherwise exploit their market position to the detriment of consumers. If there is an SMP provider in the retail market, the normal practice is to submit its tariffs to the regulator for approval prior to publication. This way

<sup>53</sup> Budde, *op cit*

<sup>54</sup> Refer to [www.fitchsolutions.com/corporates/telecoms-media-technology/rwandas-mobile-market-forecasts-revised-downwards-03-02-2020](https://www.fitchsolutions.com/corporates/telecoms-media-technology/rwandas-mobile-market-forecasts-revised-downwards-03-02-2020)

<sup>55</sup> Refer to [www.itweb.co.za/content/RgeVDqPYpwdvKJN3](https://www.itweb.co.za/content/RgeVDqPYpwdvKJN3)

<sup>56</sup> <https://techcentral.co.za/icasa-sets-out-the-rules-for-the-woan/101738/>

the regulator has a chance to identify and prevent anti-competitive practices before they arise.

In many countries, particularly where cost-based wholesale charges apply to interconnection and access, there is sufficient retail services competition that no supplier is designated as having SMP and no retail price regulation is required. In these circumstances competitive forces alone are sufficient to control retail prices.

### 2.5.2 The impact of digital transformation

With increasing direct and indirect competition from unregulated digital platforms, retail tariffs of most telecommunication providers, even those with SMP, are now severely constrained. The role of price regulation is therefore changing – it is now more concerned with ensuring fair competition amongst facilities-based service providers rather than protecting end users directly. The regulatory risk is not in overcharging, but in predatory pricing that leads to underfunding of network development.

#### Case study: Uganda, Zambia and Benin

In 2018 Governments in these three African countries have imposed taxes on social media. Uganda was first, imposing a daily tax of 200 USH (USD 0.053) on usage of any of 58 OTT services, including WhatsApp, Facebook and Twitter. In addition, there is a 1% tax on the use of mobile money, which is required to top-up SIM cards. The Zambian Government then announced a flat daily tax of 0.3 ZMW (USD 0.03) on IP-based voice calls. In Benin the Government proposed a 5% tax on voice, SMS and Internet services as well as a 5 CFA (USD 0.01) fee per megabyte of data used for accessing social media.

The arguments in favour of an OTT tax are to raise public revenues, support local ICT enterprises rather than foreign-owned OTTs, and help cover the cost of infrastructure investment. Zambia's Minister of Information and Broadcasting Services stated that "jobs such as call centre workers, talk time sellers, conventional call technicians will reduce drastically if more Zambians migrate to Internet calls and create jobs in America and elsewhere".

These views are not shared by the general population. A Policy report<sup>57</sup> found that after the implementation of OTT tax in Uganda there was a significant drop in social media access and 74% of businesses using social media reported a drop in income. 86% of all respondents felt that the tax should be removed. The Uganda Communications Commission reported a 30% decline in OTT usage and tax revenue after the tax was implemented<sup>58</sup>.

In Benin, these counter arguments (and the outcry created by the new tax) led to the Government decree being reversed within a few days. The reasons given were partly procedural (insufficient notice and technical difficulties) but also a recognition that the tax would have had a negative impact on consumption. The Alliance for the Affordable Internet<sup>59</sup> subsequently pointed out that the taxes would have resulted in forgone GDP growth of USD260m and forgone tax revenues of USD40m. In other words, taxing the usage of social media and other OTTs is arguably a massively counter-productive measure given foreign experience that minimal barriers and low costs of e-payments results in significantly higher usage.

Broadband service pricing is complex (affected by factors such as the average or minimum download and upload capacity, usage caps, and contract duration) and this gives dominant suppliers more opportunities for anti-competitive pricing (e.g. by tying customers to long-term contracts or failing consistently to deliver the advertised upload/download speeds).

Also, in order to meet the challenge of OTT service providers, telecommunication network operators are increasingly using zero-rating, and bundled tariffs (e.g. for "quad-play" combining broadband Internet access, television, fixed-line telephone, and wireless service) and making greater use of price-promotions to circumvent legacy regulatory price controls. Many of these developments are positive for consumers and need not result in regulatory interventions. However, regulators need to check for practices that spill over into anti-competitive behaviour, and in particular predatory (below cost) pricing.

Regulating price bundles is complicated, as illustrated by the new tariff bundles shown in Exhibit 11. These bundles are from the operator Telma in Comoros, and they include on-net voice, off-net voice, international voice to Mayotte (a near neighbour), SMS and data.

<sup>57</sup> <http://policity.org/wp-content/uploads/2019/01/Offline-and-Out-of-Pocket.pdf>

<sup>58</sup> <https://researchictolutions.com/home/ott-tax-causes-massive-decline-in-internet-subscriptions-in-uganda/?fbclid=IwAR0g1-LGuZQUOMxuLkv7g...>

<sup>59</sup> <https://a4ai.org/research/the-impact-of-taxation-on-internet-affordability-the-case-of-benin/>



Each bundle has a specified validity period, and the more usage the customer commits to, the lower the unit tariff.

**Exhibit 11: A typical set of tariff bundles from Telma in Comoros**

NOUVEAU

## A chacun son **Maxi** **Rahisi**

FCM	500	1000	2000	5000	10000	15000
Forfaits	1 jour	3 jours	15 jours	30 jours		
Vers Telma Comores	2H	6H	30H	90H	Illimité	Illimité
Vers Haut maximum	15min ou	30min ou	1H20 min ou	2H ou	4H ou	8H ou
Vers Only Mayotte maximum	5min	10min	20min	30min	1H	2H
SMS (vers Telma)	50	100	200	500	Illimité	Illimité
Data	250 Mo	500 Mo	1,5 Go	5 Go	15 Go	30 Go
Codes de migration	#445*41#	#445*42#	#445*43#	#445*50#	#445*44#	#445*45#

Service client : 400  
www.telma.km

**telma** Le Choix

If the national regulatory authority of Comoros, ARNTIC, is to regulate these bundles it will need to know:

- The unit costs of each service (voice, SMS and data) on the Telma network (probably based on a bottom-up LRIC cost model)
- The costs of terminating calls on other networks, both nationally and to Mayotte
- The extent to which each of the bundles is utilised (i.e. how much of the voice, SMS and data allowance within the bundle does the average customer actually use?).

More generally, the main requirements for effective price regulation in the digital economy are:

- Regulators should generally take an active monitoring or “watching brief” attitude to retail price regulation: intervention will be principled, but ex-post.
- Ex-post regulatory intervention in response to complaint or concern may be sufficient for most situations (e.g. of predatory pricing or margin squeeze).
- Service providers should regularly file data on subscription numbers, service tariffs, and volumes so that the regulator can act quickly where necessary.
- NRAs may need to retain up-to-date cost models so as to be able to impute the cost of different retail tariff bundles and identify where anti-competitive behaviour exists.
- A specific focus should be on entry-level products (especially for Internet access) to ensure affordability, including zero-rating where it does not unduly distort service competition.

An article further exploring the challenges of regulating price bundles may be found on the ITU/World Bank’s Digital Regulation Platform<sup>60</sup>.

## 2.6 Licensing

### 2.6.1 Traditional approach

Licensing has been widely adopted in the ICT industry as a rational means of selecting suppliers for a market with high barriers to entry but which, behind those barriers, was prospectively competitive. Licensing a limited number of suppliers enables governments to attract private-sector investment in infrastructure and services. Licences provided the

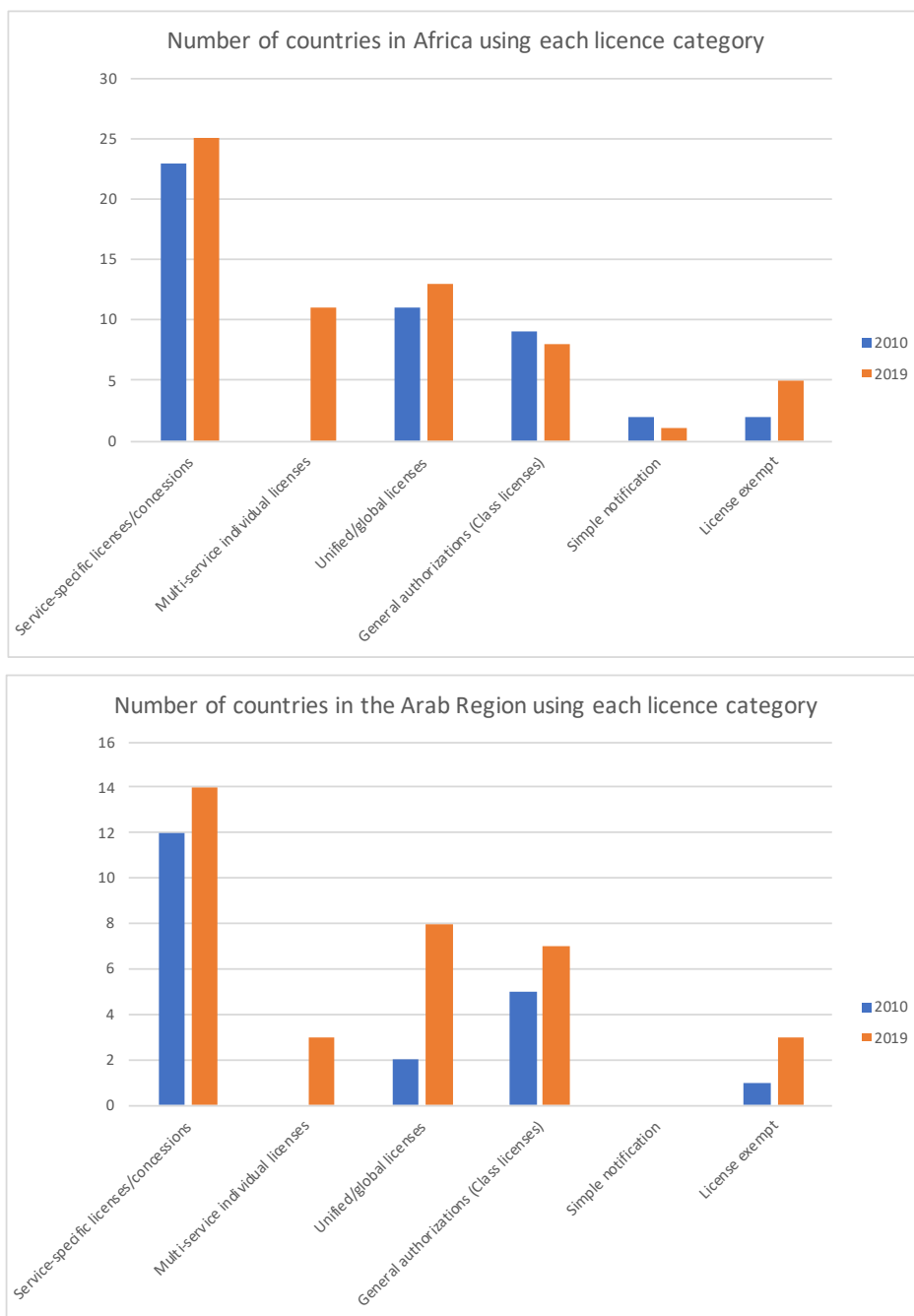
<sup>60</sup> <https://digitalregulation.org/the-regulation-of-price-bundles/>



regulatory certainty needed for investment, while also providing a vehicle to enact public policy goals (e.g. on network coverage, quality of service, or price).

However, in some A&A countries licensing came to be seen more as a means for the government to raise revenue, so the number of licences proliferated and/or the price of licences soared (e.g. one-off fees and royalty payments). A wide variety of licence types (and fees) may appear to work for the government in terms of revenue collection, but it restricts convergence and distorts competition within the industry. In such circumstances industry costs soar and industry structure tends to become overly complicated and fragmented.

**Exhibit 12: Licence categories in the Africa and Arab regions in 2010 and 2019**



Source: ITU Regulatory Survey, 2019

### 2.6.2 The impact of digital transformation

In recent years, there has been a growing recognition that complex licensing rules and excessive fees have dragged down the sector and threaten the entire digital economy.

This is not just a matter of licensing fees diverting potential infrastructure investment; it is the imposition of a suboptimal and static market structure on an industry that is characterized by dynamism and economies of scale and scope. As a GSMA report<sup>61</sup> concludes, “effective regulation requires a holistic approach that addresses the diversity of all the relevant platforms” and “should enable, not discourage, the realization of economies of scale and scope that represent real savings for consumers”.

#### Case study: Qatar<sup>62</sup>

A licence is required to provide ICT services to the public, to own or operate ICT network used for the provision of ICT services to the public, to own or operate any other ICT network. Both individual and class licences are available.

Individual licences have been issued to each of the fixed and mobile network operators as well as VSAT providers. CRA can impose obligations on individual licensees including tariff procedures, service continuity requirements, procedures for disconnection, consumer protection, radio spectrum, quality of service obligations.

Class licences apply to resale of retail ICT services and operation of private networks. Resale licences are restricted to certain eligible persons, including hotels, internet cafes and data centres. Licensees must enter into a commercial agreement with an Individual Public ICT Licensees and they are required to notify ictQATAR of their intention to resell ICT services. There is a notification fee of QR1500 (USD 412).

In addition, the Decree Law No. 34 of 2006 on the Promulgation of the ICT Law (ICT Law) mandates that every person or entity that intends to operate any radio communication equipment or make use of frequencies must possess a radio spectrum licence or a radio frequency authorisation.

Such considerations have resulted in a trend towards open competition (where no licence is required) or general authorization (where a limited set of rules apply equally to all service providers within the class). Most countries continue to have some service-specific licences, but they have greatly increased the number of multiservice and unified licences, and in some circumstances removed the need for licensing entirely with the creation of licence-exempt categories.

The other parallel trend is the simplification of the process of obtaining such an authorization (sometimes called a class licence) – often it involves little more than a simple registration procedure, without any licence fee. The ITU’s Global ICT Regulatory Outlook 2020 report<sup>63</sup> concludes that having a general authorization regime is one of the golden rules for unlocking the power of broadband. General authorization is to be preferred and fees should be negligible, set to cover administrative costs only, so as not to deter investment and innovation but also to enhance affordability for consumers.

But there are exceptions, especially for facilities-based licences. Convergence has driven the ICT sector towards a small number of network operators, with some countries and territories returning to a network monopoly to maximize economies of scale and scope and ensure national social and economic inclusion. Where individual facilities-based licences are issued, the number of licences should be limited to avoid unnecessary duplication of investment, but they should be subject to conditions that provide for open access to key infrastructure on fair and reasonable terms so as to create a healthy, competitive services market.

<sup>61</sup> A *New Regulatory Framework for the Digital Ecosystem*. London: GSM Association. [https://www.gsma.com/publicpolicy/wp-content/uploads/2016/02/NERA\\_Full\\_Report.pdf](https://www.gsma.com/publicpolicy/wp-content/uploads/2016/02/NERA_Full_Report.pdf)

<sup>62</sup> For more information see: <https://www.cra.gov.qa/en/Regulatory-Framework/Licensing>

<sup>63</sup> Global ICT Regulatory Outlook 2020: Pointing the Way Forward to Collaborative Regulation. Geneva: ITU. [https://www.itu.int/pub/D-PREF-BB.REG\\_OUT01](https://www.itu.int/pub/D-PREF-BB.REG_OUT01). Other golden rules include open competition in services and international gateways, infrastructure sharing, SMP-based regulation and foreign participation/ownership.

## 3 ASSESSING REGULATORY DEVELOPMENT

### 3.1 Regional benchmarks for competition policy and regulation

The previous chapter looked at the major competition policy and regulatory issues that will affect the development of a digital apps environment. It identified and explained a wide variety of factors that are relevant to Governments, policymakers and National Regulatory Authorities in the Africa and Arab regions. However, these issues were described on a global or regional level, with just a few case study examples.

In this chapter we have developed a regional benchmark for competition policy and regulation in order to provide detailed information to chart the progress that has been made to date in each of the 22 countries in the Arab region and each of the 44 countries in the Africa region. The charts can also be used to identify the areas which are most in need of improvement in each country. The overall aim is to ensure that limited resources can be focussed on those matters which will have the greatest impact on the effective development of the digital economy.

#### 3.1.1 Methodology

The data for the regional benchmark for competition policy and regulation are derived from three sources:

1. The ITU ICT Regulatory Tracker<sup>64</sup>. This is an evidence-based tool that helps decision-makers and regulators monitor the rapid evolution of ICT regulation. It also helps identify the gaps in existing regulatory frameworks, making the case for further regulatory reform. It assesses each of the 196 ITU member states against four pillars of effective regulation (regulatory authority, regulatory mandates, regulatory regime and competition framework) and computes an overall score and ranking. The latest version of the ICT Regulatory Tracker was published in the Global ICT Regulatory Outlook, 2020 report.
2. The ITU's ICTEye database<sup>65</sup>. Each year the ITU surveys regulatory authorities in member states and gathers a wide range of detailed regulatory and tariff policy information. We have presented national results for five of these factors (interconnection pricing, infrastructure sharing, broadband pricing, licensing and ICT sector taxes) with performance ranked according to how effectively each country's approach encourages digital services competition, including from independent service providers and digital platforms (over-the-top providers).
3. The Network Readiness Index<sup>66</sup>. This is a publication from the Portulans Institute that assesses the extent to which national networks are ready for digital transformation. The index is constructed on four pillars (technology, people, governance and impact). The 2020 Index ranks 134 countries that collectively represent 98% of global GDP, including 31 countries in Africa and 13 in the Arab region.

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<sup>64</sup> The latest version of the ICT regulatory Tracker was published in the Global ICT Regulatory Outlook, 2020 report, to be found at: [https://www.itu.int/pub/D-PREF-BB.REG\\_OUT01](https://www.itu.int/pub/D-PREF-BB.REG_OUT01)

<sup>65</sup> <https://www.itu.int/net4/itu-d/icteye/>

<sup>66</sup> To be found at: <https://networkreadinessindex.org>. It should be noted that the inclusion of the Network Readiness Index in this report does not constitute an endorsement by ITU of the report or its results. It is offered here merely as an alternative perspective of how some of the member states in the Africa and Arab Regions compare with regional and global benchmarks.

**Exhibit 3: Top 5 countries in the Africa and Arab regions in the ITU ICT Regulatory Tracker, 2020**

	Country	Score	GEN	World rank
1	Kenya	124.5	G5	8
2	Ghana	88	G4	48
3	Malawi	87	G4	52
4	Uganda	86	G4	56
5	Botswana	85	G4	64
5	Tanzania	85	G4	64

	Country	Score	GEN	World rank
1	Morocco	123.5	G5	11
2	Saudi Arabia	92	G4	23
3	Oman	90.3	G4	39
4	Bahrain	87.3	G4	51
5	Jordan	84.5	G3	68

### 3.1.2 Benchmark results

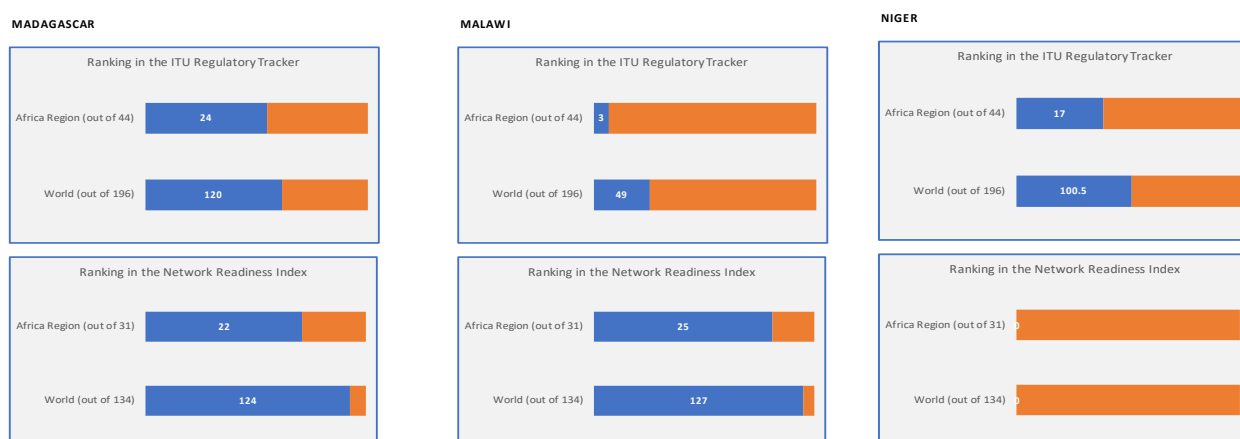
Individual country results are presented in Appendix A (22 countries in the Arab Region) and Appendix B (44 countries in the Africa Region). For each country four charts are shown. These comprise:

1. The country’s ranking in the ITU ICT Regulatory Tracker, both in the region and in the World
2. The country’s ranking in the Network Readiness Index, both in the region and in the World
3. The country’s position relative to the regional average and the maximum potential score, against each pillar of the ITU ICT Regulatory Tracker
4. The country’s position relative to the regional average and the maximum potential score, against each of the five competition indicators, based on the information in the ITU’s regulatory database.

#### 3.1.2.1 How to use the benchmark charts

To illustrate how the charts presented in the appendices may be read and interpreted, we have reproduced below the results for some representative countries.

**Exhibit 8: Sample charts from the regional benchmark of competition policy and regulation**



The two “thermometer” charts illustrate how well the country is doing relative to regional and global benchmarks: the more blue, the lower the ranking; the more orange, the higher the ranking. For example, it can be seen from the ITU Regulatory Tracker that Madagascar is slightly lower than the mid-point both regionally and globally. It appears to be doing much worse in the Network Readiness Index, but this is mainly because the index comprises fewer countries and many of the exclusions are generally low ranked countries, including countries in the Africa and Arab regions. It is therefore perhaps of more note

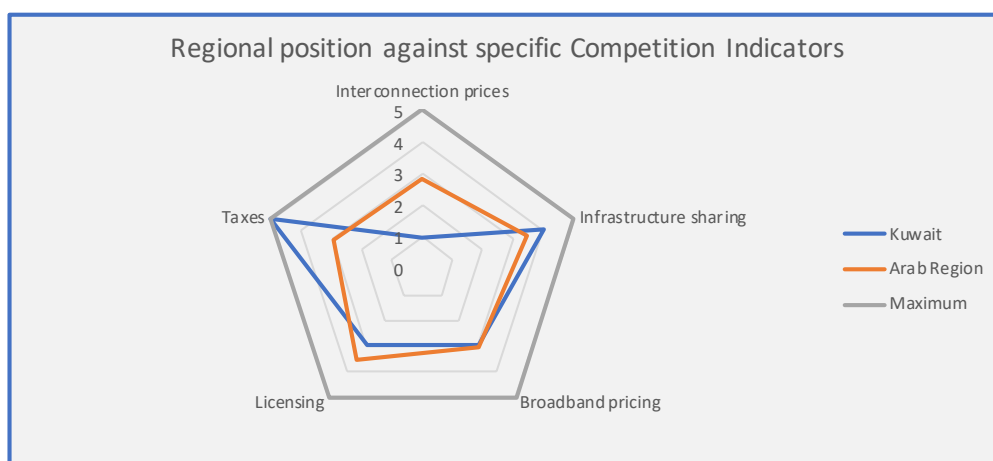
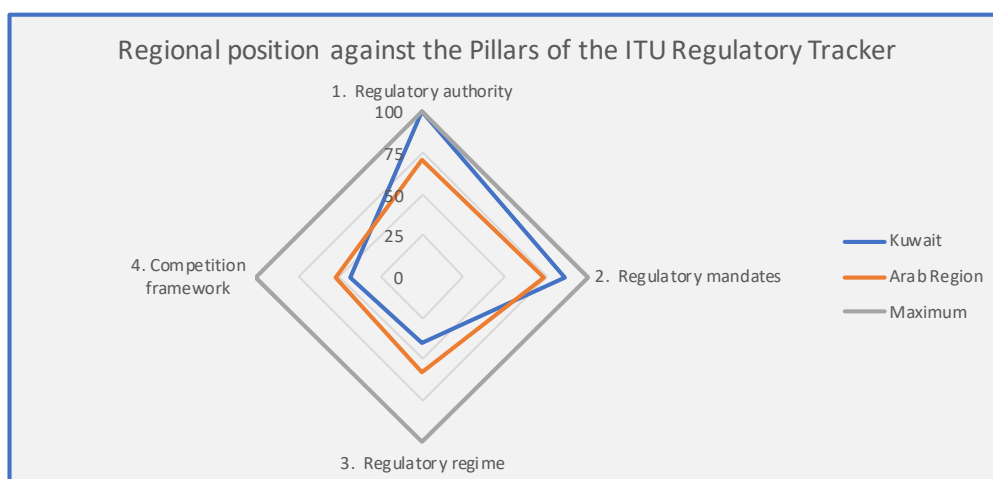
that the absolute ranking of Madagascar is similar in both rankings: placed 22<sup>nd</sup> or 24<sup>th</sup> regionally, and 120<sup>th</sup> or 124<sup>th</sup> globally.

In some cases, a country may be placed high in one ranking and low in the other. Malawi is a case in point. Malawi’s high ranking in the ICT regulatory Tracker suggests that it has already put in place a regulatory regime that can enable competition in digital services. However, the much lower ranking in the Network Readiness Index, suggests that there may be problems in other areas, represented by the pillars of technology, people, governance and impact.

It should also be noted that, if a country is excluded from the Network Readiness Index, is shown as having a ranking 0, and is coloured orange. Niger is a case in point.

Whereas the “thermometer” charts identify how well each country is doing relative to its peers, the “spider web” charts illustrate something of the reasons for these rankings and provide a starting point for a strategy to address relevant issues. The charts for Kuwait illustrate this point.

**Exhibit 9: Sample charts for Kuwait from the regional benchmark of competition policy and regulation**



Within the ICT Regulatory Tracker, it can be seen that Kuwait is doing very well on Pillar 1: Regulatory Authority and Pillar 2: Regulatory Mandates. In both cases it is well above the regional average and close to maximum scores. However, it is below average on Pillar 3: Regulatory Regime and Pillar 4: Competition Framework, so efforts to improve preparations for the digital economy should focus on these areas.

When looking at the “Regional position against specific Competition Indicators” it is possible to drill down to a greater level of detail. It is clear from this diagram that the Arab Region as a whole has room for improvement in all five areas. Kuwait is above the

regional average on taxes and infrastructure sharing regulations, but slightly below on licensing and well below on Interconnection prices. The cost-based regulation of interconnect prices is therefore a significant step that Kuwait to enhance its prospects for effective competition in the digital economy.

### 3.2 Regional case studies

Although much of the work currently being undertaken to regulate digital platforms is taking place at a global level or is being led by the more developed Western economies, there are quite a few initiatives underway in Africa and the Arab Region. The table below summarises a number of them.

Country	Comments on Digital Platforms
<b>South Africa</b>	<p>Competition paper on the digital economy</p> <p>In September 2020, the Competition Commission of South Africa published its strategy document entitled “Competition in the Digital Economy”. This paper sets out the ways in which South Africa’s competition laws can be implemented to achieve equitable outcomes in the digital economy.</p> <p>It also specifically examines the different elements of competition law enforcement from the perspective of digital markets, identifying the challenges, the emerging thinking globally and the strategic direction the Commission will take. The Commission notes that Regulation should adopt a technology-neutral approach, without differentiating whether firms traditionally operate their business or whether they make use of digital platforms. It advocates for regulatory responses that are geared at levelling the playing field and reducing regulatory barriers to entry and expansion.<sup>67</sup></p>
<b>Egypt</b>	<p>Draft law on income tax</p> <p>In August 2019, the Ministry of Finance announced it was about to finalise a new draft law on income tax, including the application of tax on social media ads and digital platforms. The aim of the legislation is to keep pace with global economic changes and digital transformation to ensure continued growth and consistency with international standards. This is in addition to integrating the digital and parallel economy in the formal economy in a way that does not contradict with encouraging entrepreneurs to ensure fair competitiveness in the market.<sup>68</sup></p> <p>Fintech regulation in the non-banking financial sector</p> <p>In September 2020, the Financial Regulatory Authority’s Board of Directors approved a draft law that aims to regulate and support the use of fintech services in the non-banking financial sector. Fintech services may be provided via applications, digital platforms, and AI based solutions. The law aims to enable the use of modern and innovative technology and facilitate a supervisory role over subject entities.</p> <p>The FRA in Egypt is the designated administrative body tasked with supervising companies that plan to offer non-banking financial services by using digital fintech platforms.<sup>69</sup></p>

<sup>67</sup> [http://www.compcom.co.za/wp-content/uploads/2020/09/Competition-in-the-digital-economy\\_7-September-2020.pdf](http://www.compcom.co.za/wp-content/uploads/2020/09/Competition-in-the-digital-economy_7-September-2020.pdf)

<sup>68</sup> <https://www.egypttoday.com/Article/3/74039/Egypt-discusses-social-media-ads%E2%80%99-tax-with-Facebook>

<sup>69</sup> [https://www.crowdfundinsider.com/2020/09/167019-egypts-financial-regulatory-authority-approves-draft-of-laws-to-regulate-fintech-in-non-banking-financial-sector/;](https://www.crowdfundinsider.com/2020/09/167019-egypts-financial-regulatory-authority-approves-draft-of-laws-to-regulate-fintech-in-non-banking-financial-sector/) <https://www.unlock-bc.com/news/2020-09-22/financial-authority-of-egypt-approves-fintech-draft-law>

Country	Comments on Digital Platforms
<p><b>Saudi Arabia</b></p>	<p>Executive regulations of the e-commerce law</p> <p>On 31 January 2020, the Ministry of Commerce and Investment issued the Executive Regulations to the E-Commerce Law.</p> <p>The Regulations impose obligations on platforms that act as an intermediary between a Service Provider and a Customer. These platforms are described in broad terms, being "any website or application that provides services for the facilitation of e-commerce transactions, such as online advertisement services or the promotion of products or services, or enabling the acceptance of orders or payments, or any other service that facilitates the practice of e-commerce". This would clearly catch intermediary platforms such as online marketplaces (ebay, Amazon, Uber, Google Play, App Store, etc).</p> <p>The requirements include cyber security, record-keeping, and know-your-client obligations.<sup>70</sup></p>
<p><b>United Arab Emirates</b></p>	<p>Internet media regulations</p> <p>The ICT Regulatory Authority (TRA) implements the Internet Access Management Regulatory Policy (issues April 2017) in coordination with National Media Council and Etisalat and Du, the licensed internet service providers in the UAE.</p> <p>The regulation policy consists of certain frameworks and categories in regards to the Internet, which must be taken into consideration by internet service providers to ensure the security of the internet and protect end-users from harmful websites containing materials that are contrary to religious and ethical values of the UAE. TRA monitors online content available to users in the UAE and will notify website operators based in the UAE of any potential breaches of the IAM policy. TRA, in its enforcement of IAM, also monitors online advertising, including the advertising of medical and other specialised products and services.<sup>71</sup></p> <p>Federal Law No 15 for 1980 concerning Publications and Publishing</p> <p>The Publications Law governs both traditional media and digital media content. It covers all forms of published content and sets out matters that may not be published, which include matters related to religion and politics, national security, individual rights, and public morals.<sup>72</sup></p>
<p><b>Kenya</b></p>	<p>Digital services tax</p> <p>The Kenya Finance Bill 2020 introduced a new Digital Services Tax on income from services provided through the digital marketplace in Kenya at the rate of 1.5% on the gross transaction value.</p> <p>Regulating digital borrowing platforms</p> <p>If amendments on the Central Bank of Kenya Act are passed, the Central Bank of Kenya (CBK) will regulate interest rates charged on mobile loans by digital lending platforms. The amendments will require digital lenders to seek approval from CBK before launching new products or changing interest rates on loans among other charges, just like commercial banks. Amendments in the CBK Act is expected to help shield consumers from high-interest rates as well as offer transparency on terms of digital loans.</p> <p>"The principal objective of this bill is to amend the Central Bank of Kenya Act to regulate the conduct of providers of digital financial products and services," reads a notice on the bill. "CBK will have an obligation of ensuring that there is fair and non-discriminatory marketplace access to credit."<sup>73</sup></p>

<sup>70</sup> <https://www.mondaq.com/saudi-arabia/new-technology/936424/call-to-action-the-new-executive-regulations-of-the-saudi-e-commerce-law>

<sup>71</sup> <https://u.ae/en/media/media-in-the-uae/media-regulation>

<sup>72</sup> <https://www.tamimi.com/law-update-articles/regulation-of-digital-content-in-the-uae-part-two/>

<sup>73</sup> <https://kenyanwallstreet.com/cbk-to-regulate-mobile-loans-in-new-law/>



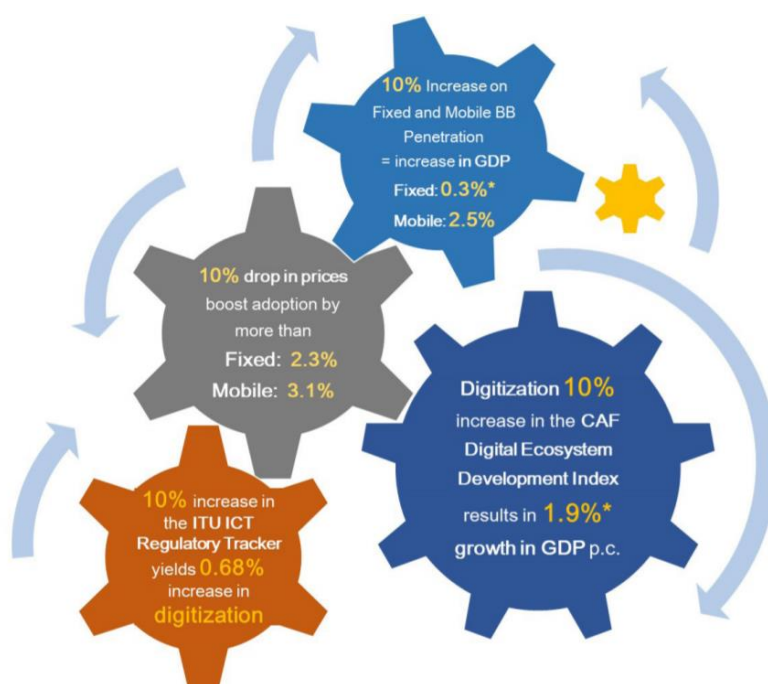
## 4 DIGITAL PLATFORMS AND OTT SERVICES: CHARACTERISTICS AND REGULATORY CHALLENGES

### 4.1 The importance of the digital economy

The term ‘the digital economy’ has emerged as the preferred description of the central role played by information and communication technologies (ICTs) in driving productivity and economic development across industries, nations and the globe.

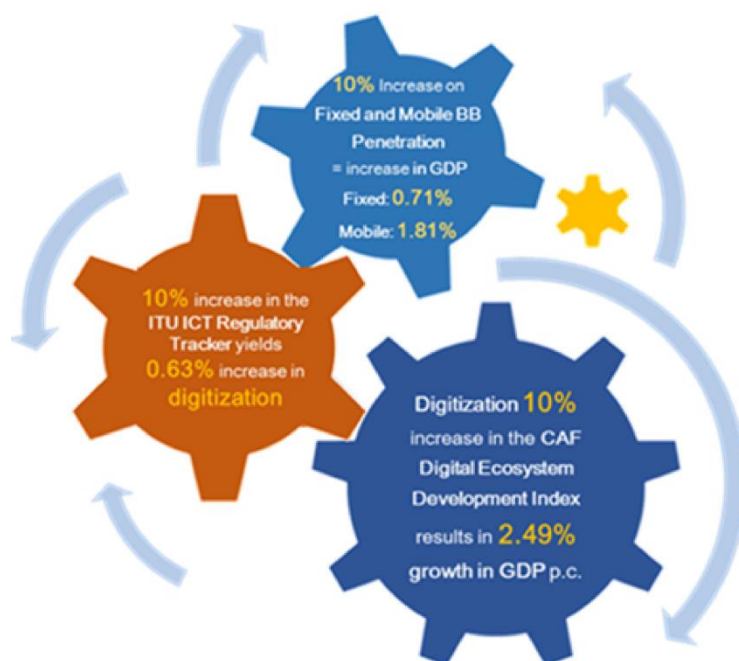
The expression ‘digital disruption’ is another common description of how digital technologies are causing upheaval across many industries. Digital technologies are disruptive because they have a large impact on productivity and business models. This is why the shift to the digital economy is both desirable and disruptive.

**Exhibit 10: Africa: Economic Impact of Fixed and Mobile Broadband Penetration and Digitisation 2019**



Source: ITU (2019), Economic contribution of broadband, digitization and ICT regulation - Econometric modelling for Africa<sup>74</sup>

<sup>74</sup>, [https://digitalregulation.org/wp-content/uploads/D-PREF-EF.BDT\\_AFR-2019-PDF-E.pdf](https://digitalregulation.org/wp-content/uploads/D-PREF-EF.BDT_AFR-2019-PDF-E.pdf)

**Exhibit 11: Arab region: Economic Impact of Fixed and Mobile Broadband Penetration and Digitisation 2019**

Source: ITU (2019), *Economic contribution of broadband, digitization and ICT regulation - Econometric modelling for Arab States*<sup>75</sup>

It is worth emphasizing that the ‘the digital economy’ is simply the latest description of the long-term and growing economic role of all ICT over the last now almost century-and-a-half. Previous descriptions of the potential of ICT to drive economic development have included ‘the information economy’ and ‘the network economy’ and other similar terms. All of these descriptions are intended to emphasize the positive and expanding influence on the ICT sector on economic development. Numerous quantitative studies have examined the impact on economic growth of, for example, ICT infrastructure and broadband adoption. A survey article of the research up to 2016 reported that “Almost every study, despite the methodology and whether it was cross-country or single country, found a positive economic impact from fixed broadband.”<sup>76</sup>

This body of research typically found that there were differences in types of ICT and broadband infrastructure associated with positive economic development impacts in developed and developing economies. The 2016 article concludes “Mobile broadband has emerged as the high-speed network of choice for developing nations.” This research also explores the impact of policy on economic development with one study finding that the existence of a national broadband policy is “associated with a 0.3 percentage points increase in fixed broadband penetration.”<sup>77</sup> In countries with low fixed penetration, however, this effect is not present. Not surprisingly, the launch of 3G or 4G services is associated with increases in mobile broadband adoption.

The impact of broadband penetration on economic development is likely to be greater if it is associated with lower broadband prices and whether a country has a high R&D intensity and higher levels of general ICT use. Mobile broadband penetration in particular contributes to economic growth where it is associated with entrepreneurial activity enabling “experimentation in the marketplace with new business models, in turn, nurturing the growth of new firms with new ideas and technologies and consequently augmenting growth.” Finally, broadband policies alone are not sufficient to create

<sup>75</sup> [https://www.itu.int/pub/D-PREF-EF.BDT\\_ARS-2019](https://www.itu.int/pub/D-PREF-EF.BDT_ARS-2019)

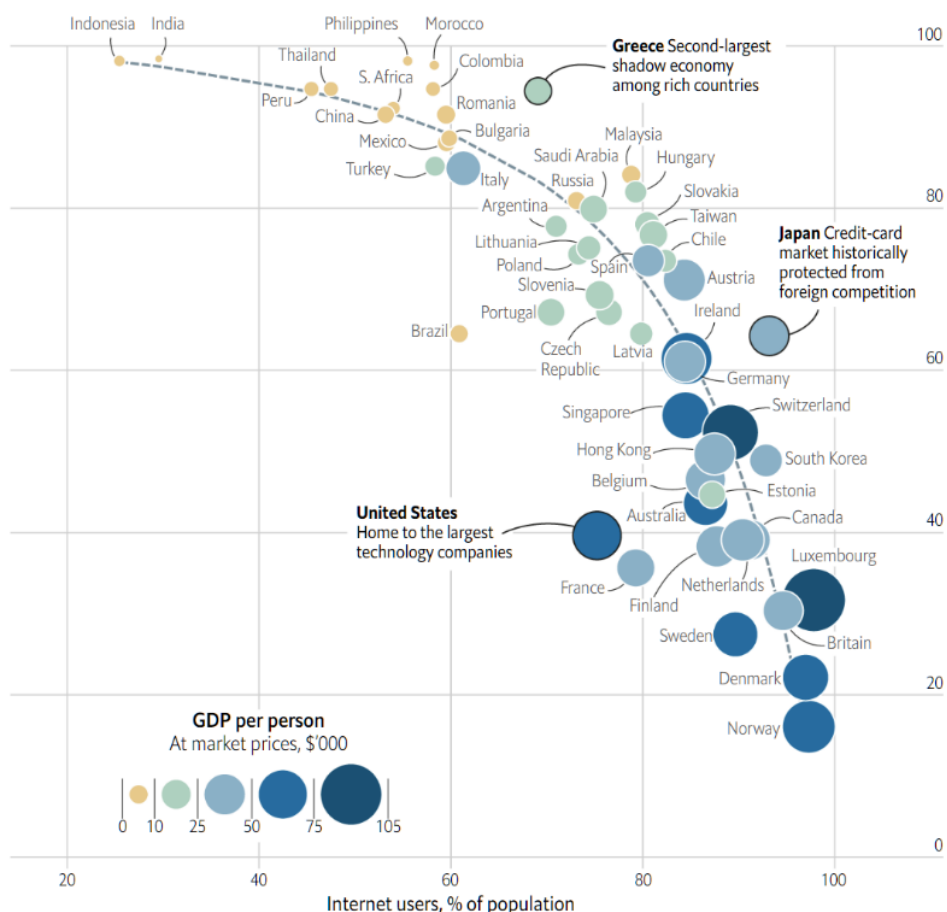
<sup>76</sup> Exploring the Relationship Between Broadband and Economic Growth 2016, World Development Report, Digital Dividends, Michael Mingos [ictData.org](http://ictData.org)

<sup>77</sup> Broadband penetration and economic growth: Do policies matter? Saibal Ghosh, *Telematics and Informatics* 34 (2017) 676–693

economic growth but rather “need to be part of a holistic approach towards ICT regulations in order to exert any durable impact.”

It should not be surprising that the results of economic modelling on the relationship between broadband and economic development, or more precisely economic growth, produces ambiguous results – the problems associated with data time lags and causality are complex. Some studies report a stronger relationship than others and there are differences between the effects of fixed line and mobile broadband as well as between more and less developed countries. Other studies point to a positive influence on growth from a set of factors taken together that include broadband adoption, innovation and entrepreneurship. This finding is useful from a policy perspective as it directs governments to encouraging innovation ecosystems that are well served by good quality broadband infrastructure. In addition, one should not overlook the importance of building markets for innovative digital products by increasing the numbers of consumers connected to broadband. A good example, is the shift to digital payment systems as internet penetration increases, As shown in Exhibit 6, the proportion of transactions conducted in cash is strongly negatively correlated with increasing internet penetration. The greater the number of internet users in any country, the more likely it is that entrepreneurs will develop new products and services.

**Exhibit 12: Impact on cash use as a medium of exchange arising from higher Internet penetration: % of total transactions conducted in cash**



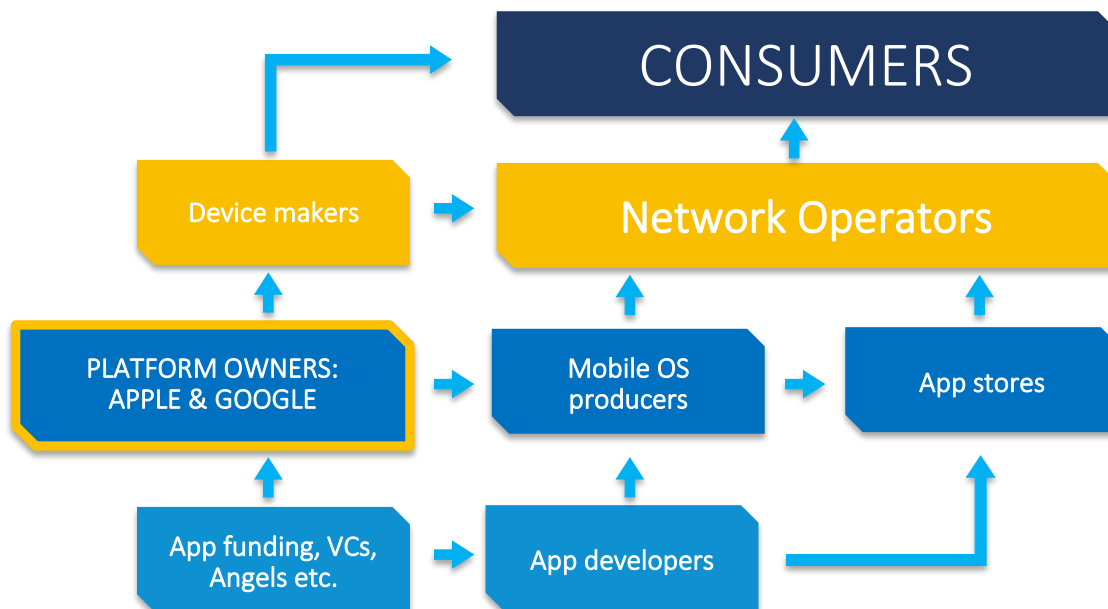
Source: The Economist, August 3, 2019

As well as these types of macroeconomic analysis of the impact of broadband, it is also possible to use microeconomic approaches that examine improvements in productivity in particular industries based on the use of broadband. It is also useful to examine benefits to consumers from the use of broadband. ICT companies are spending trillions of dollars on infrastructure in the belief that consumers see sufficient benefit and will purchase broadband services in sufficient quantity to make their investments profitable. From the microeconomics analytical perspective, the Boston group estimated that the consumer surplus associated with Internet use in 13 of the G20 countries to be \$1.9 trillion in 2012. Such benefits do not appear in national accounts and therefore aren't captured in GDP,

but nonetheless constitute significant economic benefits arising from increased broadband use.

Another perspective that is relevant to evaluating the economic impact of broadband relates to the rapid rise and ongoing impacts of ‘the app economy’. Previous generations of broadband were largely accessed via desktop and laptop computers. Now the dominant interface is the smartphone – a much cheaper and more personal device. The app economy is an interconnected ecosystem of app developers, sources of capital, and device makers which is dominated by the ‘platform owners’ – Apple and Alphabet (Google) which own and manage the mobile device operating systems iOS and Android. Despite the dominance of the platform owners digital services two consumers are ultimately delivered to final consumers via the network operators (see Exhibit 7) .

**Exhibit 13: App economy ecosystem and value chain**



Source: Systems Knowledge Concepts ([www.skc.net.au](http://www.skc.net.au))

The wave of ‘disruption’ that has accompanied the rise of the app economy and the smartphone will likely have even more significant long-run economic impacts than previous generations of broadband-driven technological change because the smartphone makes broadband more pervasively and continuously available. It is clear that markets around the world are of the view that the economic impact of the app economy will be profound. This is demonstrated by the enormous investments taking place in mobile broadband network deployment, research and competition in mobile devices, and high levels of funding and intense competition among disruptive app companies. All this development and disruption, however, has profound implications for the regulation of ICT and, in addition, presents a completely new set of regulatory challenges which intersect with but also extend well beyond traditional regulatory concerns in the ICT sector.

Another expression to describe the economic importance of the digital economy is ‘Industrial Revolution 4.0’. The idea behind Industrial Revolution 4.0 is that a confluence of big technological trends is about to deliver large and unprecedented – in effect ‘revolutionary’ – productivity improvements. These big trends include: AI and machine learning, automation (including autonomous vehicles and robotics), big data, cloud computing, AR and VR, Internet of things among others (see Exhibit 14).

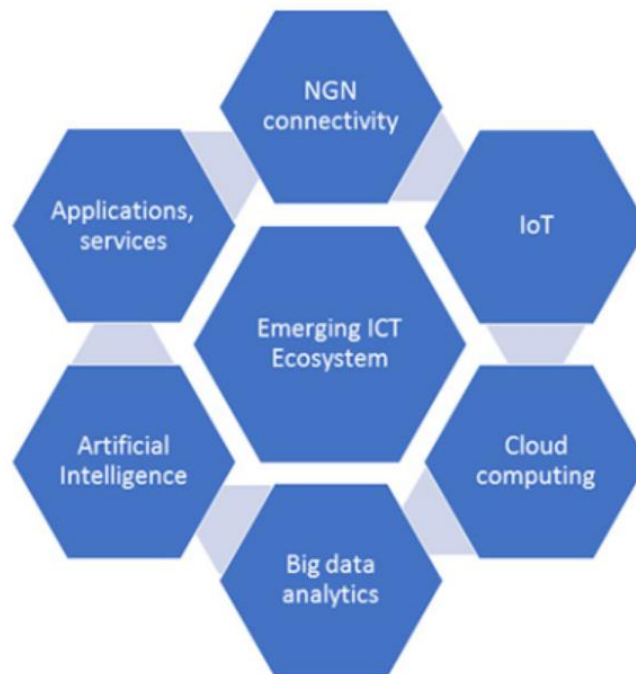
The fundamental proposition of Industrial Revolution 4.0 is that the current confluence of technological changes will result in an unprecedented increase in productivity driven by the mutually reinforcing positive impacts of all of these technological changes. If this prognosis is correct, it is inevitable that significant disruption will be associated with this projected explosion in productivity. This will include disruption to:

- existing business models and business structures

- existing skill sets which will be made less relevant or even obsolete
- employment – potentially very large levels of unemployment at least while labor markets adjust to new economic circumstances
- existing government policy and regulatory models and the need to innovate these
- various types of associated social norms.

These types of disruptions emphasise the fact that there are winners and losers from technological change. There is significant potential for various types of inequality to be created via these changes and governments will need to be alert to addressing these.

**Exhibit 14: Factors influencing the optimal strategic infrastructure development path**



Source: ITU Measuring the Information Society Report 2017 – Vol 1

Nonetheless, there is an element of ‘inevitability and irresistibility’ to these changes. Because improvements in information and communication technologies are invariably aimed at improving productivity, adoption of new technologies will lead to improved national competitiveness and faster economic growth. Conversely, countries that do not embrace technological change or fall behind, will experience falling relative, or even absolute, living standards. Thus, technology driven economic growth represents a set of policy challenges regarding efficiency equity trade-offs in the modern economy. Resisting rapid technological change on the basis of its equity outcomes is likely to be, in the long run, negative for any nation and a better approach is likely to be the rapid embrace of technological change accompanied by a keen focus on equity issues as they arise.

## 4.2 Competition between digital platform services and traditional ICT

Apple’s launch of the iPhone in 2007 marked a significant turning point in the history of the ICT industry.

Exhibit 15<sup>78</sup> explains how smart phone technologies and digital services have increasingly driven ICT carriers towards becoming commodity bandwidth providers.

Prior to the emergence of digital platform communications services, carriers were able to directly offer their customers a range of value-added services which were typically associated with higher margins. Over time, the increasing range and sophistication of digital services has decreased the demand for operator services.

<sup>78</sup> How the iPhone changed the ICT industry, Rachel Sandler, USA TODAY, July 4, 2017: <https://www.usatoday.com/story/tech/news/2017/07/04/how-iphone-changed-ICT-industry/103154146/>

**Exhibit 15: The iPhone's impact on ICT**

How the iPhone changed the ICT industry

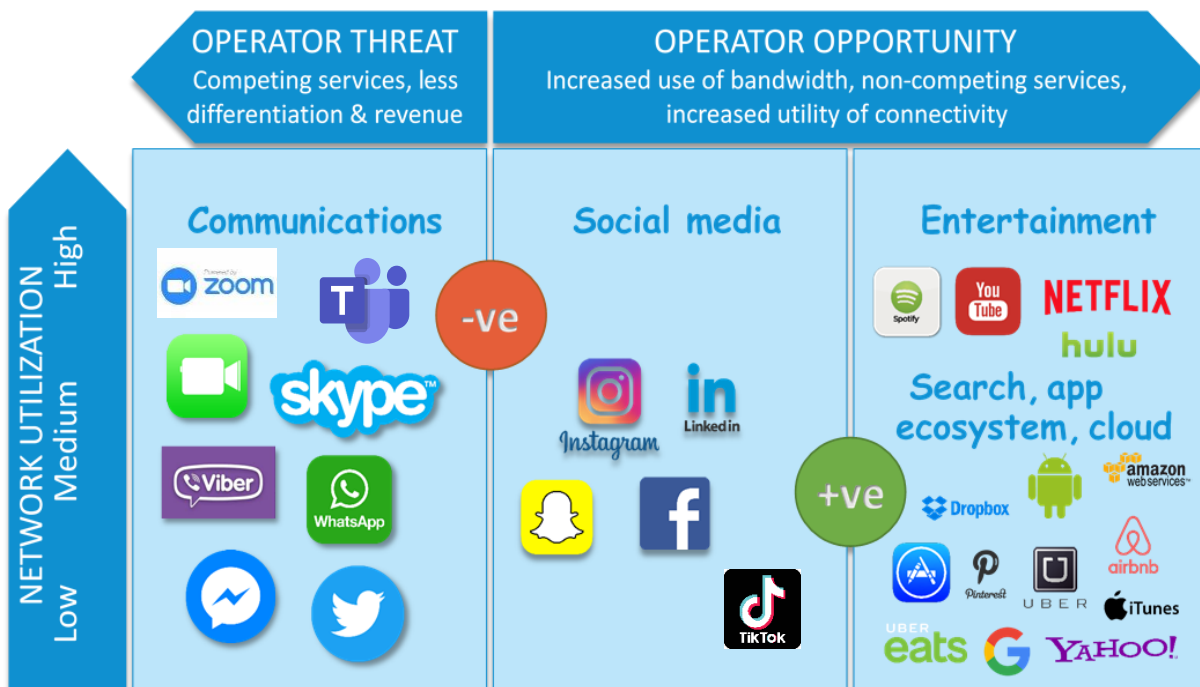
Everything about the iPhone was Apple's: the phone itself, the design, the operating system. The only thing Apple needed was a network that allowed users to talk, text and browse the Internet. Enter AT&T's mobile services company, formerly known as Cingular Wireless.

Apple and the wireless carrier struck a deal before the iPhone was first announced at the Macworld Conference in January 2007. The company would be the iPhone's exclusive carrier. But the agreement was a risk. The carrier was concerned about becoming a dumb pipe, or a mere conduit for a data and minutes, instead of company that could also provide services and applications on top of its network ...

Its [AT&T] deal with Apple would start a fundamental shift for cell phone companies. Increasingly, consumers' brand loyalty is now to the platform or the manufacturer, such as Apple, Google or Samsung. At the same time, carriers were forced to beef up their networks to support the increased data needs of the smartphone boom. As a result, experts say, the wireless industry is becoming increasingly commoditized, meaning there is little difference between what each carrier offers.

It is important to observe, however, the digital platform services have not completely displaced traditional ICT services. For example, the total number of SMS message send globally increased from 1.17 trillion in 2011 to 1.76 trillion in 2018<sup>79</sup>. Although the messaging services associated with digital platforms are typically more functional than traditional SMS services, SMS has the advantage of a high level of interoperability. The same can be said of traditional voice telephony over land lines and mobile services. Exhibit 10 provides a visualisation of how digital platform services intersect with traditional telecommunication services. Given the complexity and diversity of many digital platforms this representation requires significant simplification.

**Exhibit 16: The app economy: opportunities and threats for carriers**



Source: Windsor Place Consulting ([www.windsor-place.com.au](http://www.windsor-place.com.au)) and Systems Knowledge Concepts ([www.skc.net.au](http://www.skc.net.au))

On the left panel of Exhibit 10 are the digital platform services that most directly compete with traditional communication services. These include Skype, Apple FaceTime, and WhatsApp. More recently, group videoconferencing applications have risen to prominence including Zoom and Microsoft Teams. In the middle panel are social media platforms which are dominated by Facebook. Besides enabling users to publish a range of

<sup>79</sup> Statista: <https://www.statista.com/statistics/485098/a2p-and-p2a-sms-traffic-worldwide/> (accessed 10/11/2020)



content, these platforms also typically provide messaging services. Thus, while social media platforms may compete, in part at least, directly with traditional messaging services, they also benefit ICT carriers by stimulating demand for bandwidth. On the right-hand panel are entertainment, search, cloud and other services which are not provided by ICT carriers and drive increased demand for bandwidth.

Thus, there are positive and negative effects on ICT carriers arising from the growth of digital platforms and their associated services. This means that the final impact on operators is ambiguous and will vary from one jurisdiction to another.

### 4.3 The Impact of Digital Platforms on Traditional Regulatory Issues

There is an extensive range of ICT regulatory issues arising from the rise of digital platforms. As the extent of these concerns become apparent to regulators and operators, one of the early articulations of the regulatory challenge was in terms of the need to create a 'level playing field' for competition between carriers and digital platforms. Exhibit 17 provides a list of these areas of regulation. These will be discussed in more detail below.

**Exhibit 17: Regulatory imbalances between traditional and OTT operators**

	Areas of Regulation	Network Operators	OTT Players
1	<b>Applicable laws</b>	Domestic law or in Europe EU regulations	Home jurisdiction maybe; many gaps in applicable laws
2	<b>Taxes</b>	Local and domestic taxes	Located in low cost locations and tax havens
3	<b>Licensing</b>	Must be granted or acquire licence from national Governments	Mostly exempt
4	<b>Operating Area</b>	Only serve customers within the jurisdiction	Serve any user globally
5	<b>Infrastructure / Network</b>	Investing in new technology networks to deliver services to end users	No investments in networks that reach end users while telcos must deliver competitors services
6	<b>Competition</b>	Strict rules applying including ex ante & per se rules, M&A restrictions	Mostly exempt except M&A if OTT subject to domestic competition law
7	<b>Fees</b>	Customers' charges contribute to the costs of network provisioning	Services offered without any relationship to the underlying costs; two sided markets
8	<b>Quality of Service</b>	License requirements include SLAs and/or mandatory QoS standards	No QoS guarantee QoS issues blamed on network provider
9	<b>Inter-connection</b>	Required as part of regulatory regime Additional costs	OTTs have no interconnection requirements for calling or messaging
10	<b>Net neutrality</b>	If applicable, best effort data transport without discrimination, independent of source or nature of data Only typically traffic management permitted.	No obligations (control over content and freedom of choice concerning customers) OTTs could be affected if Network operators apply traffic management restrictions
11	<b>Emergency services</b>	Mandatory provisioning as part of licence conditions	Typically no such obligations
12	<b>Interception</b>	Strict regimes with costs borne by operator	Typically no such obligation
13	<b>Retail Prices</b>	Regulators' approval is typically needed in advance	No need for approval and maybe free for users
14	<b>Universal Service</b>	Mandated. USO contributions as a percentage or network revenues	No contribution
15	<b>Spectrum fees</b>	Required to acquire in an auction or pay market based fees for usage	No additional costs for OTT
16	<b>Privacy</b>	Strict data protection and privacy requirements for users	Practiced on a limited and generally voluntary basis
17	<b>Number Portability</b>	Obligation to offer number portability between providers	OTT service independent from mobile number

Source: [Moktar Mnakri, Regulating "Over-The-Top", Services - Need and Efficiency, Arab Regional Forum on "Future Networks: Regulatory and Policy Aspects in Converged Networks". 19-20 May 2015 as augmented and modified by Windsor Place Consulting.](#)

### 4.4 Positive and negative impacts from the rise of digital platforms

The rise of digital platforms drives a redistribution of benefits and cost throughout national economies. Exhibit 18 provides a summary of how various stakeholder groups are impacted by the rise of digital platforms. Clearly, consumers like digital services as

indicated by the huge number of social media users and users of search services. While digital services are a benefit to consumers, analysts have raised concerns about misuse of personal information, the use of big data to exploit ‘human reward systems’<sup>80</sup>, and negative impacts of digital platforms on consumers in related markets (for example, monopolisation of digital advertising markets<sup>81</sup> leading to higher priced products which negatively impacts consumers).

For industries and businesses outside the digital sector, there are benefits in terms of increased marketing opportunities because consumers become easier to reach through digital platforms. Some sectors, however, face severe negative impacts through digital disruption of traditional business models with prime examples being media sector in particular industry segments such as taxi business and accommodation which have been targeted by specific digital players such as Uber and Airbnb.

Similar mixed outcomes are experienced by national governments and happy national or country-wide levels. Governments face taxation challenges in relation to digital platforms although more widespread use of digital technologies enables governments to deliberate services online which, at least in the long-term, should lead to lower costs.

Speaking more broadly, there is growing and more widespread discussion of the negative impacts of digital platforms on political processes and social cohesion. These considerations are outside the scope of national ICT regulators but they do make clear the interconnectedness of regulatory and legislative issues that have been raised by the emergence of digital platforms and are now becoming areas increasingly scrutinised by governments around the globe.

The unambiguous winners in the rise of digital platforms are, of course, the digital platforms themselves and their shareholders. As Exhibit 18 makes clear, the rise of digital platforms has driven nothing less than a revolution in industrial structure over the past 13 years (the launch of the iPhone in 2007 marks a convenient starting point for the rise of digital platforms).

**Exhibit 18: Positive and negative impacts from the rise of digital platforms**

Stakeholder group	Positive effects of digital services	Negative effects of digital services	Net impacts
<b>Consumers</b>	<ul style="list-style-type: none"> <li>Better, lower price services</li> <li>Wider range of innovative, content and services offerings</li> </ul>	<ul style="list-style-type: none"> <li>More advertising</li> <li>Loss of personal information (security and privacy)</li> <li>Complaints</li> </ul>	<ul style="list-style-type: none"> <li>Hugely positive for consumers</li> <li>Concerns about privacy and control of personal information</li> </ul>
<b>Non-comms businesses</b>	<ul style="list-style-type: none"> <li>Better, lower price services</li> <li>Increased competitiveness</li> <li>New distribution and marketing channels increasing customer engagement</li> </ul>	<ul style="list-style-type: none"> <li>Possibly reduced demand for outputs from other sectors (eg, retail) if ICT/ICT services increase as a proportion of GDP</li> <li>Industry disruption</li> </ul>	<ul style="list-style-type: none"> <li>Positive for business - except sectors disrupted such media, taxis.</li> </ul>
<b>OTT or Online service providers</b>	<ul style="list-style-type: none"> <li>More users, more revenues, greater economies of scale and barriers to entry by competitors</li> <li>Monetising personal information</li> <li>Opportunity to initial public offering, (IPO) capital raisings, etc</li> </ul>	<ul style="list-style-type: none"> <li>Increased provisioning costs (but falling per user provisioning costs with increased scale)</li> <li>May need to invest to address bottlenecks</li> </ul>	<ul style="list-style-type: none"> <li>Hugely positive for OTTs</li> </ul>
<b>Existing fixed and mobile network operators, ISP, and broadcasters</b>	<ul style="list-style-type: none"> <li>Increased demand for and revenue from data services</li> <li>Falling costs due to simplification and move to lower cost IP infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of revenue for legacy voice and SMS services</li> <li>Loss of market power</li> <li>Need for additional spectrum, investment to handle demand, congestion, quality of service</li> </ul>	<ul style="list-style-type: none"> <li>Currently negative but increased Data demand may make positive</li> <li>Partnering may be positive</li> </ul>

<sup>80</sup> Stigler Committee on Digital Platforms, Final Report, 2019, the George J. Stigler Center for the Study of the Economy and the State

<sup>81</sup> ibid p 8

Stakeholder group	Positive effects of digital services	Negative effects of digital services	Net impacts
<b>National Governments</b>	<ul style="list-style-type: none"> <li>Increased ICT/ICT efficiency and lower costs</li> <li>Increased penetration of online services</li> </ul>	<ul style="list-style-type: none"> <li>Negative impacts on taxation revenue &amp; fees</li> <li>Decreased capacity for regulatory intervention because of global scale of digital platforms</li> <li>Reduced ability to provide national security and policing – consumer protection</li> </ul>	<ul style="list-style-type: none"> <li>Negative impacts on revenue raising potential</li> <li>Positive for service delivery</li> </ul>
<b>Country/ National level/ Economy wide</b>	<ul style="list-style-type: none"> <li>Increased ICT/ICT efficiency &amp; consumer welfare</li> <li>Platform for the establishment of new and innovative disruptive businesses</li> </ul>	<ul style="list-style-type: none"> <li>Increased imports (of digital services and products), loss of tax</li> <li>Reduced ability to pursue national objectives</li> <li>Fragmentation of national markets and undermining of national culture/sport markets</li> </ul>	<ul style="list-style-type: none"> <li>Variable depending on the country and its policies</li> <li>Active policy setting required</li> </ul>

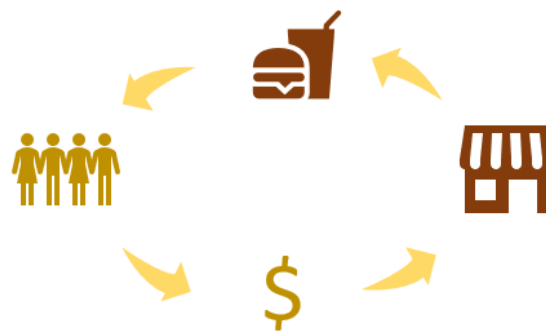
Source: Modified version. Windsor Place Consulting, March 2017. Available in ITU, Regulatory Challenges and Opportunities in the new ICT Ecosystem, 2017, page 61

#### 4.5 Challenges in regulating digital platforms

Digital platforms and services do not fit easily into the analytical frameworks used by ICT and competition regulators. These analytical frameworks are based on traditional market definition metrics such as geography, control of essential facilities, market share measured by number of users, operator revenue shares, traffic and profitability. Digital platforms and services, however, defy traditional competition analysis because they are typically offered to consumers free of a monetary charge as part of a two-sided market set of transactions.

In a normal market, (see Exhibit 19) the relationship between the consumer and the supplier is direct with consumers paying the supplier directly for a specified product or service. The transactions are visible and transparent. Prices are clearly indicated to consumers and the flow of goods and services and revenue are relatively easily observable.

Exhibit 19: A normal (one-sided) market



Source: Systems Knowledge Concepts ([www.skc.net.au](http://www.skc.net.au))

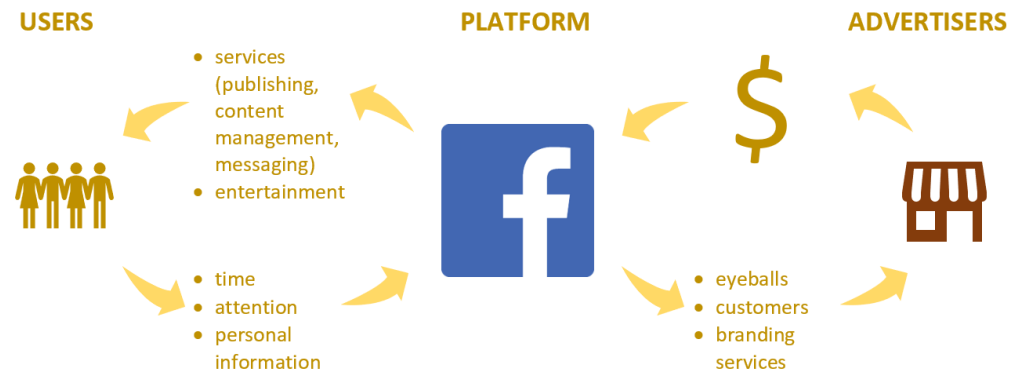
In contrast, a two-sided market entails a business entity which operates in two distinct but related marketplaces. Exhibit 20 illustrates a normal and a two-sided market using Facebook as an example. Facebook supplies a set of services to users and in response receives the attention and personal information of those consumers. Facebook then charges advertisers for targeted access to these consumers. In effect, Facebook produces audiences which it sells to advertisers. This means that the traditional metrics used in ICT competition analysis, for example, user prices, revenue shares, profitability or ICT traffic shares, are impossible or much harder to use for assessing competitiveness within specific national markets.

Other factors complicating traditional analytical frameworks are the globe-spanning scale of digital service providers and the fact that they simultaneously operate across several

industries as they are traditionally defined, for example, communications, publishing, media and advertising.

Not only are competition frameworks difficult to apply to digital service providers, a concise definition of digital platforms remains elusive. The digital platforms players are diverse with quite different fundamental business models and economic drivers, for example, Google and its search algorithm, Apple and its design leadership in hardware, Facebook with its massive network economies and so on.

**Exhibit 20: A two-sided market**



Source: Systems Knowledge Concepts ([www.skc.net.au](http://www.skc.net.au))

In the absence of a unifying and clear definition, regulators need to be pragmatic. Exhibit 21 contains the description of what ‘digital platforms are and aren’t’ developed by the Australian Communications and Competition Commission (ACCC) for their 2018-19 inquiry into digital platforms. According to the ACCC the term ‘digital platforms’ is shorthand for ‘digital search engines, social media platforms and other digital content aggregation platforms’.

**Exhibit 21: The Australian Communications and Competition Commission: ‘What digital platforms are and aren’t’**

Digital platforms **are** often:

**Global** – few services or applications of unique providers have gathered as many users previously. More people use social media, for instance, than have access to clean drinking water and sanitation.

They may also be ‘borderless’, insofar as national frameworks and jurisdictions may struggle to control their operations, due to their global nature – let alone tax them.

**Desirable** – these services can appeal to several billions of users. The demand for some platforms and apps is huge and growing.

**Opinion-building** – for better or for worse, digital platforms can make or break local businesses, markets and possibly even political and social systems. Their power has grown exponentially and it is not clear if the organizations themselves are able to handle it.

Funded by **advertising and monetizing user data** as part of their native business models. It is clear that many digital platforms collect, manipulate, process and analyze user data as a core part of their operations.

In addition, many are **moving into traditional industries**, providing alternative services based on digitally native business models and are creating disruption across the economy. This makes them difficult to classify, following established categories – for example, in 2017, the European Court of Justice ruled that Uber is officially a taxi firm<sup>63</sup> when deciding between categories of taxi firm or online platform.

They may **straddle often unrelated industries** – for example, Google straddles unconnected sectors of search, advertising, translation, maps and navigation, satellite imagery, e-mail (Gmail) and documents. In reality, all these areas deal with data – just one of Google’s many competencies.

Digital platforms **are not**:

- Solely ‘Over-the-Top’ content providers. These have become major data carriers and infrastructure providers in their own right, building massive Content Distribution Networks (CDN) and submarine cables.
- Public networks, so they cannot be considered as utilities.

- Open access over their infrastructure. According to critics, this is ironic as digital platforms were initially able to access telecom networks. User data portability remains limited, where available, too.
- Transparent, especially with regard to data practices and user content management. Recent examples of data mismanagement have fuelled heated public debate globally.
- Regulated in most fields of their operations. This can give digital platforms a sizable competitive advantage and effectively, a regulatory honeymoon.

Source: [Australian Communications and Competition Commission, 2019](#)

The European Commission's Communication on Online Platforms, published on 25 May 2016, identified certain key areas where further efforts are needed. The guiding policy principles pursued by the Commission are:

- A level playing field for comparable digital services;
- Ensuring that online platforms behave responsibly to protect core values;
- Fostering trust, transparency and ensuring fairness;
- Keeping markets open and non-discriminatory to foster a data-driven economy.

The Communication provides that “online platforms come in various shapes and sizes and continue to evolve at a pace not seen in any other sector of the economy. Presently, they cover a wide-ranging set of activities including online advertising platforms, marketplaces, search engines, social media and creative content outlets, application distribution platforms, communications services, payment systems, and platforms for the collaborative economy.”

Online platforms share some important and specific characteristics, in particular:

- they have the ability to create and shape new markets, to challenge traditional ones, and to organise new forms of participation or conducting business based on collecting, processing, and editing large amounts of data;
- they operate in multisided markets but with varying degrees of control over direct interactions between groups of users;
- they benefit from ‘network effects’, where, broadly speaking, the value of the service increases with the number of users;
- they often rely on information and communications technologies to reach their users, instantly and effortlessly;
- they play a key role in digital value creation, notably by capturing significant value (including through data accumulation), facilitating new business ventures, and creating new strategic dependencies.”

Given the complexity of digital platform impacts on operators and given the differences in competition and regulatory settings in different jurisdictions, sweeping generalisations about changes to the competitive landscape in ICT should be avoided. Perhaps the most useful generalisation is to observe that pre-digital platform regulatory settings are likely to need revisiting if only to confirm that they are still appropriate in the current context but that this should be undertaken with an open mind about whether they need to be modified.

Such an evaluation would focus on regulatory imbalances between the treatment of operators and digital service providers. The calls from operators to implement a ‘level playing field’ may, however, prove difficult to realise given the vastly different technological and economic foundations of traditional operator services and digital services. The guiding principle in such endeavours should clearly remain the traditional long-term interests of end users and this objective brings into focus the need for ongoing investment to extend mobile coverage and upgrade existing networks to new generations of technology.

Finally, regulators and legislators should be aware that the digital economy represents a significant wave of innovation and economic evolution. All citizens and national economies stand to benefit from the efficiencies and increased competitiveness provided by digital apps and services although these benefits need to be evaluated in the context

of the associated risks and negative impacts such the decline in traditional media and journalism and potentially negative social and political impacts.

#### 4.6 Financial impacts of digital platforms on operators

As noted above (Section 4.2) the growth of Digital platforms and their associated OTT services has benefited communications operators as it has dramatically increased the demand for data. At the same time, however, OTTs are also negatively impacting traditional revenue streams from domestic and international voice and text messaging.

How these changes affect traditional operators going forward is far from obvious. In large part, this depends on how operators adapt to meet the changes in demand, how capable they are in monetizing the increased usage of data, and the costs of building and operating networks and infrastructure.

#### Demand factors

From a consumer perspective OTTs increase the demand for data capacity and industry forecasts consistently indicate that bandwidth demand is expected to increase dramatically and indefinitely, and that the increase, to a large extent, is driven by video streaming. Different markets will obviously be at different stages, but there is no reason not to believe that all markets eventually will follow the same path. For a consumer this translates into increased demand for:

- data connectivity coverage and reliability
- higher capacity and higher speed
- lower willingness to pay per unit price on data.

This demand for better bandwidth and data services is likely to be associated with some willingness to pay more for bandwidth services in total but will also likely be associated with a decrease willingness to pay for traditional voice and text services.

This increasing emphasis on data services means that increasingly the deciding factor for consumers for choice of operator and subscription packages will be cost, reliability and coverage for wireless data services. Further, this implies that the traditional telecom value chain is shifting. Where the usage of the telecom services was traditionally tied to the operator of choice, the usage beyond data connectivity is increasingly associated with the OTTs and less with the telecom operator as such. This leads to new partnerships between operators and OTTs where for example data used on certain applications is rated lower or may even be free up to a certain limit (e.g. a YouTube subscription) and exclusive access to certain services (e.g. gaming).

#### Operator revenues

The impacts of digital platforms and OTT services on telecom operator revenue will depend upon the relative impact of:

- the positive effects from increased data demand and consumption
- the positive effects from new revenue streams enabled by OTTs
- the negative effects from decreased demand or willingness to pay for traditional voice and text services.

The overall net effect from above is not at all obvious and will differ between markets and operators. Recent research from Juniper [need a reference for this] suggests that the negative effects, at least on a global scale, is expected to significantly exceed the positive effects leading to an overall substantial decline in operator revenue (timeframe 2020-2024). This, however, in my experience seems somewhat exaggerated. [need a reference or data to support]

OTT services have been in the market for almost 20 years (Skype was launched in August 2003<sup>82</sup>), and still the industry has overall maintained growth, or at least avoided outright

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<sup>82</sup> A Brief History of Skype – the peer to peer messaging service, <https://content.dsp.co.uk/history-of-skype>



decline in revenue suggesting that the substitution effect from voice to data is stronger than what seems to be indicated by the research by Juniper.

This may be explained by a 'share of wallet' perspective, meaning that the average spent by the individual consumer in the short to medium term remains fairly stable and that any savings from reduced spending on traditional voice/text is matched by increased spent on data to accommodate OTT services. Further, the OTT services may open up new markets and new revenue streams contributing the maintenance of operator revenue.

With continuous decline in retail data prices, increased data limits and increased saturation, operators overall may start to see slight decline in revenue. Arguably Europe and Southeast Asia are starting to experience this. [Would be useful to have a reference for this and/or some data]

While the decline in revenue for operators has been predicted for years, operators, by and large, appear to have been quite resilient and have been able to manage the transition from traditional revenue streams to more data-centric revenue streams.

This being said, individual markets and individual operators may be impacted differently and experience a significant range of market developments. In addition, operators will be exposed in different ways to various regulatory frameworks.

## Operator costs

It is likely that the transition from the traditional focus on voice and text into more data-centric services will tend to drive up the costs associated with infrastructure and network equipment other factors remaining constant. It is, however, other factors that, again lead to overall cost outcomes being less certain. The main cost impacts from the shift to data are:

- gaining access to increased spectrum
- increasing network transmission capacity
- increasing the 'densification' of networks
- implementing new more data efficient technologies (4G/LTE and 5G).

It is an oversimplification, however, to say that the transition to a more data-centric operation unambiguously increases costs for operators. The other factors that need to be considered are:

- improved performance and falling costs of new generations of ICT equipment
- improve performance of new communication standards, in particular 5G
- as all ICT services consolidate around data – 'IP everywhere' – opportunities emerged to consolidate input costs across all services
- other opportunities to evolve operations and strategy to accommodate new market conditions.

In general, operators appear to be quite capable and resilient and adapting their operations and managing costs to accommodate changing revenue forecasts in order to protect margins.

Perhaps the most important high level conclusion is that it is important that regulators give consideration to supporting an environment where operators can transition their operations as rapidly and efficiently as possible to adapt to the future data-centric business models rather than focus on industry revenues, costs and margins. To the extent that operators cannot adapt their business practices and business models becomes more likely that the higher costs associated with data centric operations will permanently weaken margins, limiting capacity for investment and upgrades with likely negative consequences for the overall economy. The flip-side of this scenario is one in which more flexible regulatory regimes, including, critically increased spectrum availability, are more likely to speed up the transition of operators into sustainable data centric operational models.



## 4.7 Emerging consensus on the need to regulate digital platforms

Despite the fact that the rise of digital platforms constitutes the most significant industrial phenomenon of the last 20 years (see Exhibit 1), a widespread consensus that ‘big tech’ has created problems that demand regulatory responses has only emerged in the last one or two years. It is reasonable to say that 2020 represents a turning point wherein almost all national governments in the developed world have reached a largely bipartisan consensus that a range of regulatory interventions are necessary. While other jurisdictions, particularly the EU, but also Australia, have implemented various intervention over the past five to 10 years, the USA has only recently appeared to have reached a bipartisan position although there is still some time to wait before the newly-elected US government makes its position clear although in December 2020 Forty-five US states joined a bipartisan coalition against Facebook lead by New York’s attorney-general, who stated. “By using its vast troves of data and money Facebook has squashed or hindered what the company perceived as potential threats. They’ve reduced choices for consumers, they stifled innovation and they degraded privacy protections for millions of Americans.”<sup>83</sup> In addition the US Federal Trade Commission (FTC) has sued Facebook for monopolistic practices in social-networking and demanded remedies including the firm’s break-up.

This new consensus contrasts starkly with the absence of any universally clearly preferred models for regulatory intervention. It appears that digital platform regulation is a problem without historical precedent or at least one that is decisively instructive. Governments in different jurisdictions are concerned with different aspects of the behaviours of digital platforms. The EU has focused on data privacy and anti-competitive behaviour, Australia is focused on protecting the professional journalism of traditional media from digital platform-driven advertising revenue loss, and the USA is pursuing the issue of political censorship and misinformation. The emergence of this new consensus means that, increasingly regulators are likely to consider digital platform interventions as they continue to respond to traditional regulatory concerns.

### Exhibit 22: UK’s Digital Markets Unit

#### The UK establishes a new Digital Markets Unit

The UK government has established a dedicated Digital Markets Unit (DMU) to introduce and enforce a new regulatory regime to govern the behaviour of platforms that currently dominate the market. This is to protect small businesses and users from the potential harms and disadvantage associated with enduring market power in digital platform markets. The new regulatory body will begin operations in April 2021 and will sit within the Competition and Markets Authority (CMA).

The CMA’s final market study report on online platforms and digital advertising markets, published on 1 July 2020, found that concentration of power amongst a small number of tech companies such as Google and Facebook impedes growth and innovation in the tech sector. It also results in higher prices for businesses and customers alike. The UK Government has largely accepted the CMA’s market study findings, particularly in relation to how existing competition tools are insufficient to address potential harms caused by weakened competition in these markets.

As such, a code of conduct will be introduced to provide “strategic market status” (SMS) firms with defined expectations on acceptable behaviour when navigating the market and interacting with customers, users and competitors. Under the new code, platforms may also be required to have increased transparency on the services they provide and their use of consumers’ data. In addition, the code will promote increased fairness in relationships between platforms and their business customers, including news publishers.

Working in collaboration with regulators such as Ofcom and the Information Commissioner’s Office, the DMU will be responsible for SMS designation, maintaining the code and producing supporting guidance for companies. The DMU’s enforcement powers include the ability to suspend, block and reverse decisions of firms having SMS, ordering them to take certain actions to achieve compliance with the code, and imposing financial penalties for non-compliance.<sup>84</sup>

<sup>83</sup> A formidable alliance takes on Facebook, The Economist, Dec 12<sup>th</sup> 2020

<sup>84</sup> <https://www.gov.uk/government/news/new-competition-regime-for-tech-giants-to-give-consumers-more-choice-and-control-over-their-data-and-ensure-businesses-are-fairly-treated>; <https://www.allenoverly.com/en-gb/global-news-and-insights/publications/uk-digital-markets-unit-to-start-operations-in-april#:~:text=The%20upshot%3A%20a%20new%20digital,the%20sources%20of%20market%20power.>

## 5 TAXATION: LEVELLING THE PLAYING FIELD

### 5.1 Introduction

The taxation regime faced by various types of companies within particular countries has a large impact on their overall financial performance. What this means is that taxation structures significantly influence the outcome of competitive processes within markets. The influence of taxation is so pervasive and significant that many organisations design their structure strategy and operations tax minimisation primary consideration.

The rise of digital platforms has significant implications for taxation policy and its operation across many industries but, in particular, in the ICT industry. Traditionally, taxation of corporations has been structured so that tax is owed where the service is produced, but this framework is ill-suited to the effective taxation of digital platforms and OTT services.

Digital marketplaces enable suppliers, consumers marketplace (platform) operators to be located in different jurisdictions.<sup>85</sup>

In fact, the physical location of digital platforms and the geographic definition of where a value is created in their production processes is highly ambiguous and to a large extent arbitrary. Digital platforms claim that a large proportion of their value adding arises from the exploitation of intellectual property and brand assets. Globe spanning digital platforms can create entities in any jurisdiction they choose and locate the ownership of these value creating assets at these locations. Thus, although they may raise significant revenues across multiple jurisdictions because tax is typically levelled on profits or value added, digital platforms do not create tax liabilities in jurisdictions where they raise these revenues.

Because of this interaction between taxation systems and the structure of digital platforms, domestic competitors in particular jurisdictions who face local tax liabilities will be at a disadvantage, potentially a large commercial disadvantage, due to differences in tax treatment. It is important to emphasise that, to the extent that digital platforms redirect revenues from local operators to themselves (be it ICT operators, retail outlets or taxi companies) the economic impacts include an increase in imports of digital services in these platforms, reduced incomes and the local jurisdiction, and a transfer of benefits from domestic taxpayers to the shareholders of digital platforms.

The issue of taxation of digital services has become even more relevant since the onset of COVID-19, as OTT services have performed comparatively far more strongly than many other sectors of the economy and hence represent a now relatively more valuable taxation base for governments. For example, Facebook has seen a 29 percent increase in profits over the past year (to \$7.9 USD billion), whilst Amazon has experienced an increase of 197 percent, recording \$6.3 USD billion in profit.<sup>86</sup>

This section will examine the global approach to taxation of digital services espoused by the Organisation for Economic Cooperation and Development (OECD), and compare the approaches taken in the Africa Arab region so far with other parts of the world.

### 5.2 The OECD and BEPS

Ensuring that Multinational Corporations (MNCs) are appropriately taxed has been a focus of the OECD since the Global Financial Crisis of 2008.<sup>87</sup> International taxation rules were created more than a century ago, and have proved unsuitable in the current age.<sup>88</sup> MNCs often have large, complex business structures that allow taxable income to be attributed

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<sup>85</sup> see:  
[https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BriefingBook46p/MultinationalTaxation](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook46p/MultinationalTaxation)  
[https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BriefingBook46p/MultinationalTaxation](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook46p/MultinationalTaxation)

<sup>86</sup> <https://www.vox.com/recode/2020/10/30/21541699/big-tech-google-facebook-amazon-apple-coronavirus-profits>.

<sup>87</sup> <https://www.oecd.org/tax/beps/about/>

<sup>88</sup> <https://www.oecd.org/tax/beps/policy-note-beps-inclusive-framework-addressing-tax-challenges-digitalisation.pdf>

to countries where the tax rate is lower.<sup>89</sup> The OECD's main focus has been on Base Erosion and Profit Shifting (BEPS) by MNCs. BEPS refers to "tax planning strategies that exploit gaps and mismatches in tax rules to artificially shift profits" to countries with lower taxation rates, so that little tax is paid.<sup>90</sup> BEPS results in annual revenue losses for governments of at least 100-240 Billion USD, equivalent to 4-10% of global corporate income tax revenue.<sup>91</sup> It disproportionality affects developing countries, who have a greater reliance on corporate income tax.<sup>92</sup> International adoption of the BEPS framework is crucial to its success, and as of December 2019, there were 137 countries who are members of the OECD/G20 Inclusive Framework on BEPS.<sup>93</sup>

The digitalisation of the economy has created further issues for taxation of MNCs. Large technology companies are able to provide a service in one location, but recognise the income in a different jurisdiction, where the tax rate is lower.<sup>94</sup> Thus, who should be allowed to tax digital services is a central question caused by the digitalisation of the economy. For example, services like Uber and Airbnb have transformed the ride-sharing and accommodation industries, and the tax revenue associated with them. These digital providers enable 'taxi-like' services to be provided domestically, but the profit-generating asset (that is, the enabling software or platform) is offshore.<sup>95</sup> This leads to a fall in 'back-office' operations within traditional taxi companies which leads to lower domestic employment and income and lower tax revenue for domestic governments. Tax advantage enjoyed by the digital platform makes it harder for local businesses to compete. For these types of reason, addressing the tax challenges arising from the digitalisation of the economy has been a top priority of the BEPS Project and the Inclusive Framework since 2015 with the release of the BEPS Action 1 Report.<sup>96</sup>

The OECD Inclusive Framework has created a two-pillar solution to taxing the digital economy. The two pillars are:

- Creating solutions for determining allocation of taxing rights ('nexus and profit allocation'); and
- Designing a system to ensure multinational enterprises (MNEs) pay a minimum level of tax of profits.<sup>97</sup>

The BEPS framework was designed to be implemented by changes in domestic tax practice, as well as in tax treaties.<sup>98</sup> These two pillars are hoped to form the basis of an international consensus on tax of digital services. However, implementation of the two pillars has stalled, in part due to COVID-19 and also a lack of global consensus.<sup>99</sup> In the meantime, many countries have created their own taxation law notwithstanding the lack of consensus, which may lead to conflicting laws and risks double taxation.

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<sup>89</sup> see:  
[https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BriefingBook46p/MultinationalTaxation](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook46p/MultinationalTaxation)

<sup>90</sup> OECD/G20 Inclusive Framework on BEPS. Available at: <https://www.oecd.org/tax/beps/flyer-inclusive-framework-on-beps.pdf> page 1

<sup>91</sup> ibid page 1.

<sup>92</sup> <https://www.oecd.org/tax/beps/>

<sup>93</sup> OECD, Members of the OECD/G20 Inclusive Framework on BEPS, available at: <https://www.oecd.org/tax/beps/inclusive-framework-on-beps-composition.pdf>.

<sup>94</sup> Andrew Maslaris, France's Digital Services Tax, available at: [https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/FlagPost/2019/August/Digital\\_Services\\_Taxation](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2019/August/Digital_Services_Taxation)

<sup>95</sup> [https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BriefingBook46p/MultinationalTaxation](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook46p/MultinationalTaxation)

<sup>96</sup> OECD, Tax Challenges Arising from Digitalisation – Report on Pillar One Blueprint: Inclusive Framework on BEPS, OECD/G20 Base Erosion and Profit Shifting Project, page 3 <https://www.oecd.org/tax/beps/tax-challenges-arising-from-digitalisation-report-on-pillar-two-blueprint.pdf>

<sup>97</sup> OECD/G20 Inclusive Framework on BEPS. Available at: <https://www.oecd.org/tax/beps/flyer-inclusive-framework-on-beps.pdf> page 2.

<sup>98</sup> OECD, Tax Challenges Arising from Digitalisation – Report on Pillar One Blueprint: Inclusive Framework on BEPS, OECD/G20 Base Erosion and Profit Shifting Project page 3 <https://www.oecd.org/tax/beps/tax-challenges-arising-from-digitalisation-report-on-pillar-two-blueprint.pdf>

<sup>99</sup> OECD, International Community Renews Commitment to Address Tax Challenges from Digitalisation of the Economy, available at: <https://www.oecd.org/tax/beps/international-community-renews-commitment-to-address-tax-challenges-from-digitalisation-of-the-economy.htm>

## 5.3 Taxing Digital Services

There are two common ways that digital services are taxed:

- Directly, through a tax such as a Digital Services Tax (DST), Withholding Tax (WHT) or a Digital Permanent Establishment Tax (Digital PE).
- Indirectly, through a Value Added Tax (VAT) or Goods and Services Tax (GST).

Direct taxes like the DST impose taxation based on where the users of the digital service are located, rather than from where the service is provided from. For example, the UK has imposed a 2% DST on revenues of large businesses that provide a social media service, search engine or online marketplace to users in the UK.<sup>100</sup> 'Large businesses' are defined as those with global revenues of more than £500m and more than £25m of those are attributable to UK sales, demonstrating that the tax is only intended for the largest digital service providers.<sup>101</sup> The OECD's two pillar approach is also an attempt to tax digital services directly. The United States remain opposed to a gross basis digital services tax.<sup>102</sup>

Conversely, indirect taxes such as VAT and GST are consumption taxes, and are placed on a product wherever value is added during its production. The tax ultimately paid by the consumer.<sup>103</sup> For example, Australia requires non-resident vendors of digital services to consumers in Australia to register for and collect GST.<sup>104</sup> VAT is used by more than 160 countries globally, predominately in the EU.<sup>105</sup> It is usually charged at a flat rate and applies to every purchase. The USA is a notable exception and does not impose a VAT – the way that they levy an indirect tax on digital services is state-dependent, and usually has a threshold of either \$100,000 or 200 transactions.<sup>106</sup> The OECD is a strong proponent of consumption taxes and have created international guidelines to try to avoid double taxation.<sup>107</sup>

### Exhibit 23: The 'Netflix Tax' in Australia

#### Case Study: The 'Netflix Tax' in Australia

With the introduction of Netflix in Australia in 2015, domestic streaming services like Stan faced a competitor who did not have to pay GST on its services. The Australian government sought to remove this advantage with the 'Netflix Tax' effective July 1, 2017, which required non-resident vendors of digital services to consumers in Australia to register for and collect GST. Australian streaming services were already required to collect GST on services they provided, and this was the first time GST was applied to digital products and services purchased from overseas companies.

However, the complexity of taxing digital services is demonstrated by the fact that Netflix had an effective tax rate of 0.5% in 2018 (Netflix paid \$341 793 in tax, but made between \$600 million to \$ 1 billion) despite the implementation of the 'Netflix Tax'. Netflix is able to do this by charging Australian users from their Dutch Subsidiary. This demonstrates the potential shortcomings of only implementing an indirect tax like GST on digital services.

<sup>100</sup> Norton Rose Fulbright, The UK's Digital Services Tax: What's New (May 2020) <https://www.nortonrosefulbright.com/en/knowledge/publications/24da19c2/the-uks-digital-services-tax-whats-new#:~:text=The%20DST%20is%20a%20,search%20engine%20or%20online%20marketplace.&text=This%20means%20that%20where%20the,UK%20DST%20liability%20should%20arise>. An example of an online marketplace is eBay.

<sup>101</sup> *ibid.* The first £25m of revenue derived from UK sales is excluded from the tax.

<sup>102</sup> <https://home.kpmg.us/en/home/insights/2020/06/tnf-treasury-secretary-mnuchin-seeks-pause-in-oecd-pillar-1-discussions-of-digital-economy.html>

<sup>103</sup> Investopedia, Value-Added Tax (28 February 2020) [https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20\(VAT\)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed](https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20(VAT)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed).

<sup>104</sup> KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019) <https://tax.kpmg.us/content/dam/tax/en/pdfs/2020/digitalized-economy-taxation-developments-summary.pdf>.

<sup>105</sup> [https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20\(VAT\)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed](https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20(VAT)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed).

<sup>106</sup> KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019) <https://tax.kpmg.us/content/dam/tax/en/pdfs/2020/digitalized-economy-taxation-developments-summary.pdf>.

<sup>107</sup> <https://www.oecd.org/ctp/consumption/articlesonvat.htm#:~:text=The%20OECD%20contributes%20to%20the,taxation%20or%20unintended%20non%20taxation>.

## 5.4 Exemplar global approaches

### 5.4.1 European Union (EU)

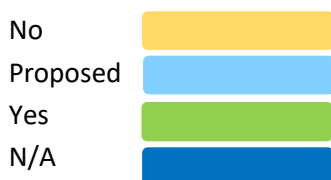
Europe is home to many of the early efforts to tax digital services. The EU has an indirect tax in the form of a VAT imposed on digital services. However, with a ‘VAT gap’ (the difference between the expected revenue and actual revenue from the tax) of €164 Billion expected in 2020<sup>108</sup> due in part to COVID-19, the European Commission has looked for other ways to tax digital services. One option proposed is a digital tax on companies with a global annual turnover above €750 million, which could raise €1.3 Billion per year.<sup>109</sup> The EU has welcomed the OECD’s two pillar approach as a way to tax digital services directly, but is progressing with their own taxation scheme in the meantime, so that if OECD discussions fail, the EU has a DST in place. A summit has been proposed on March 25-26 in 2021.<sup>110</sup>

### 5.4.2 France

France imposed a DST of 3% on revenues from the provision of a digital interface, targeted advertising, and the transmission of data collected about users for advertising purposes.<sup>111</sup> This is a broader tax base than the UK’s DST. There has been a temporary pause in the collection of tax revenue by France, in exchange for the US agreeing to hold off retaliatory tariffs.<sup>112</sup>

**Exhibit 24: New tax arrangements by country<sup>113</sup>**

Country/Region	Member of BEPs?	Direct tax on digital services (E.g.: DST/WHT/Digital PE)?	Indirect tax on digital services (eg VAT/GST)?	Is the indirect tax in compliance with OECD guidelines?
Australia	Yes	No	Yes	Yes
EU	N/A	Proposed	Yes	Yes
France	Yes	Yes	Yes	No
Japan	Yes	No	Yes	Yes
UK	Yes	Yes	Yes	Yes
US	Yes	No	Yes	Yes



<sup>108</sup> European Commission, VAT Gap: EU Countries Lost €140 billion in VAT revenues in 2018, with a Potential Increase in 2020 due to Coronavirus (20 September 2020) [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_1579](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1579)

<sup>109</sup> KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019) <https://tax.kpmg.us/content/dam/tax/en/pdfs/2020/digitalized-economy-taxation-developments-summary.pdf>.

<sup>110</sup> <https://taxfoundation.org/digital-tax-europe-2020/>

<sup>111</sup> <https://taxfoundation.org/digital-tax-europe-2020/>

<sup>112</sup> <https://taxfoundation.org/digital-tax-europe-2020/>

<sup>113</sup> All data is sourced from KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019). <https://tax.kpmg.us/content/dam/tax/en/pdfs/2020/digitalized-economy-taxation-developments-summary.pdf>.

## 5.5 Current approaches in the Arab and Africa regions

Of the 66 countries in the Arab and Africa regions, only 30 are members of the OECD's BEPS scheme.<sup>114</sup> Ten of these countries are in the Arab region, and 20 in Africa. However, with a reduction in taxation revenue due to global lockdowns, the decrease of tourism and reduction in aid, and with an uptick in online transactions due to COVID-19, many African nations are seeking to impose direct taxes on digital services to capture some of the revenue generated.<sup>115</sup> African ecommerce is expected to have an increase in revenue of 41 percent in 2020, so there is a large incentive to tax digital service providers.<sup>116</sup>

## 5.6 Proposed Regional Approach: ATAF

As there has been no global taxation framework created by the OECD, the African Taxation Administration Forum (ATAF) recently published a Suggested Approach for African nations seeking to directly tax digital service providers. As noted in Table 2, African nations like Kenya and Nigeria have already implemented a digital service tax, but this Suggested Approach provides a draft legislation template to assist governments looking to implement a tax. The Suggested Approach by ATAF is a DST with a rate between 1 percent and 3 percent.<sup>117</sup> The scope of revenue to be taxed is:

- Digital services revenue arising from online advertising;
- Digital services revenue arising from data services;
- Digital services revenue arising from the provision of online marketplace services or real property and rental services;
- digital services revenue derived from users of vehicle hire services; and
- Digital services revenue derived from users of digital content services, online gaming services and cloud computing services

In all instances, taxation is imposed based on where the user of the service is located, rather than from where the service is provided.

### 5.6.1 Kenya

From January 1, 2021, the *Finance Act (2019)* imposes a DST of 1.5 percent in Kenya. The applicable tax base is gross revenue from the digital marketplace. The digital marketplace is defined in the *Finance Act* as 'a platform that enables the direct interaction between buyers and sellers of goods and services through electronic means.'<sup>118</sup> This includes streaming services, services that collect data on the digital marketplace, subscription-based services, file-sharing and data storage, online teaching and tickets bought online for live events, or any service provided or delivered through an online digital or electronic platform.<sup>119</sup>

Kenya also requires non-resident vendors of digital services to consumers in Kenya to register for and collect VAT.<sup>120</sup>

<sup>114</sup> OECD, Members of the OECD/G20 Inclusive Framework on BEPS, available at: <https://www.oecd.org/tax/beps/inclusive-framework-on-beps-composition.pdf>.

<sup>115</sup> See ATAF, Taxing the Digital Economy: Covid-19 Heightens the Need to Expand Resource Mobilisation Base (25 August 2020) <https://www.ataftax.org/taxing-the-digital-economy-covid-19-heightens-need-to-expand-resource-mobilisation-base>.

<sup>116</sup> <https://www.politico.eu/article/eu-and-africa-team-up-on-taxing-big-tech-amid-covid-crisis/>.

<sup>117</sup> KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019).

<sup>118</sup> Bowmans, Kenya Sets the Stage for Implementation of the Digital Services Tax (2 October 2020) <https://www.mondaq.com/withholding-tax/990472/kenya-sets-the-stage-for-implementation-of-the-digital-services-tax>.

<sup>119</sup> *ibid.*

<sup>120</sup> KPMG, Taxation of the Digitized Economy: Developments Summary (October 27, 2019).



Exhibit 25: Taxation of digital services in the Africa/Arab Region <sup>121</sup>

Country	Member of BEPs?	Direct tax on digital services (e.g.: DST/WHT/Digital PE)?	Indirect tax on digital services (eg VAT/GST)?	Is the indirect tax in compliance with OECD guidelines?
Algeria	No	No	Yes	No
Congo	Yes	No	No	Yes
Egypt	Yes	Proposed	Proposed	Yes
Gabon	Yes	No	No	Yes
Ghana	No	No	Yes	Yes
Iran	No	No	No	Yes
Jordan	Yes	No	No	Yes
Kenya	Yes	Yes	Yes	Yes
Morocco	Yes	No	No	Yes
Nigeria	Yes	Yes	Yes	Yes
Oman	Yes	No	Yes	Yes
Saudi Arabia	Yes	No	Yes	Yes
South Africa	Yes	No	Yes	Yes
Sudan	No	No	No	Yes
Uganda	No	No	Yes	Yes
United Arab Emirates	Yes	No	Yes	Yes
Zambia	Yes	No	No	Yes
Zimbabwe	No	Yes	Yes	Yes



### 5.7 Conclusions: ensuring a fair and equitable digital services market

This appendix has demonstrated the need to ensure that international and domestic digital services are both taxed in a manner that creates a level playing field which enables healthy, sustainable competition to thrive. This restores the fundamental social benefit of competition which is to direct society’s scarce resources to those uses which are of most benefit to consumers. If only domestic digital services are taxed, MNCs will likely be conferred an unfair advantage. In the face of revenue lost due to the growing footprint of digital platforms, governments may be more inclined to tax domestic players more heavily to make up for lost revenue, thereby compounding the problem. Therefore, the following recommendations focus on how digital service providers could be taxed to ensure fair competition.

<sup>121</sup> *ibid.*



Firstly, it is recommended that those countries that are yet to join the BEPS framework do so, as a unified approach is required for the complicated issue of taxation of digitalised services. However, as the OECD has not finalised the form of digital services tax that will be recommended, there are other actions that countries in the Arab and Africa regions could take in the meantime.

Countries outside of the Arab and African regions have adopted more taxation measures on digital services than many countries in the region. One option for countries to impose a tax on foreign digital services is by imposing a VAT/GST. However, it is important to keep in mind that as it is a consumption tax, it is charged at a flat rate and can disproportionately impact low income earners.<sup>122</sup>

A second option would be to follow the lead of Kenya, Nigeria and Zimbabwe and implement a DST. Countries may choose to wait until the OECD has finalised a DST that all member states are recommended to adopt. However, delay means lost opportunities for countries to tax the revenue of OTT services. Therefore, the ATAF approach may provide a valuable resource for African states, as would the examples by the UK and France. However, there are possible adverse trade consequences that could arise from imposing the tax, so this should be weighed up. Consideration should be given to the likely amount of revenue a DST would generate, both now and in the future as the consumption of digital services grows.

**Exhibit 26: Uber in Nairobi, Kenya**

**Case Study: Uber in Nairobi, Kenya**

Ride hailing and taxi services are a key part of the African Economy. Africa hosts nearly sixty ride-sharing services across 21 countries,<sup>123</sup> and revenue from these services is expected to hit \$2236 USD million in 2020.<sup>124</sup> However, with the introduction of Uber in Kenya in 2015, local companies were placed at a disadvantage as Uber was not subject to the same taxation. Kenyan Uber drivers pay Uber 20 percent of the revenue they earn, but this money is not taxed by the Kenyan Government because it is a technology company, registered to pay tax in other jurisdictions.<sup>125</sup> Kenyan taxi services, on the other hand, are classed as a public service provider and therefore are subject to government regulation including taxation and a monthly fee paid by taxi drivers.<sup>126</sup> This has allowed Uber to provide a cheaper service than local taxis, because they are not taxed in the same way. However, with the wide definition of 'digital marketplace' in Kenya's Finance Act, Uber will be caught by the new DST. Therefore, the DST could help level the playing field between domestic taxi companies, and MNCs like Uber.

It is worth noting, however, that the introduction of Uber has been beneficial for Kenyan consumers, as domestic companies have adapted and expanded their services in order to compete. For example, the Kenyan-based Little Cab operates like Uber but accepts payment from the local cashless mobile payment system, MPesa. This makes it popular with locals and therefore able to compete with Uber, as 94 per cent of Kenyans prefer MPesa to other payments.<sup>127</sup> This shows that the introduction of MNCs into local markets can have a positive effect on competition, but if the taxation conditions are not equal, the domestic players will usually suffer.

<sup>122</sup> Investopedia, Value-Added Tax (28 February 2020) [https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20\(VAT\)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed.](https://www.investopedia.com/terms/v/valueaddedtax.asp#:~:text=A%20value%2Dadded%20tax%20(VAT)%20is%20a%20consumption%20tax,that%20have%20already%20been%20taxed.)

<sup>123</sup> United Nations, Africa's App-based Taxis battle Uber over Market Share (November 2017) <https://www.un.org/africarenewal/magazine/august-november-2017/africa%E2%80%99s-app-based-taxis-battle-uber-over-market-share#:~:text=By%20last%20June%2C%20Uber%20was,stuff%20competition%20from%20local%20companies.>

<sup>124</sup> <https://www.statista.com/outlook/368/630/ride-hailing-taxi/africa#market-revenue>

<sup>125</sup> <https://www.theeastafrican.co.ke/tea/business/uber-taxi-wars-in-kenya-highlight-tax-loopholes-in-charging-technology-1345910#:~:text=Uber%20says%20its%20drivers%20are,taxi%20drivers%20will%20file%20returns>

<sup>126</sup> The Atlantic, Uber's Troubled Expansion in Kenya (28 March 2016) <https://www.theatlantic.com/international/archive/2016/03/uber-kenya/475533/>

<sup>127</sup> United Nations, Africa's App-based Taxis battle Uber over Market Share (November 2017) <https://www.un.org/africarenewal/magazine/august-november-2017/africa%E2%80%99s-app-based-taxis-battle-uber-over-market-share#:~:text=By%20last%20June%2C%20Uber%20was,stuff%20competition%20from%20local%20companies.>

## 6 THE REGULATORY ROAD AHEAD

### 6.1 Introduction

With the COVID-19 pandemic now clearly extending well into 2021, regulators across Arab and Africa regions continue to face an environment that is more dynamic and less certain than it has been at any other time. The main factors that are driving dynamism and the need for new regulatory approaches are:

- the **emergence and rollout of new technologies**, in particular 5G, and the associated implications for collaboration and competition policy in the communications sector and the broader 'digital economy'
- the social and economic need to **rollout new efficient and affordable technologies as soon as possible**, in particular addressing '**digital divide**' issues, given that much of the region has relatively poor connectivity and given that the vast majority of the region will have its connectivity needs **met by wireless rather than fixed line** technologies.
- the ongoing rise and influence of **digital platforms** in the context of new and emerging consensus on the need to **regulate digital platforms**
- the **impacts of COVID-19** and the associated increased pressures on ICT service, significant behavioural changes in individual and organisational ICT customers, and unpredictable macroeconomic impacts
- the ongoing regulatory challenges which are characteristic of **emerging economies**.

The region faces a set of circumstances which are regionally distinctive compared with the issues facing advanced economies and are similar to other regions where there are a relatively high number of emerging economies. The continuing emergence of powerful digital platforms, the high cost of new technology infrastructure deployment, the fact that the Arab and Africa regions are disproportionately dependent on wireless technologies, and the relatively low regional ARPUs mean that the big issues confronting regulators are likely to be:

- Managing new regulatory complexities to do with the deployment of 4G/5G technologies, in particular, the need to encourage infrastructure sharing among operators which creates nuanced problems in competition policy, the need to substantially increase the quantum of IMT spectrum which has been allocated, improve spectrum management approaches in order to encourage the most effective and efficient spectrum use.
- Addressing digital divide issues with greater urgency. COVID-19 has accelerated the migration of a wide range of social and economic activities online. This means that groups with no connectivity or poor connectivity are now *relatively* worse off than they were before the pandemic. The pandemic means that connectivity has never been more important for access, inclusion and opportunity.
- Mergers and acquisitions and the consequent number of operators required to achieve competitive outcomes in an environment where there are multiple types of sharing agreements between operators and where digital platforms also create ongoing competitive pressure.
- The impact of digital platforms in terms of the regulatory issues they raise directly (such as fake news and data privacy) and in terms of the impact they have on operator margins and viability and collaborate with other regulators to respond to regulatory issues outside the core domain of ICT, for example they news, privacy and political interference.

### 6.2 New technologies and regulatory impacts

In the Arab and Africa regions generally, and particularly in African countries, communications is highly dependent on wireless solutions. While new communications technologies, in particular 5G, offer greatly enhanced performance for wireless data services, deploying this technology is demanding in both infrastructure investment terms and in terms of the spectrum it requires to most effectively function. 5G will operate most

effectively and provide the best return on infrastructure investment where it operates in relatively large contiguous spectrum blocks. Further, in most countries in the region ARPUs are quite low meaning that the business case for new infrastructure deployment is difficult to sustain. Nonetheless, significant progress has been made in the region (see Exhibit 27).

These factors mean that there will be significant pressure on regulators to allow various types of operator collaboration and agreements which it would have likely in the past rejected on the basis that such agreements might result in collusion between operators against the interests of end users. These agreements which might include sharing tower sites, sharing physical networks or even sharing active network facilities will deliver significant cost savings over completely independent operators operating in isolation from each other.

Regulators in the region need to understand the technologies and the possibilities for various types of operator collaboration and sharing and the associated benefits while at the same time avoiding negative competitive effects – they need to understand how to achieve the benefits of sharing without the penalty of collusion. This represents a heightened need for regulatory innovation and collaboration.

Given the high cost of infrastructure and low ARPU, the region does not have the option to not encourage infrastructure sharing and optimise regulatory settings around this principle. In one sense it is fortunate that 5G deployments are relatively rare in the region, because this means that there is an opportunity to optimise this important aspect of the regulatory regime at the outset as planning for 5G deployments begins.

This discussion also points to the critical role of spectrum allocation in the region. Because 5G requires large contiguous spectrum bands – in the low, mid and high bands - to operate most efficiently it will be essential to ensure that poor spectrum allocation is not an impediment to the rollout of new technologies. What this implies is that spectrum allocation and management itself becomes a central competition issue. Large contiguous spectrum blocks are scarce and such allocations, if granted to particular operators without a requirement for sharing, could have a large impact on the local competitive landscape that would be difficult to rectify. Therefore, regulators need to have in place a view about acceptable sharing models, regulator capacity to oversee these without negative competitive effects, and clear understanding of what spectrum allocations will support these developments.

**Exhibit 27: Selected Arab African 5G updates**

Country	Summary of its current 5G initiatives in relation to C-Band/3.5 GHz band
<b>Algeria</b>	In November 2018, Mobilis (subsidiary of Algeria Telecom) successfully tested 5G connection at Oran. The trial, which was carried out in conjunction with Huawei, reached downlink data transmission speeds of up to 1.18Gbps. Mobilis began testing 5G coverage in Algiers in August 2020. However, fines were issued to three of Algeria’s operators (including Mobilis) for poor 4G coverage and quality of service in October 2020 by the regulator, ARPCE.
<b>Gabon</b>	Gabon Telecom began trialing a 5G network in November 2019. Frequencies in the 3400MHz to 3500MHz band were used, and the trial was carried out over six months. Although the aim was to see how 5G might be used to develop innovative applications, Gabon Telecom has stated that an actual commercial launch could be some time off.
<b>Kenya</b>	In February 2020, Kenya’s biggest telecom operator Safaricom announced that it will partner with Huawei when it rolls out 5G network in 2020. As of March 2020, seven firms have ongoing 5G trials for 5G with the aim of a future rollout, but had not been deployed as of October 2020. It is expected that the additional spectrum allocation to mobile services in the frequency bands 24.25-27.5 GHz, 37- 43.5 GHz, 47.2 – 48.2 GHz and 66 – 71 GHz will facilitate implementation of 5G mobile services in Kenya.
<b>Lesotho</b>	In August 2018, Vodacom Group launched Africa’s first commercial 5G fixed wireless access (FWA) network in Lesotho. Vodacom was assigned spectrum in the 3.5GHz band, enabling the launch of a commercial 5G service.
<b>Morocco</b>	As of October 2019, the operators Inwi and Maroc Telecom had begun trialing 5G technologies. Further, in January 2020, Huawei announced that it was ready to collaborate with Moroccan operators in deploying 5G technology. 5G is expected to be rolled out in 2022.

Country	Summary of its current 5G initiatives in relation to C-Band/3.5 GHz band
<b>Nigeria</b>	From November 2019 to February 2020, MTN Nigeria implemented 5G mobile internet in three major cities: Abuja, Lagos, and Calabar. MTN is Nigeria's largest operator by subscribers. The 5G tests are said to have used the 3500 MHz and 26GHz bands allocated to MTN by the NCC. No dates for a 5G rollout have been given and the NCC have said that 5G will not be rolled out until a deployment policy is concluded and approved.
<b>Qatar</b>	The 5G rollout launched in Qatar in 2018. Qatar awarded 5G frequencies in the 3.5-3.8 GHz band to Ooredoo and Vodafone Qatar in early 2019. Under the licenses, each company have rolled out 5G networks before the end of 2020. Ooredoo have announced its 5G mobile network coverage has reached more than 90% of the country's populated areas at 2.25Gbps' 5G data speeds.
<b>Saudi Arabia</b>	The CITC launched a 5G mobile network in 2019, making Saudi Arabia one of the first countries in the world to introduce the technology. The government have awarded spectrum with auctions of the 2.3 GHz, 2.6 GHz and 3.5 GHz bands completed in early 2019. As of 2020, the CITC has reported 5G has reached more than 30 cities and MNOs have access to more than 1000 MHz of licensed spectrum. Saudi Arabi delivered an average 5G download speed of 377.2 Mbps. As more than 10 GHz of frequency bands have been identified and allocated for commercial use by technologies like IMT-2020 and World Radiocommunications Conference (WRC-19) the CITC is working on releasing further spectrum for mobile broadband services.
<b>South Africa</b>	In April 2020, ICASA assigned temporary spectrum to Vodacom, MTN, Telkom, Liquid Telecom and Rain. ICASA considered applications for temporary spectrum to November 2020 in the following bands: 700MHz, 800MHz, 2.3 GHz, 2.6 GHz and 3.5 GHz. These temporary spectrum allocations were extended to March 2021. In May 2020, Vodacom launched its 5G network in three major cities in South Africa. The launch encompasses twenty live sites, with a further rollout planned to cover all of South Africa. Vodacom was temporarily given access to 50 MHz of spectrum in the 3.5 GHz spectrum as a measure taken by the South African government as part of the COVID-19 pandemic. Huawei and Rain jointly launched the first standalone 5G network in South Africa in July 2020. The 5G is currently available in Cape Town. This is the first Standalone 5G network in Africa.
<b>United Arab Emirates</b>	5G services are currently available in the UAE. Both incumbent operators, Etisalat and Du, are both deploying 5G on the 3.5 GHz frequency band. In 2018, the regulator TRA issued 100MHz to each of the two incumbent operators in the 3.3 to 3.8 GHz frequency range. In February 2019, Etisalat awarded contracts to both Huawei and Ericsson for the rollout of its 5G mobile network. <sup>128</sup> In 2020, there has been a shift in focus towards 5G as highlighted in the UAE announcing allocation of a new frequency band which will allow UAE telecom operators to further expand the application of 5G. Further, Etisalat said it will focus on rolling out its 5G NSA network for the next two years. <sup>129</sup>

Source: WPC Research, December 2020 from a range of regulator and industry sources

### 6.3 New challenges in market definition and collaborative regulation

As 5G rollout in the region gathers pace, and there is a transition from legacy 2G/3G services to 4G/5G services new competition issues will arise not only because of the need to share infrastructure but also because of the blurring of traditional market boundaries. Wireless technologies become increasingly capable and comparable to fixed line services in capability terms.

As noted above, the region is one of the most wireless-centric in the world. The need to achieve greater coverage in the region coupled with the increasing performance of wireless technologies mean that it is unlikely that fixed technologies will play a large part in the ICT landscape in the near to medium term except to support mobile backhaul transmission, and business connectivity including in the central business districts of the region's largest cities.

In the drive to achieve higher speeds and capacity, fixed wireless access (FWA), is much more likely to dominate fixed line solutions in urban and in suburban settings and perhaps in rural areas (where sub-1 GHz spectrum is available).<sup>130</sup> This type of development will require regulators to rethink existing market definitions and current assessment of which players are currently dominant or non-dominant in these new emerging markets. FWA is quickly becoming a close substitute for fixed broadband access.

<sup>128</sup> [www.commsupdate.com/articles/2018/11/19/tra-confirms-uae-5g-spectrum-allocations/](http://www.commsupdate.com/articles/2018/11/19/tra-confirms-uae-5g-spectrum-allocations/)

<sup>129</sup> [www.opensignal.com/reports/2020/11/uae/mobile-network-experience](http://www.opensignal.com/reports/2020/11/uae/mobile-network-experience)

<sup>130</sup> More remote connectivity will be provided using satellite solutions.

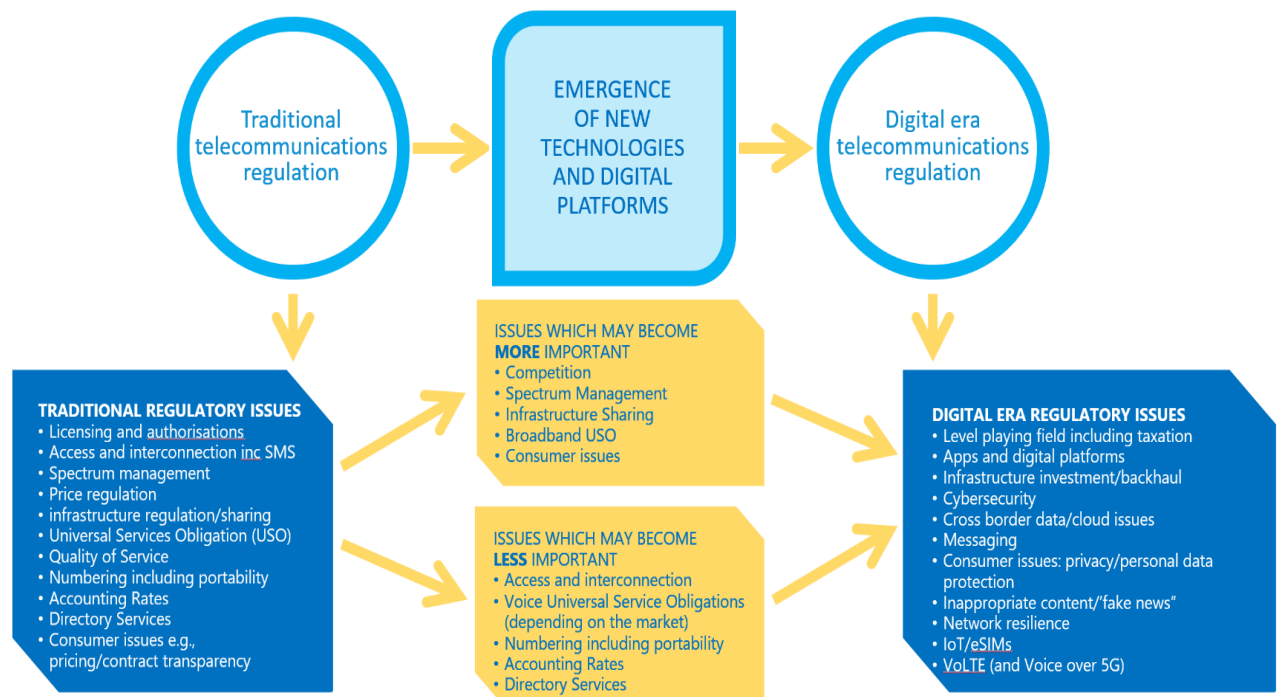
The need to drive faster and larger capacity data connectivity in the regions cities, will require 5G deployments in higher frequency bands perhaps even in the millimetre wave bands and perhaps sooner than might have been expected until recently particularly in the context of the influence of COVID-19 on the demand for services. Clearly, efficiency spectrum management and allocation will be critical to supporting rapid rollout of these new technologies. Optimising the opportunities from 4G/5G deployments also requires developing a plan for the upgrade from 2G/3G technology and the assignment of associated IMT spectrum. This process is complex and within the region there will be challenges such as the affordability of new devices for low income users. Thankfully prices for 4G/5G capable smart devices including smartphones are falling rapidly.

The significantly higher density of mobile and fixed wireless sites in mid to high band spectrum will drive and need to collaborate with municipal authorities and planning departments. Obtaining rights-of-way and accessing wireless sites including street furniture at reasonable cost without excessive delay will be critical for rapid rollout of high-speed high-capacity wireless services. Clearly this will emphasise the need for regulators across several different areas to collaborate efficiently and proactively with a shared objective to fast track infrastructure rollout.

#### 6.4 Checklist for emerging regulatory priorities

The transition from traditional ICT regulation to digital era regulation will naturally entail maintaining aspects of traditional regulatory practice but obviously will also entail entirely new regulatory concerns and approaches. From one perspective, the high level mission of regulators remains unchanged: to encourage competition, investment and innovation in the long-term interest of end users. The as the ICT industry accelerates its transition to a ‘digital everywhere’ world, however, it will be increasingly important for regulators to adopt global best practice as quickly and efficiently as possible in order to achieve the economic benefits of better ICT services and to promote broader broadband access to services for unserved or underserved groups in society. Exhibit 28 illustrates the shifting priorities that can be expected to occur as the transition to the digital world continues.

**Exhibit 28: Traditional and digital era regulatory issues**



Source: Systems Knowledge Concepts ([www.skcn.net.au](http://www.skcn.net.au))

The following section provides a checklist of regulatory issues and advice in relation to each:



### Increasing IMT spectrum availability

Migrating to 4G and eventually 5G will require significantly more IMT spectrum for operators. Previously an MNO could make do with 100-150 MHz of total spectrum but going forward MNOs will need more than 1,000 MHz in total IMT spectrum including mmWave spectrum. Regulators need to develop spectrum roadmaps to improve certainty for MNOs and increase the predictability of them to acquire IMT spectrum.

### Lower IMT spectrum pricing

With revenues unlikely to increase from uplift in service usage to new technologies (and a flow on to revenues) this means prices for spectrum per MHz and per MHz per population must fall in order to allow MNOs to substantially increase their spectrum holdings.

### Ensuring technology neutrality

Important to allow for flexible use of spectrum to optimize for demand rather than restricting its use to specific technologies.

### Facilitate infrastructure sharing

Investments in networks will benefit from increased sharing, which will require the development of adequate wholesale markets for inter-operator transactions and necessary regulation (access, price, SMP regulation, etc.) where risks of bottlenecks persist.

### Liberalise licensing regimes

More players in the market will drive investment and competition for the benefit of operators and consumers alike. Regulators should open up licensing regimes for towercos and fibercos to help drive additional investments including transmission services, active antennas systems and inbuilding services.

### Reduce red tape to facilitate deployment

Many markets are extensive by extensive restrictions on rights of way and other bureaucratic processes slowing down deployment of infrastructure.

### Phase out legacy technologies

Operating parallel technologies represents significant recurrent costs for the operators and the sooner one or more legacy 2G and/or 3G networks can be switched off and their spectrum reused the better. This of course depends on the overall ecosystem and the readiness of the individual country market and consumers. There should also be flexibility especially during transition for MNOs to provide a different mix of technologies in urban areas compared with rural areas – for example, an MNO which may have 2 x 15 MHz of 2100 MHz spectrum nationally is able to utilise say, 2 x 10 MHz for 4G/LTE in urban areas with 2 x 5 MHz for 3G while the situation may be reserved in rural areas.

In essence, the success factors for successful regulation in the future will not be that different from the past but with more rapidly changing technologies and new use cases it will arguably be even more important not to fall behind.

### M2M and IoT

Traditionally subscribers have been persons whereas going forward M2M and IoT connections will exceed the number of traditional subscriptions. Regulatory frameworks will need to cater for the different types of connections and facilitate those connections by supporting eSIMs etc.

### Product and price regulation

There is likely to be a continuous need for SMP style regulation to prevent anti-competitive behaviour among telecom operators but the market should be more narrowly defined as data connectivity only and regulators should increasingly acknowledge, that communications is a different market.

### Facilitating smart devices

In a situation with legacy technologies operating in parallel uptake of more advanced devices and smartphones may be a barrier to migration. Regulators should lower barriers and costs for consumers to switch to more advanced and capable devices which provide broadband data connectivity.

### Regulation of OTTs

OTTs are mostly international players avoiding domestic regulation and it has proved to be difficult to develop frameworks which put OTTs under domestic laws and regulations. This is a situation which is likely to persist for the foreseeable future, and Regulators should rather focus on a level playing field between domestic and international players as well as traditional services and OTTs at a lower level rather than maintaining regulation of traditional telecom operators putting them at a disadvantage.

### Retail price regulation

Traditionally voice services in many markets have been regulated on price and subject to consumption or goods and services taxation. With communication services increasingly taking place over data connections such regulation is outdated and will put domestic operators at a disadvantage. Differentiation in the regulation imposed between OTTs and traditional voice/text services supplied by domestic MNOs should be minimised.

### Legal Interception

Traditionally telecom operators have been subject to legal intercept regulations in various forms for Governments to monitor electronic communication. With communication taking place over OTT applications this becomes increasingly difficult.

### Net neutrality

Net Neutrality in its strictest sense suggests all types of customer usage to be treated equally. While there is merit in regulation ensuring that large content providers do not monopolize network capacity, regulators at the same time need to give network operators sufficient flexibility in managing network traffic for the benefit of all consumers.

### Quality of service

Transitioning to a wireless and IP world, necessitates a review of legacy quality of service rules to reflect the different services being offered and technologies being deployed to provide services

### International vs. domestic players

While network providers delivering data connectivity will remain domestic, the space for communication and content will increasingly be global, and that will have impact on the level of regulatory control.

### Competition Law

In many markets, competition law is integrated with telecom legislation. This may make sense for the network / connectivity markets going forward, but the communication / content space will increasingly be dominated by players which not necessarily fall under the telecom legislation and which regardless have no domestic presence. Regulators will need to think through reform to legislation in this area and arguably strengthen general competition law at the expense of more sector specific regulation in this area.

### Mergers and acquisitions

Given (i) the pressure on MNO margins from the adverse economic impacts and the increase in customer demand/usage from COVID-19, and (ii) the need for additional investment in the network to acquire IMT spectrum and offer new 5G services, industry consolidation may be an attractive option to MNOs in many Arab African markets. Sector regulators need to be careful that such pressures do result in duopolies or other industry structures which do not encourage sector competition.



#### Cross border data flows

Given the growing importance of cloud services, flexibility should be provided by national regulators to permit the transferring of data across borders subject to certain safeguards. Arab Africa government should minimise restrictions on such data, including the imposition of requirements to localise (store) data.

#### New business models and partnerships

In many markets, there are strict limitations on what kind of activities as telecom operators as licensed players can engage in, often putting telecom operators at a disadvantage in competition with non-licensed OTTs. Regulators should rethink traditional limitations and broaden the scope for the type of services which telecom operators can provide to their customers including mobile money etc.

## 7 CONCLUSIONS AND RECOMMENDATIONS

### 7.1 The key issues for regulators in the Arab and Africa regions

Given the preceding discussion, this section summarises the regulatory issues in the Arab and Africa regions and offers a set of recommendations for consideration by the regions' regulators. It should be emphasised that these issues are a combination of those that are common to all regulatory jurisdictions at this time as well as a set of issues that are more distinctive of the Arab and Africa regions specifically. They are issues which are, to some extent, distinctive of emerging economies.

The fundamental question is how do regulatory practices need to change in the context of the factors discussed above: changing technologies, the rise of digital platforms and the traditional and emerging characteristics of the region's nations? We initially present a set of questions for consideration which lead to the recommendations below.

1. How can regulators establish a more flexible spectrum management environment including opportunities for spectrum trading and spectrum sharing while at the same time encouraging competitive behaviour among operators? How do regulators ensure that large contiguous blocks of mobile spectrum are made available to operators in order to support broadband competition?
2. What is the best way to handle and progress the need to change 'regulatory scope' so that effective regulation over issues such as misleading content, data protection, cross border data flows, and responsiveness to cultural sensitivities in relation to content published on digital platforms? For example, should traditional ICT regulators have their briefs expanded to include such considerations or is the best model one of collaboration within Government across a number of specialist regulators?
3. What is the best way to establish technologically neutral regulation across all aspects of the regulatory landscape including spectrum allocation and management, licensing, USOs etc.
4. How does the scope of universal services and the use of USFs need to change to reflect the new reality of 'digital data everywhere' and the declining importance of traditional voice calling? What are the appropriate parameters for each jurisdiction of a new 'digital data USO'?
5. With the move to bundled service offerings where data connectivity also includes voice and SMS/texting how is the best way to remove legacy restrictions/rigidities in retail price regulation?
6. How can regulators in each jurisdiction facilitate more efficient granting of rights of way and access to sites for all mobile infrastructure but especially for infrastructure for small cells and street furniture in urban and suburban areas?
7. How can traditional NRAs collaborate to promote progress in a range of critical areas related to their core mission including: digital identity, digital money and financial services, the development of better government institutions for the protection of personal data etc?
8. Learning from the COVID-19 experience, how can NRAs assist governments to develop systems that facilitate contact tracing in order to better manage any future pandemic outbreaks?
9. How do the region's regulators define broadband markets? Are there separate markets for fixed and wireless/mobile services? Are high speed 4G/5G services characterised as complementary or substitutes to optical fibre services? Are prices, monthly download limits or bandwidth in Mbps the key for such a characterisation?
10. How can regulators expand types of stakeholders whose interests they explicitly consider? For example, larger enterprises will likely require access to 5G spectrum for their own internal enterprise operations. How can these types of innovations be efficiently progressed?

## 7.2 Recommendations<sup>131</sup>

- RECOMMENDATION 1:** Prioritise the development of best practice in spectrum management emphasising spectrum trading and sharing while supporting and facilitating operator competition. Emphasise spectrum management to make available large contiguous blocks of IMT spectrum in order to encourage provision of high-performance wireless broadband services utilising 4G and 5G technology. Encourage technology neutrality in all aspects of spectrum management.
- RECOMMENDATION 2:** NRAs should seek collaboration with central government and other relevant agencies to develop shared approaches to misinformation, personal data protection, cross border data/information flows and responsiveness to cultural sensitivities in relation to content published on digital platforms. These issues may be addressed via ongoing multi-regulator collaborations, assignment of particular responsibilities to existing regulators and/or establishment of new specialist agencies.
- RECOMMENDATION 3:** Consider the need to revise existing market definitions in relation to broadband services in particular the extent to which wireless and fixed broadband markets are converging and implications for ongoing regulation of broadband markets. Critical to that is to encompass fixed wireless access (FWA) given the growth in deployments.
- RECOMMENDATION 4:** Reconsider and redefine the nature and scope of USO and USF policies to reflect the declining importance of traditional voice calling and the growing importance of all services delivered via wireless broadband and the associated need to reframe policy setting to include funding of digital infrastructure (public and private) and digital skills development.
- RECOMMENDATION 5:** Consider new policies and legislation that will encourage investment in and the more rapid and lower cost rollout of new wireless services particularly granting of rights of way for backhaul and tower sites and policies to share wireless and other digital infrastructure.
- RECOMMENDATION 6:** Explore new ways of funding national network infrastructure, including partnership models in which digital platforms share the cost of national ICT infrastructure, as is already happening in some parts of the region. Seek to reward those willing to invest in digital infrastructure and avoid burdening the ICT sector with excessive licence fees and sector-specific taxes that restrict convergence, distort competition and hinder economic development.

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<sup>131</sup> See also the ITU GSR Best Practice Guidelines (<https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/bestpractices.aspx>)

**RECOMMENDATION 7:** Seek proactive roles for NRAs to encourage the development of a range of ‘digital initiatives’ including digital identity, digital money and financial services. Policy and regulation-making should be flexible – continually improving, refining, and adjusting regulatory practices and institutions for the protection of personal data.

**RECOMMENDATION 8:** Those countries that have not yet joined the BEPS framework should consider doing so, primarily because a unified approach is required to address the complex issue of taxation of digitalised services. Further, ahead of the finalisation of a global consensus on the optimal form of digital services tax that ought to be adopted, Arab African countries should, depending on their local market circumstances, consider imposing a tax on foreign digital services is by imposing a VAT/GST or alternatively follow the example of Kenya, Nigeria and Zimbabwe and implement a DST. However, given possible adverse trade consequences that could arise from imposing the tax, so this should be weighed up. Consideration should be given to the likely amount of revenue a DST would generate, both now and in the future as the consumption of digital services grows.

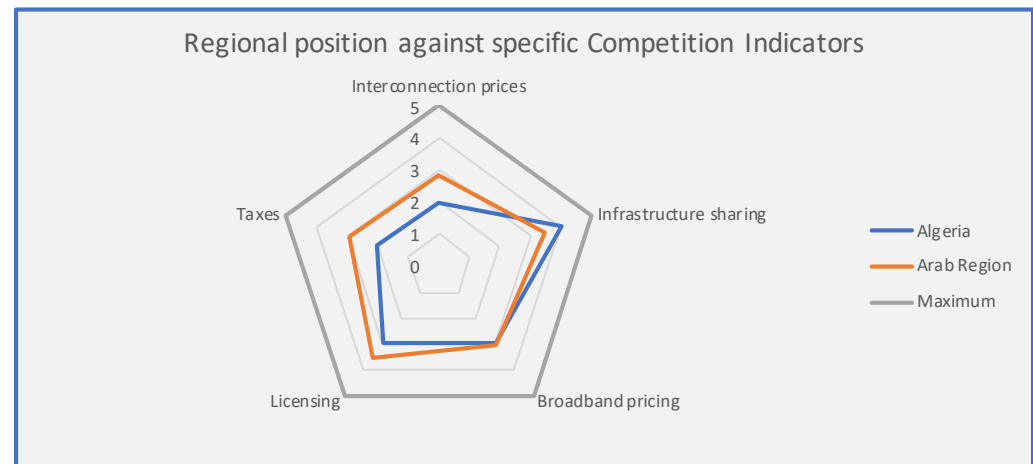
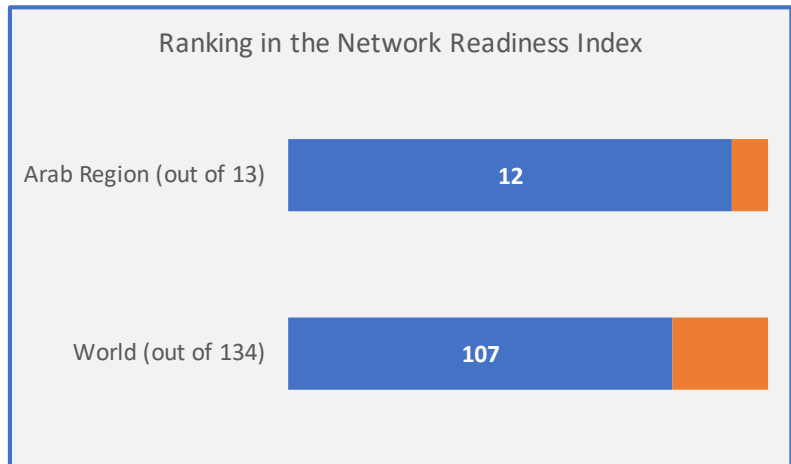
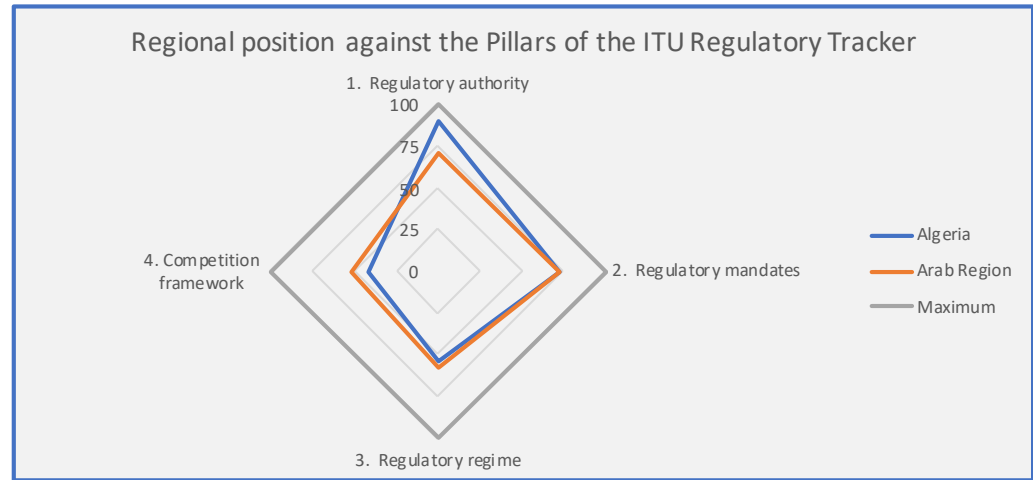
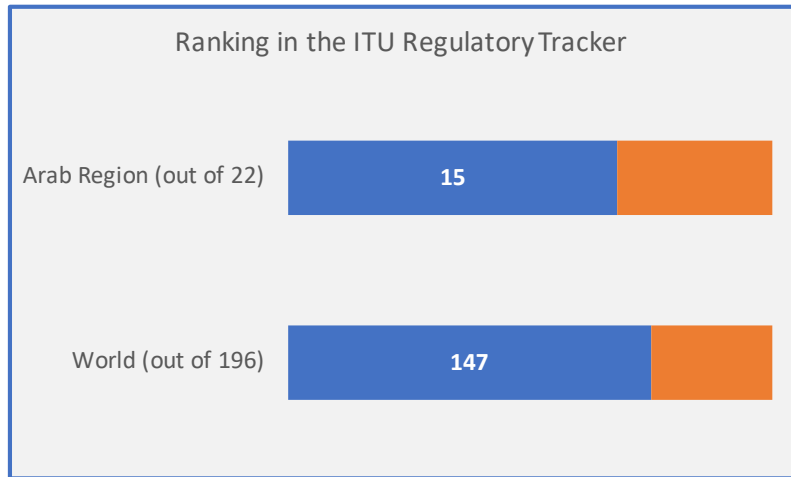
## APPENDIX A: BENCHMARK OF ICT REGULATION IN THE ARAB REGION

This Appendix presents the results of the benchmark of competition policy and regulation for the Arab Region, comprising the following countries:

Algeria	Lebanon	Somalia
Bahrain	Libya	Sudan
Comoros	Mauritania	Syrian Arab Republic
Djibouti	Morocco	Tunisia
Egypt	Oman	United Arab Emirates
Iraq	Palestine	Yemen
Jordan	Qatar	
Kuwait	Saudi Arabia	

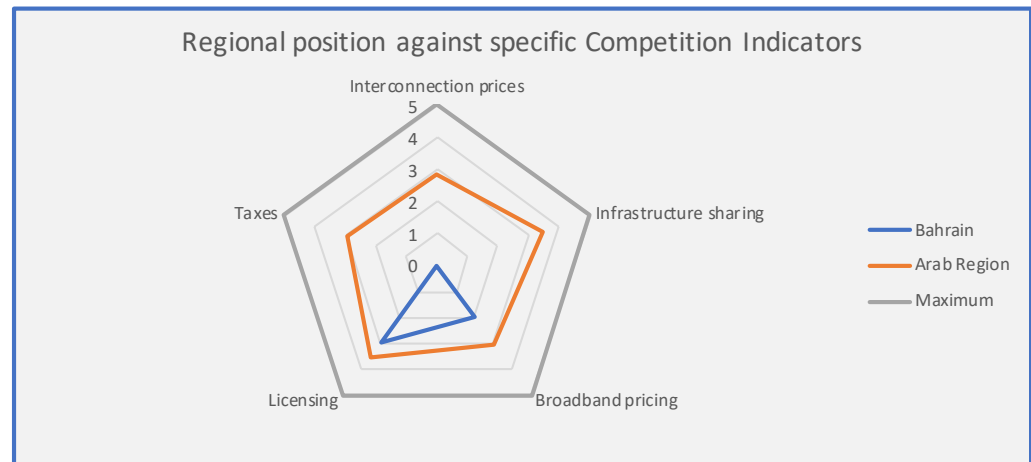
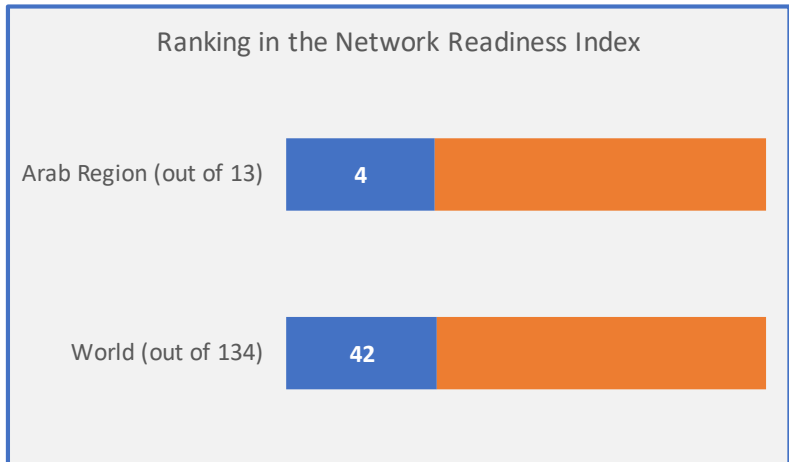
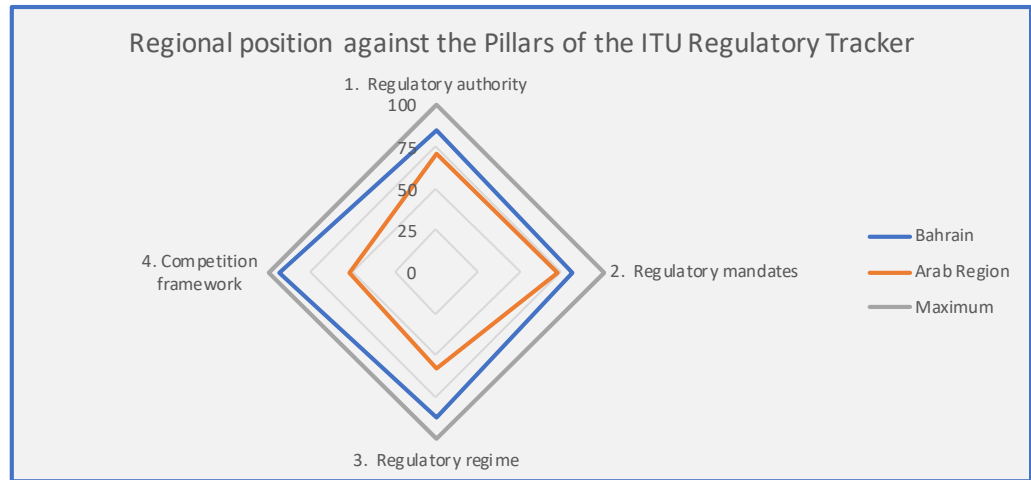
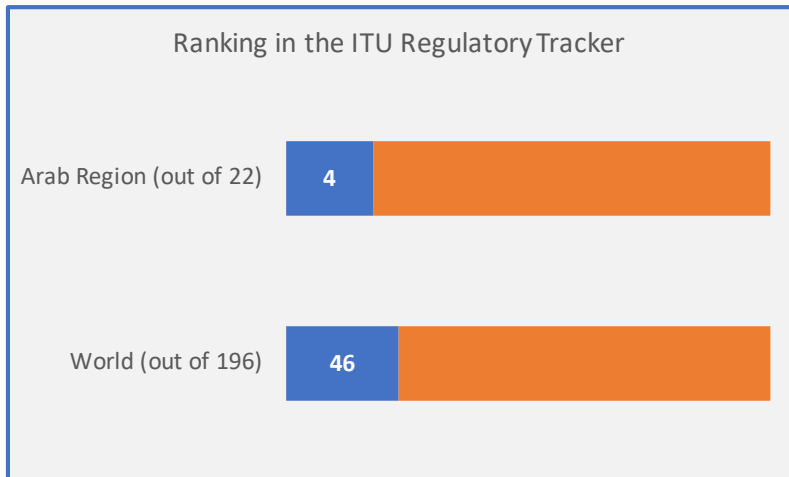
The benchmarking methodology and data sources are explained in Chapter 3 of this report.

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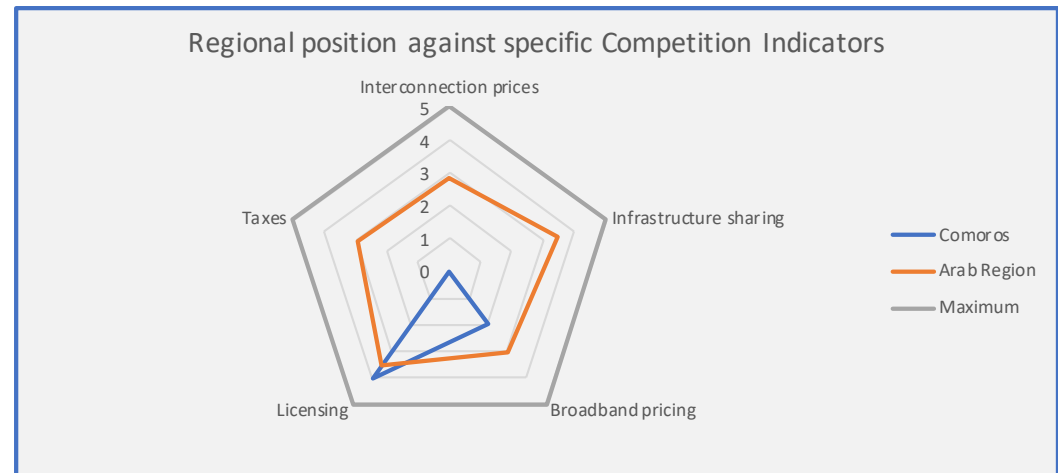
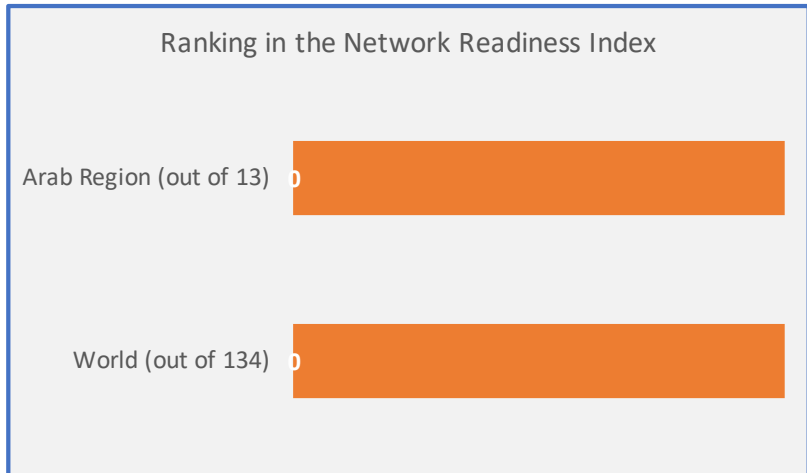
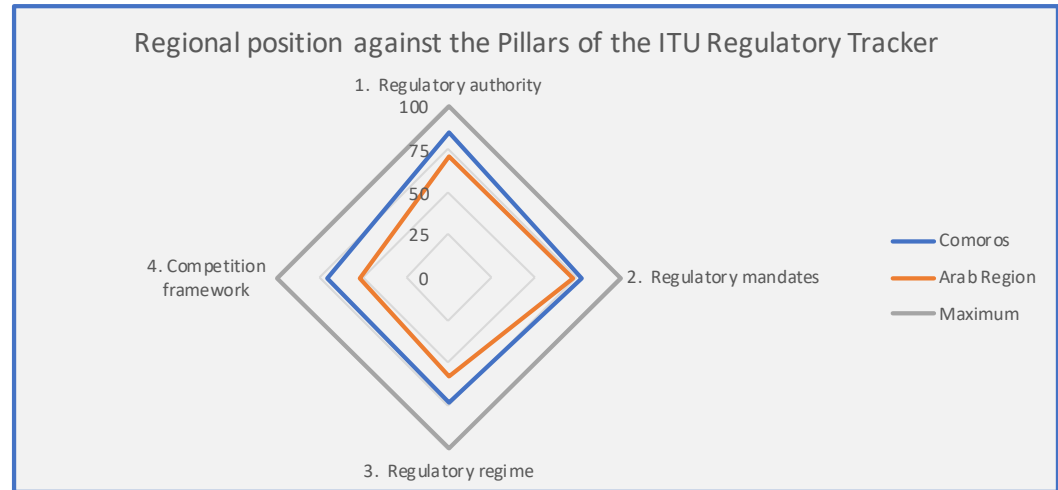
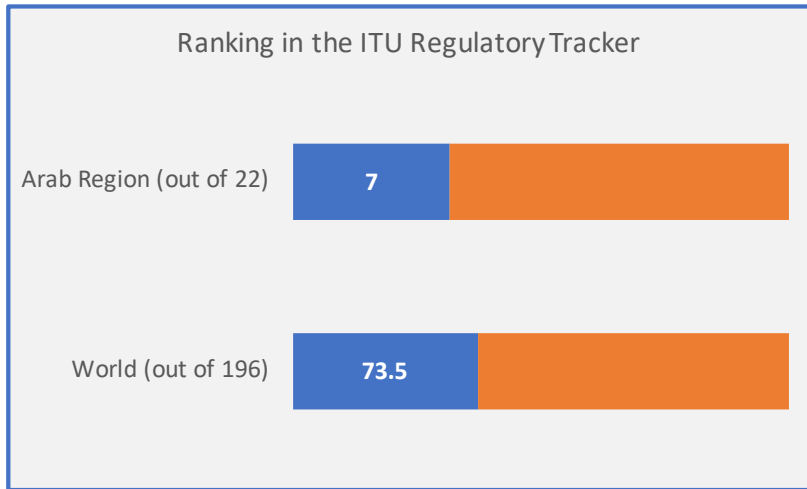




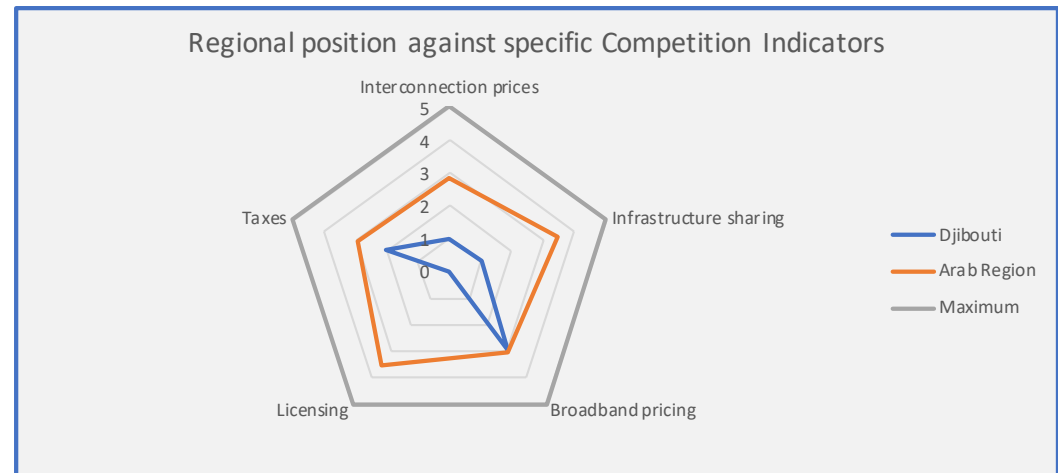
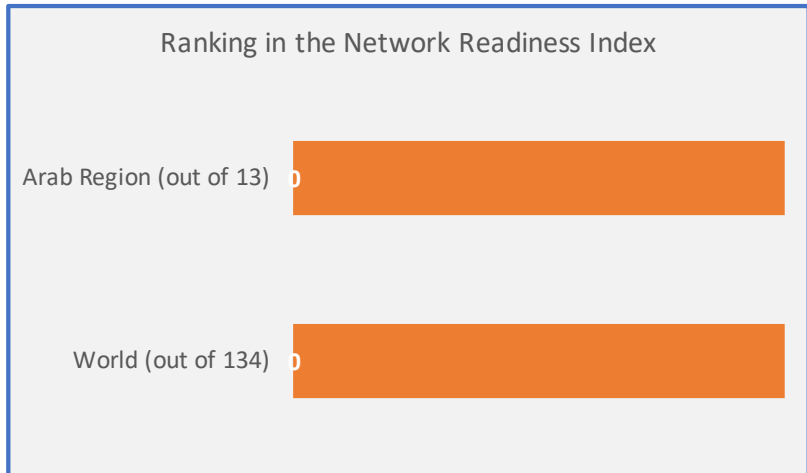
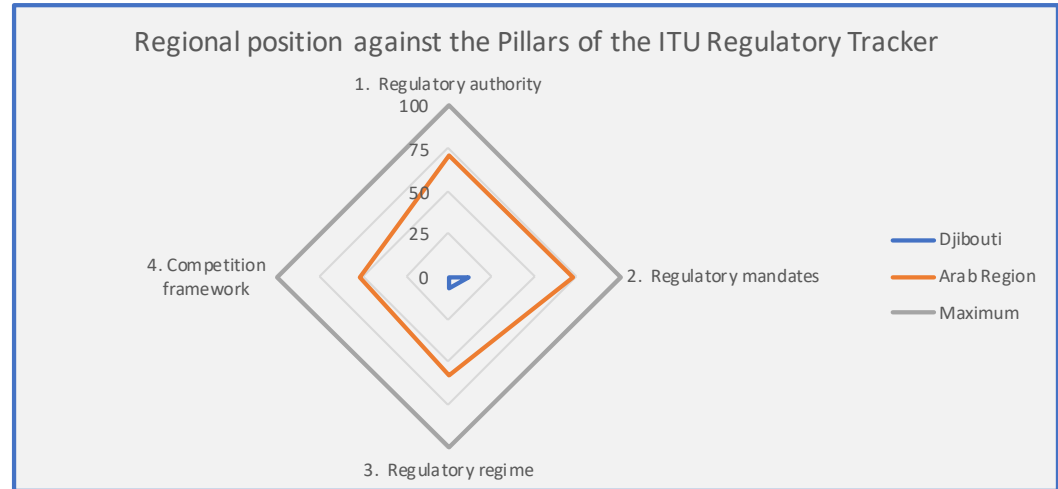
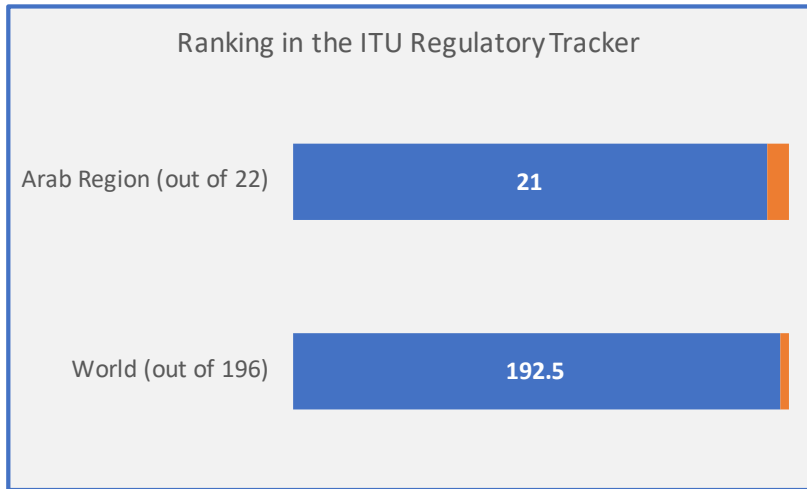
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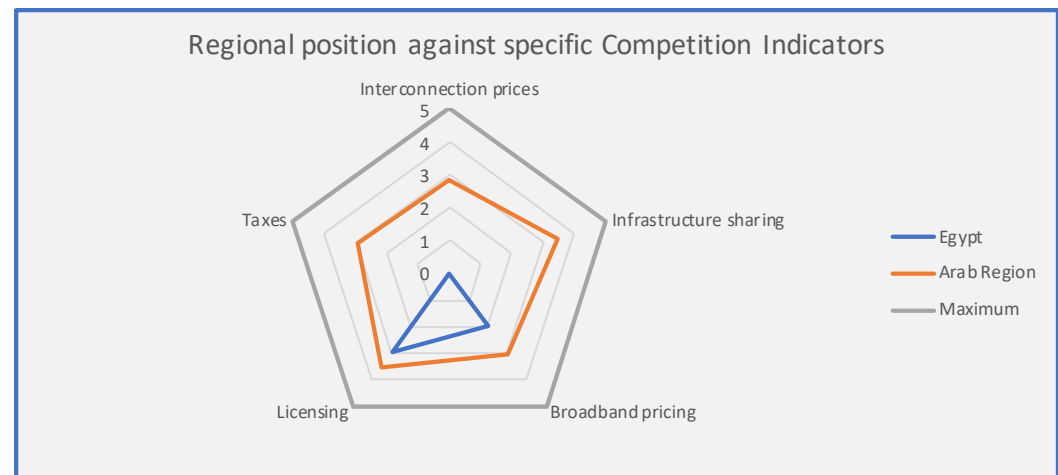
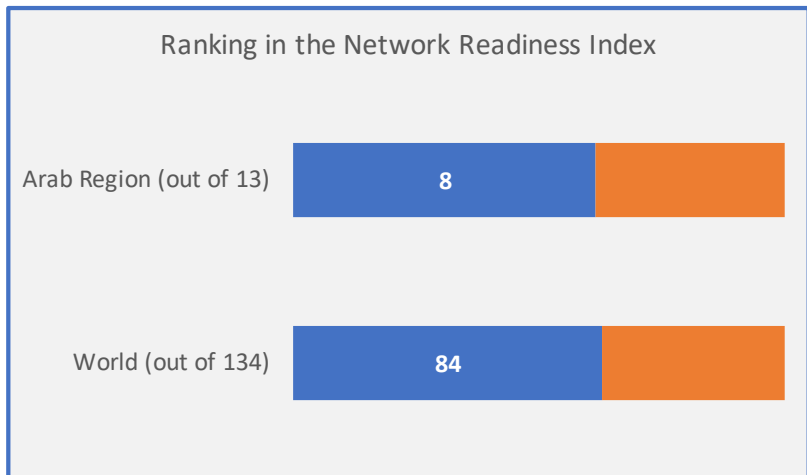
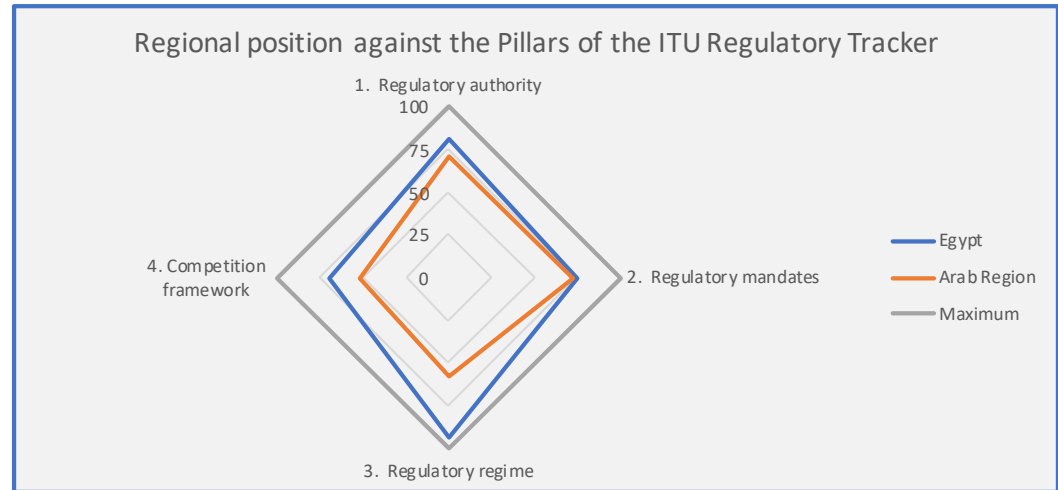
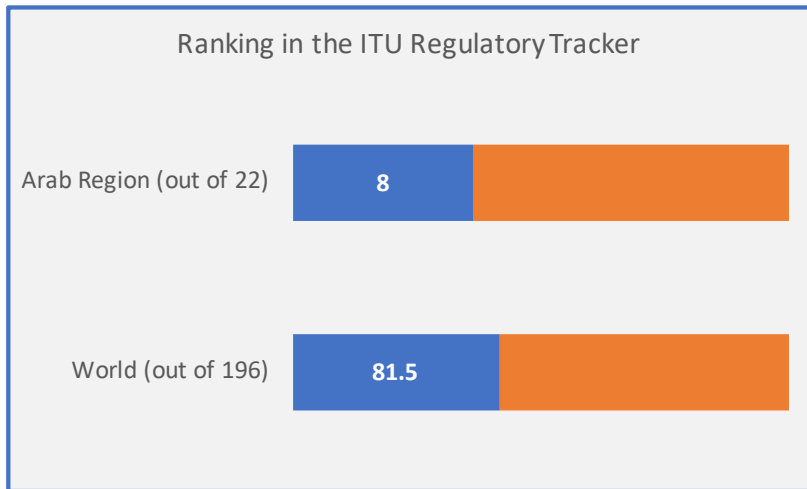
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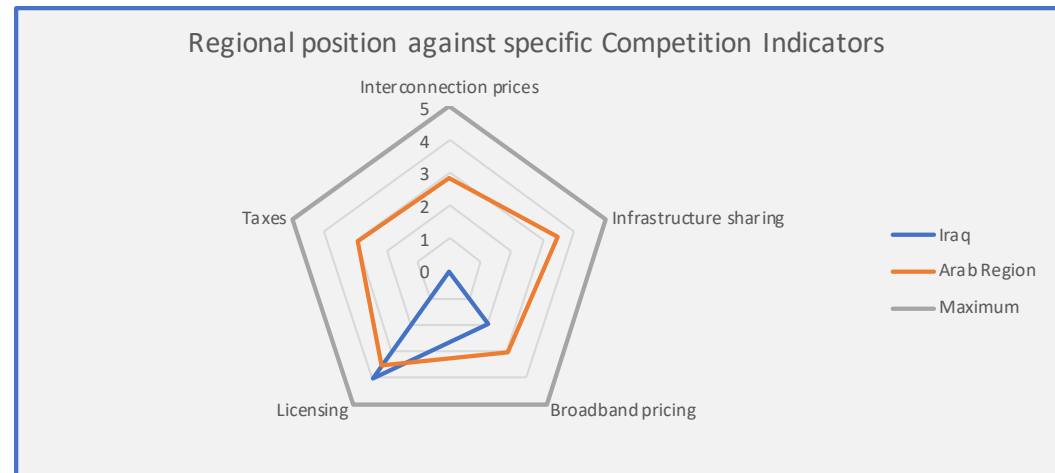
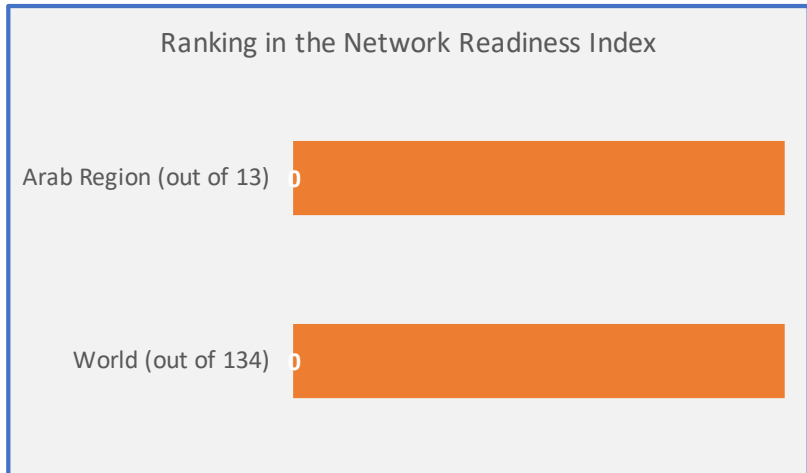
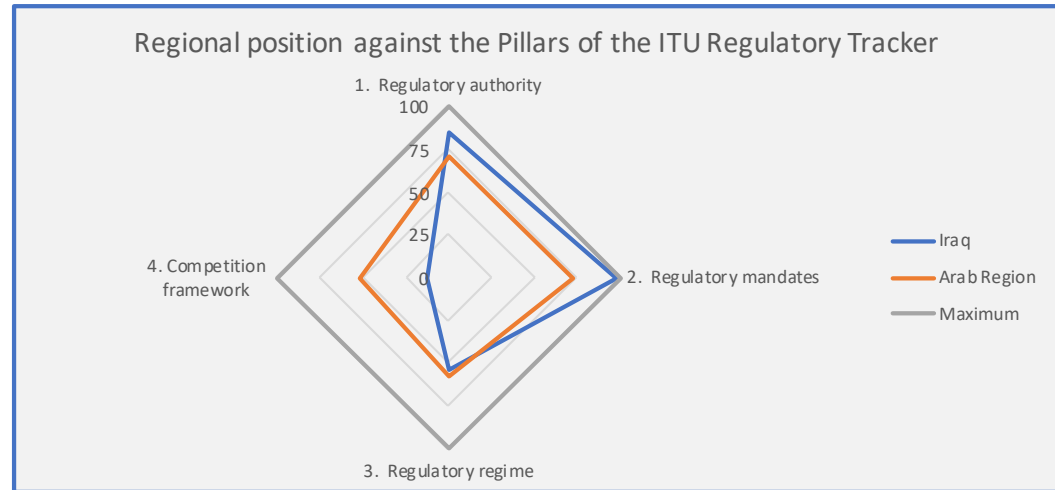
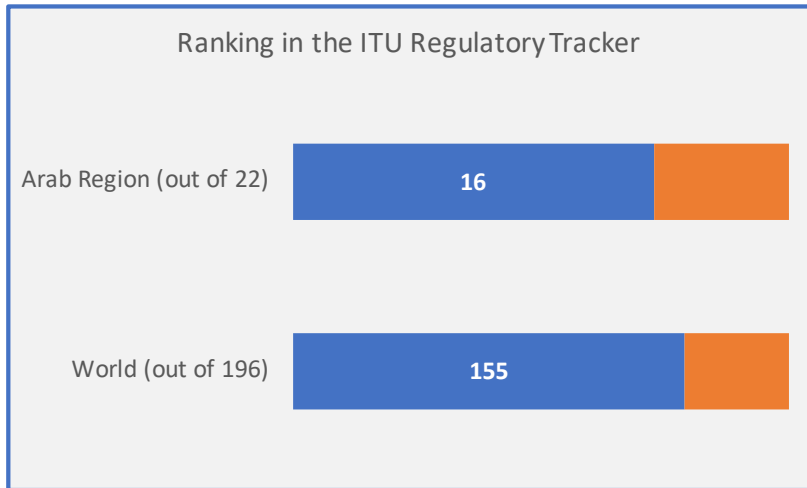
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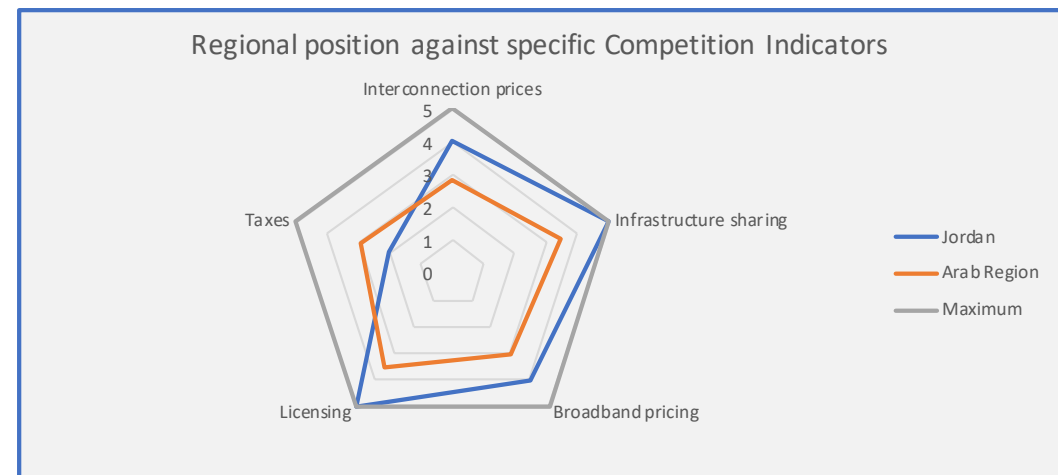
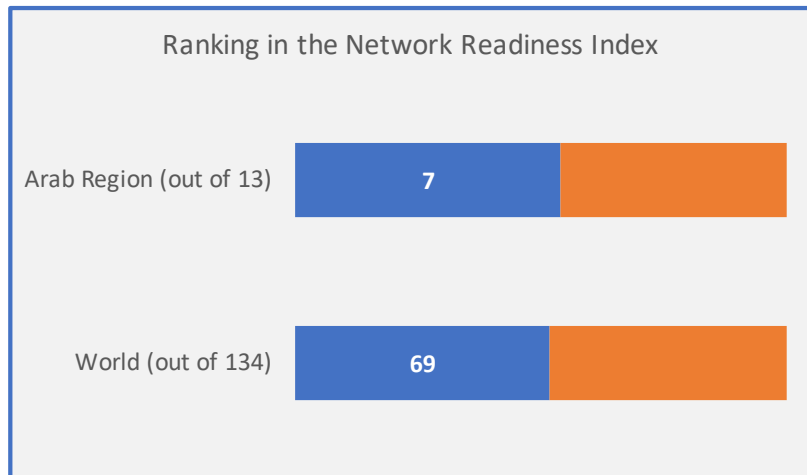
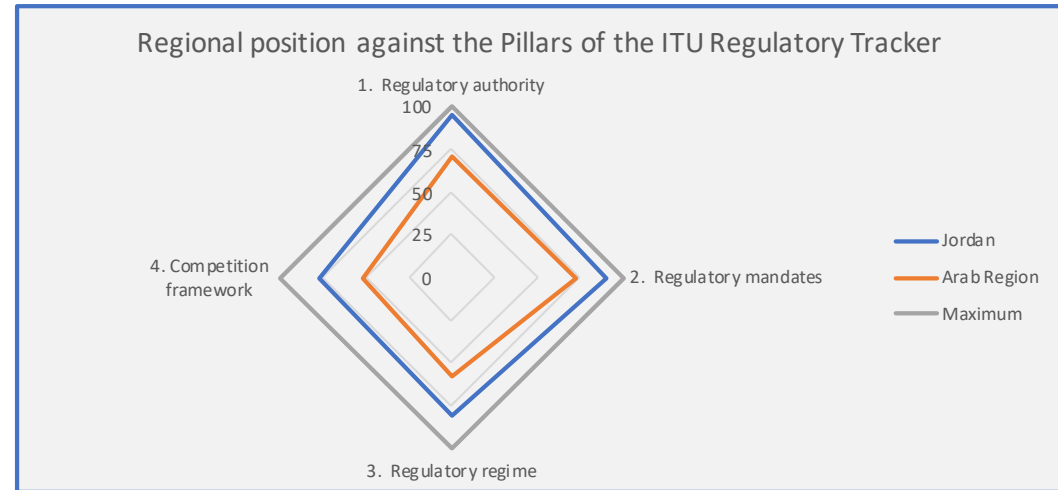
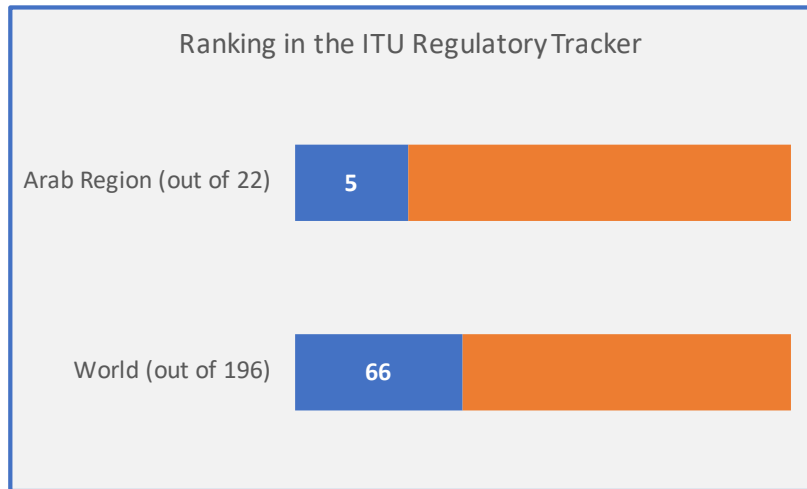
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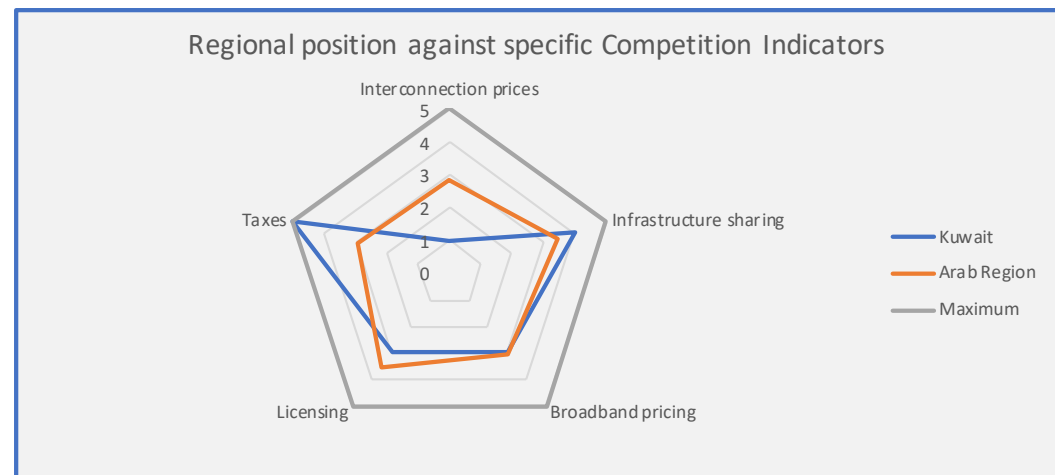
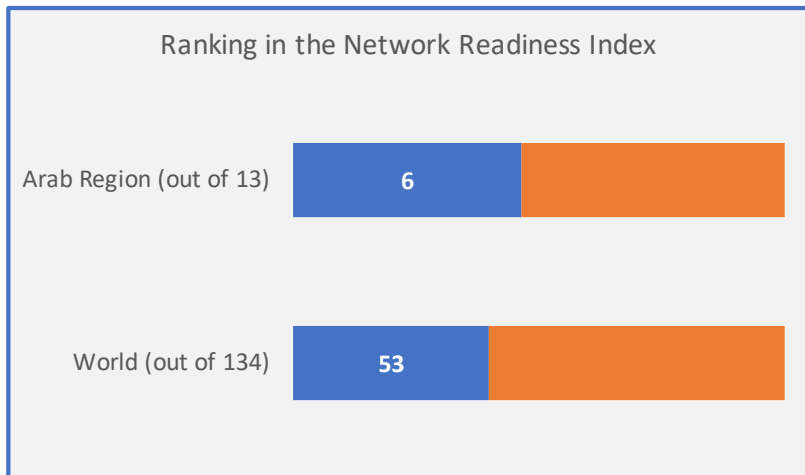
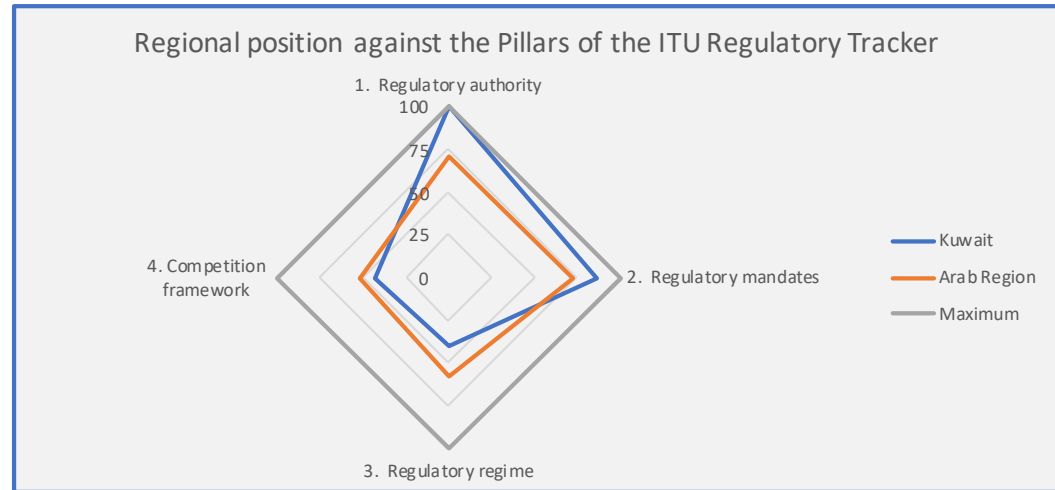
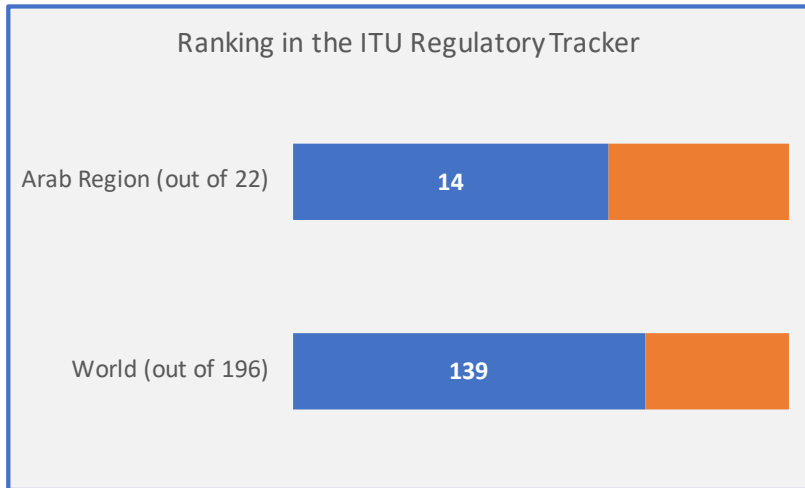


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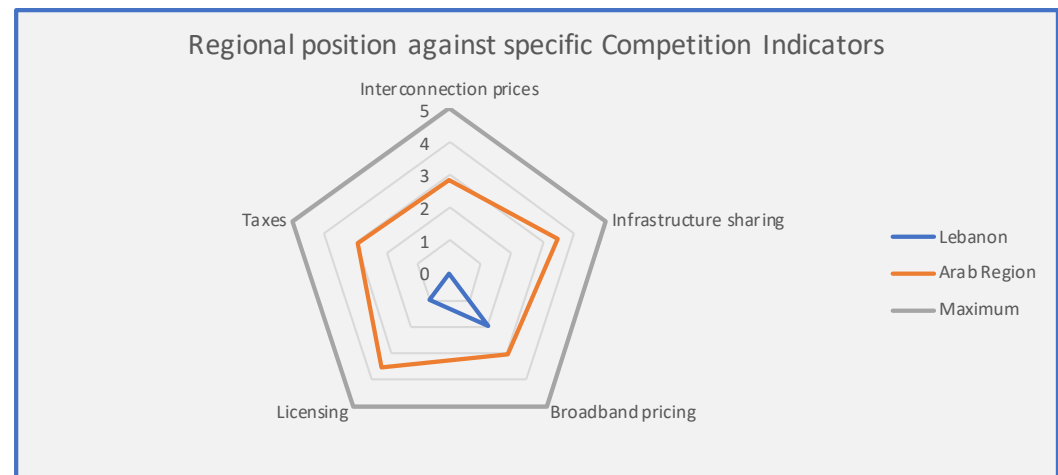
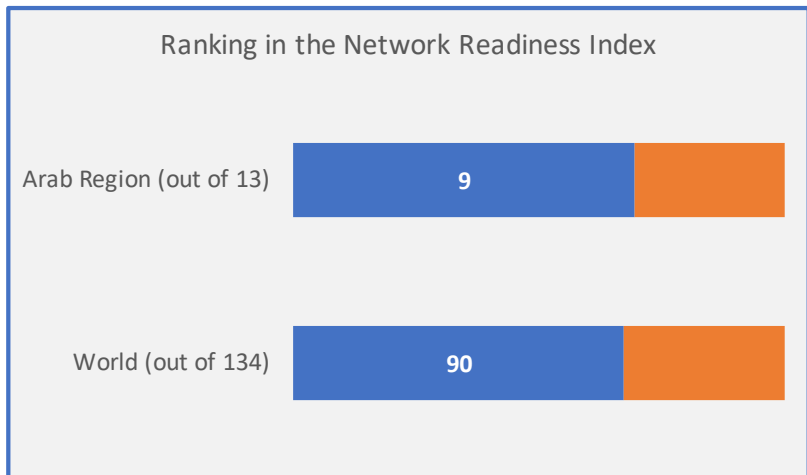
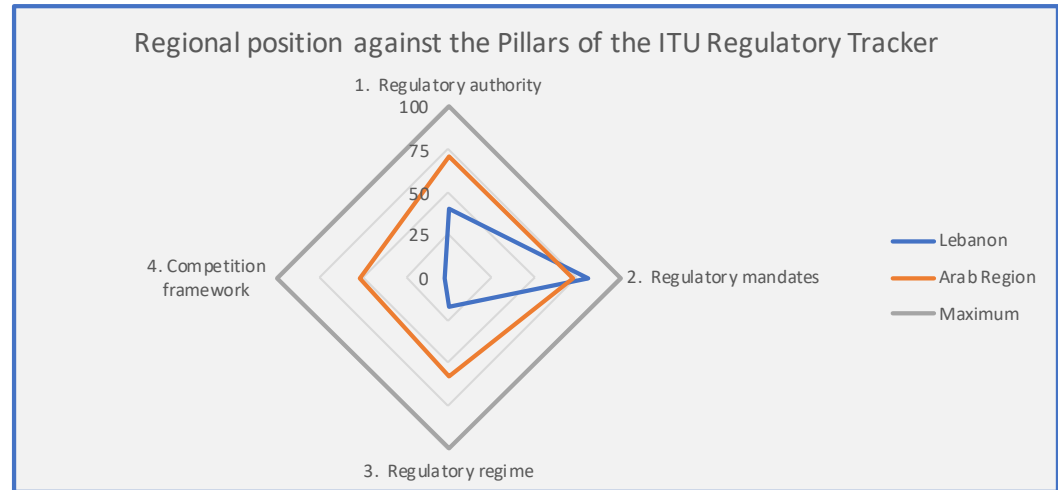
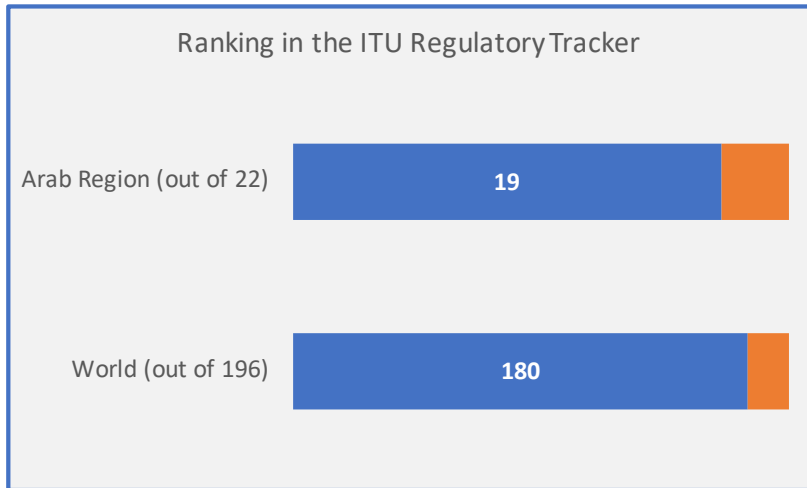




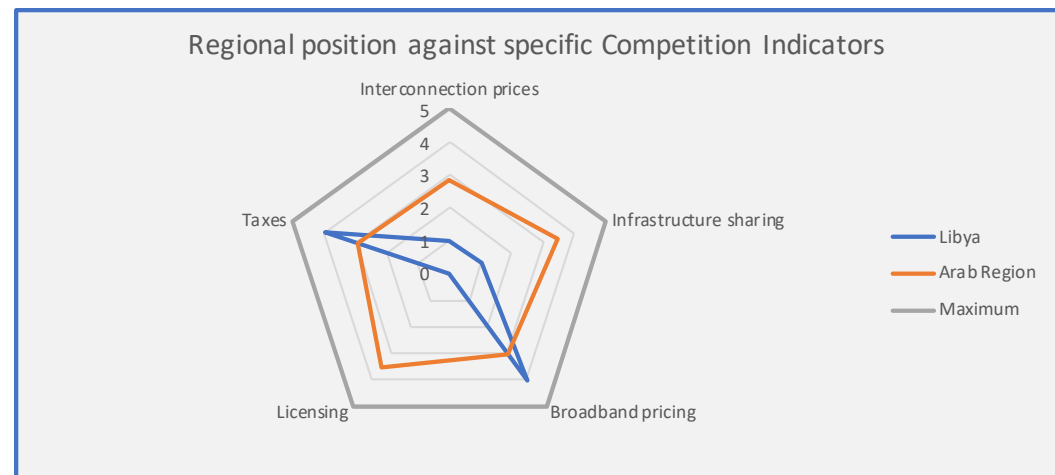
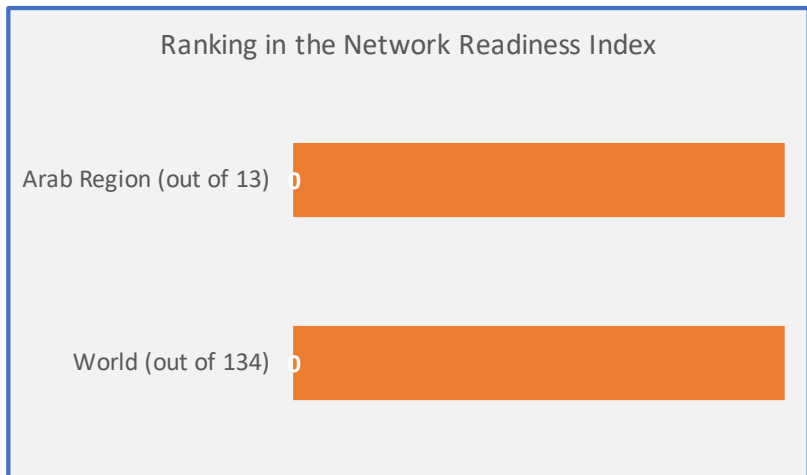
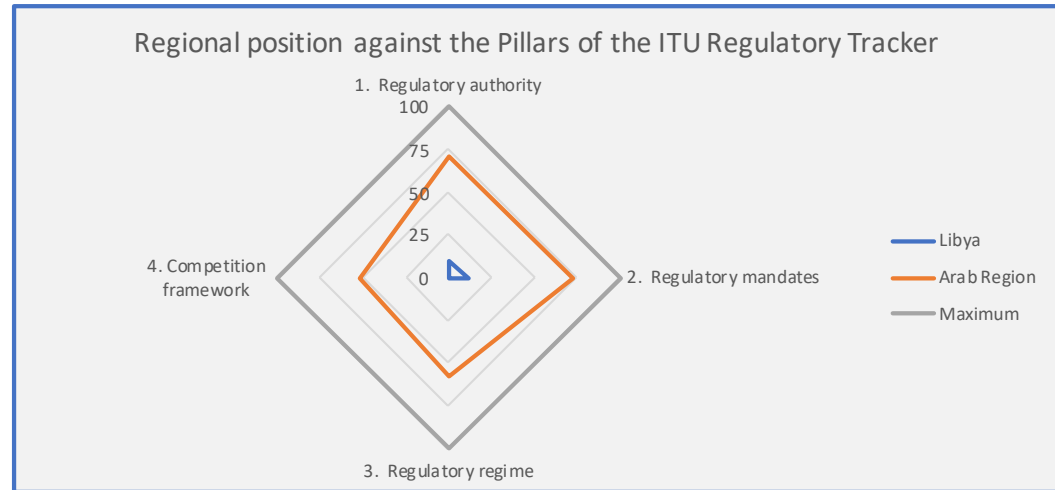
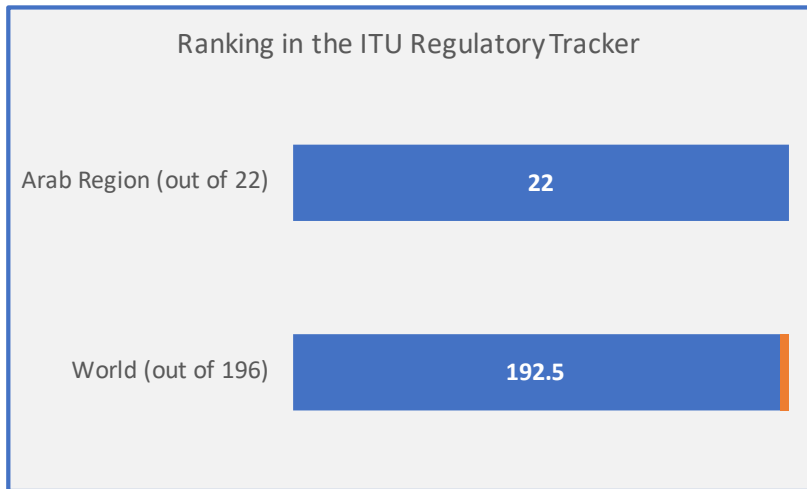
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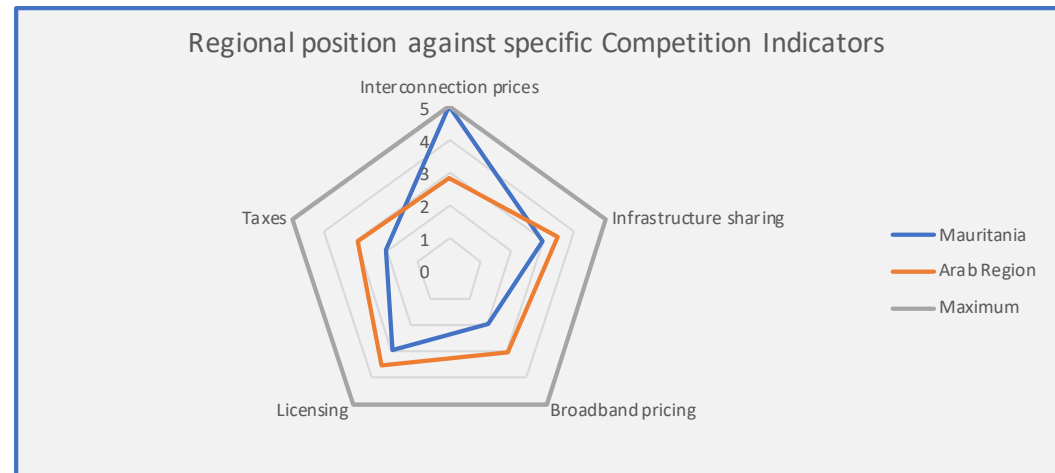
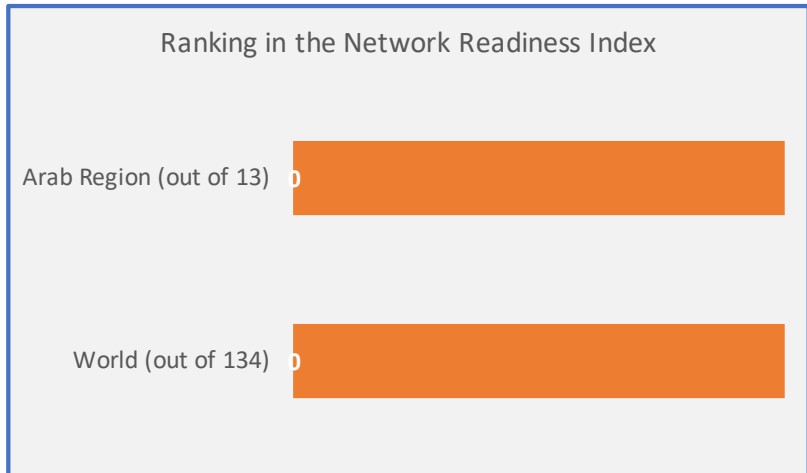
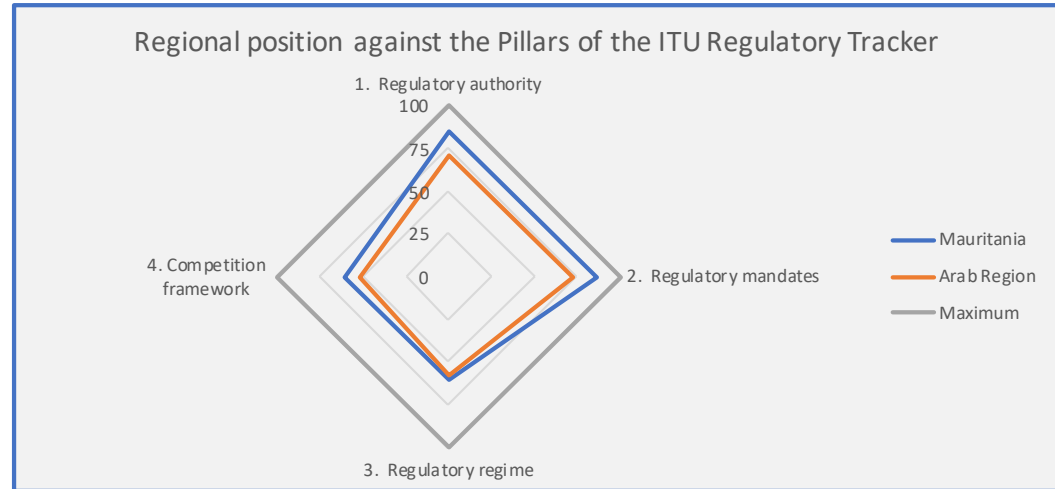
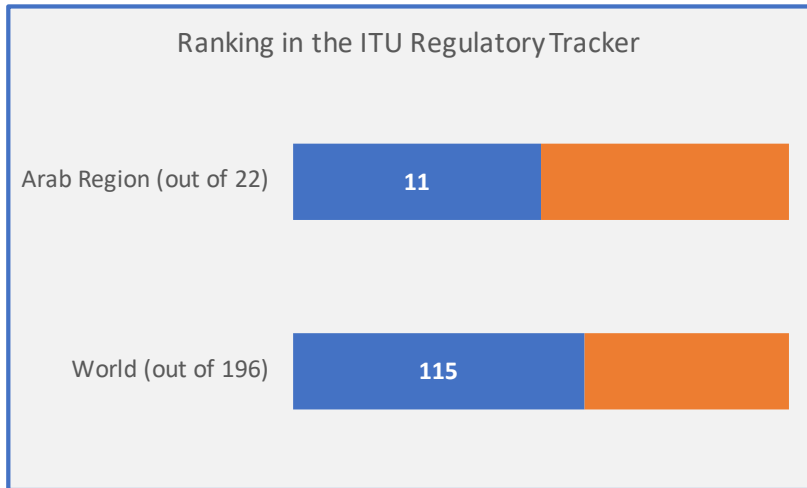
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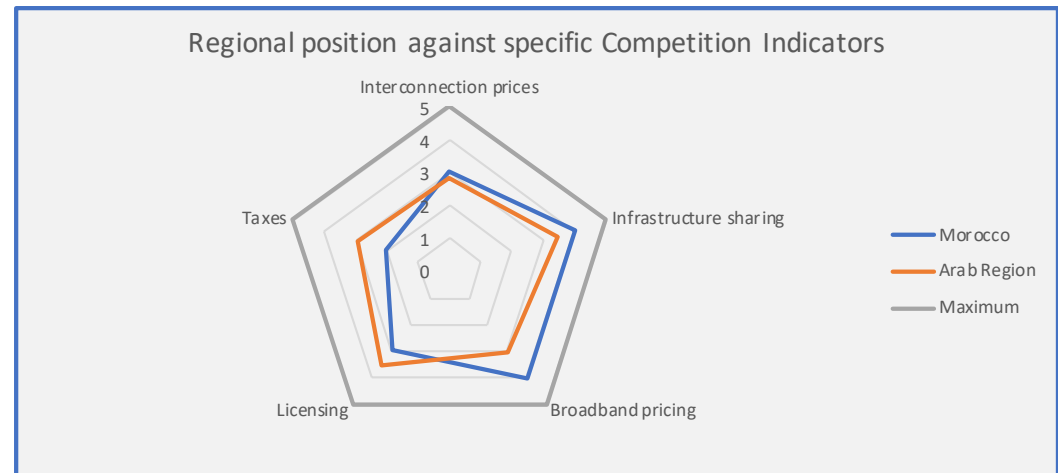
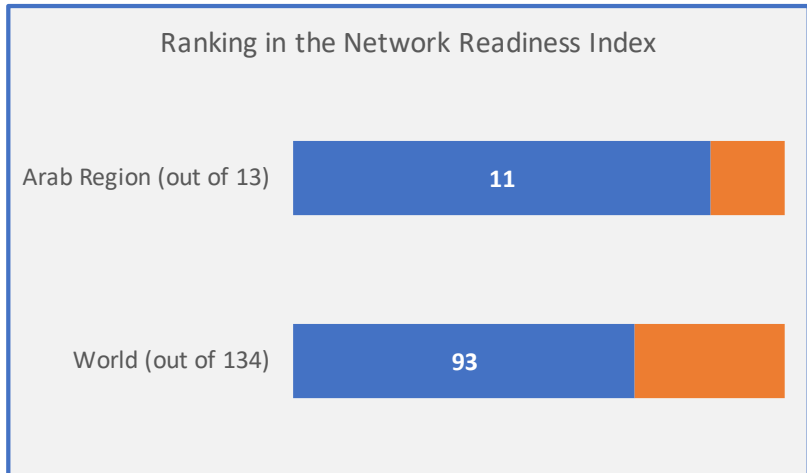
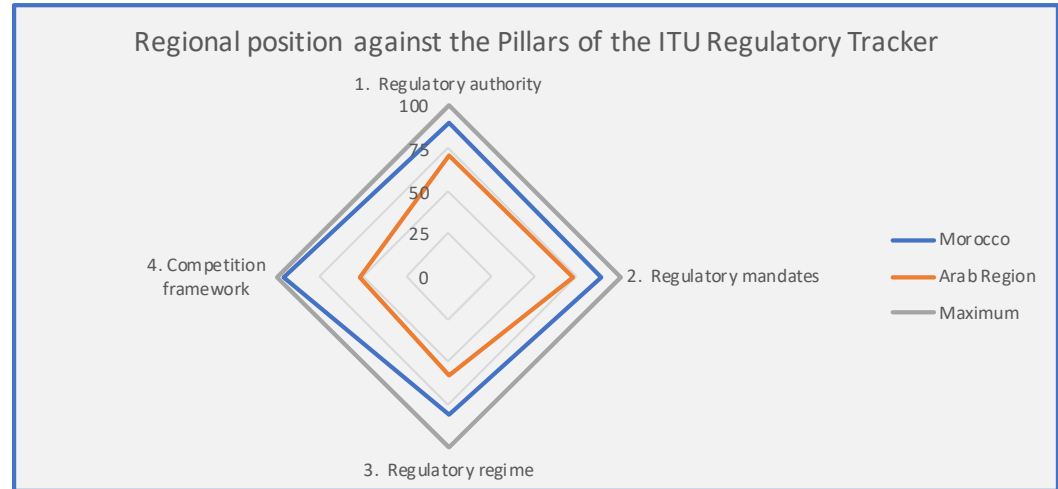
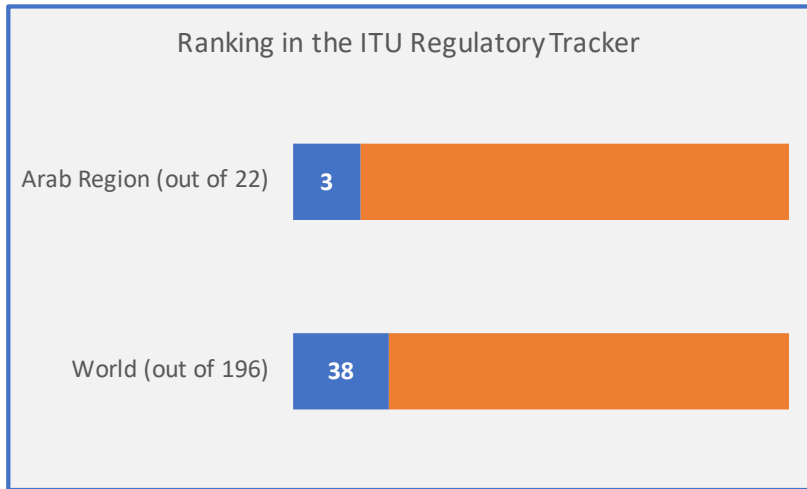
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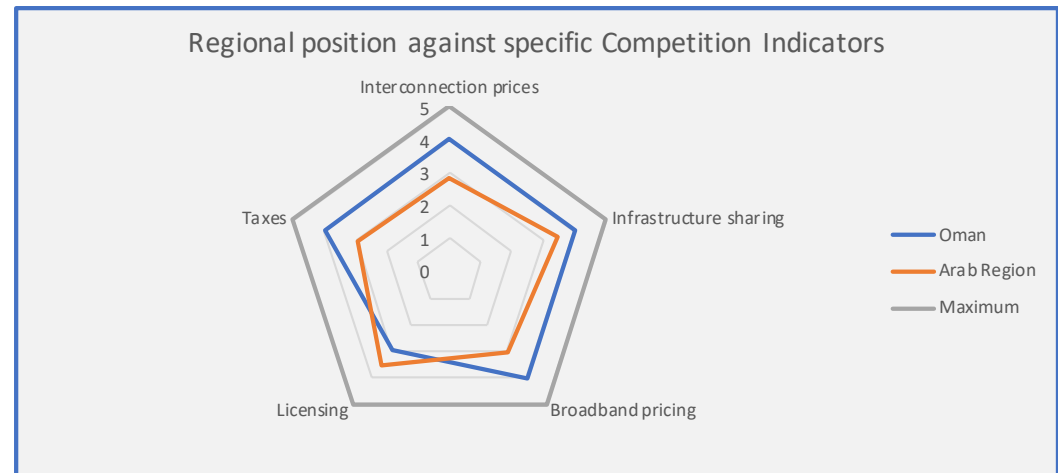
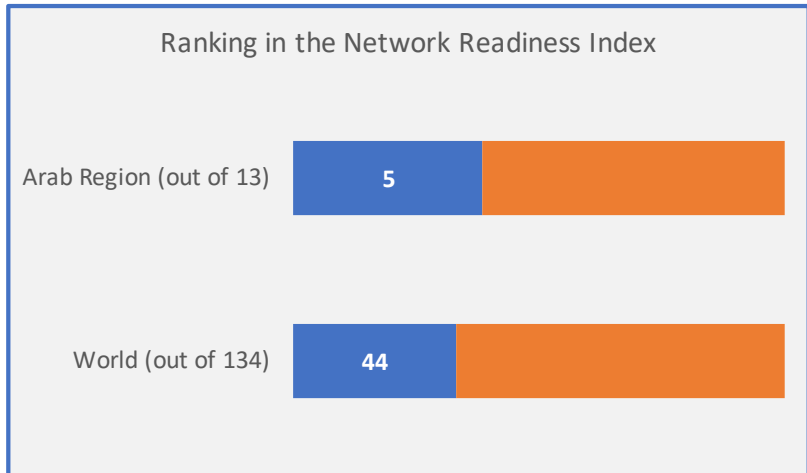
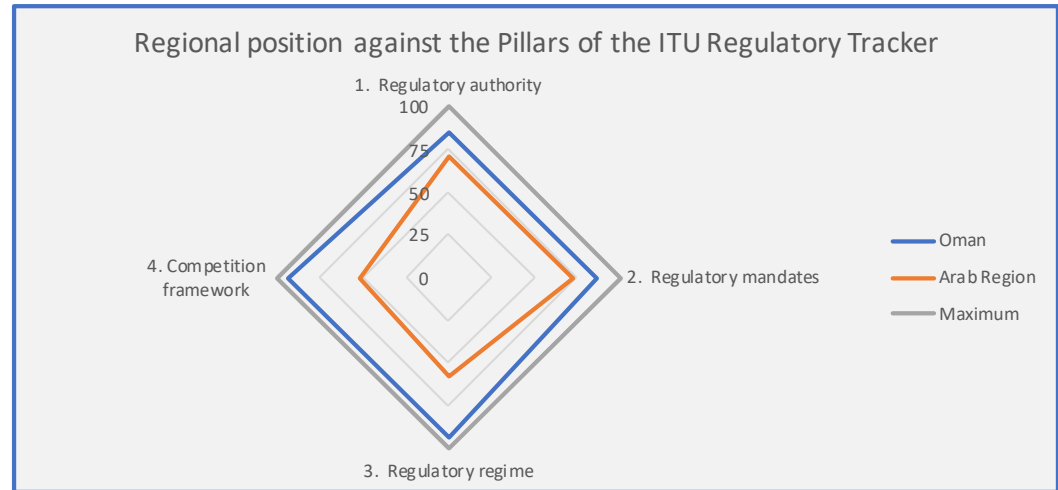
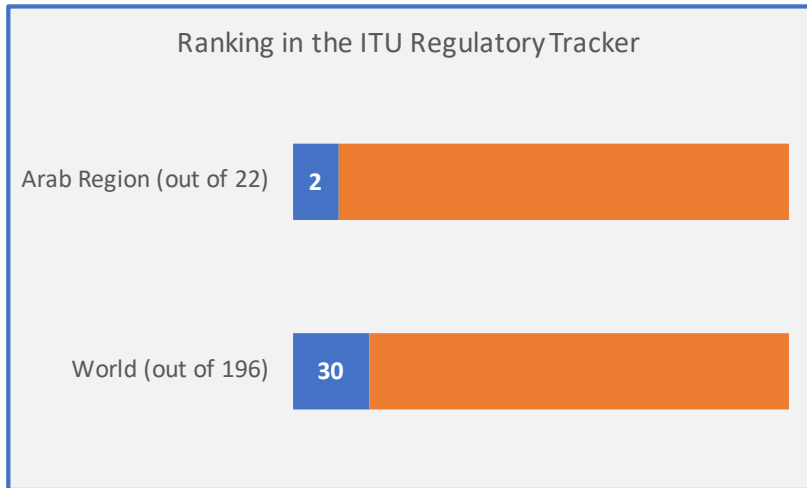
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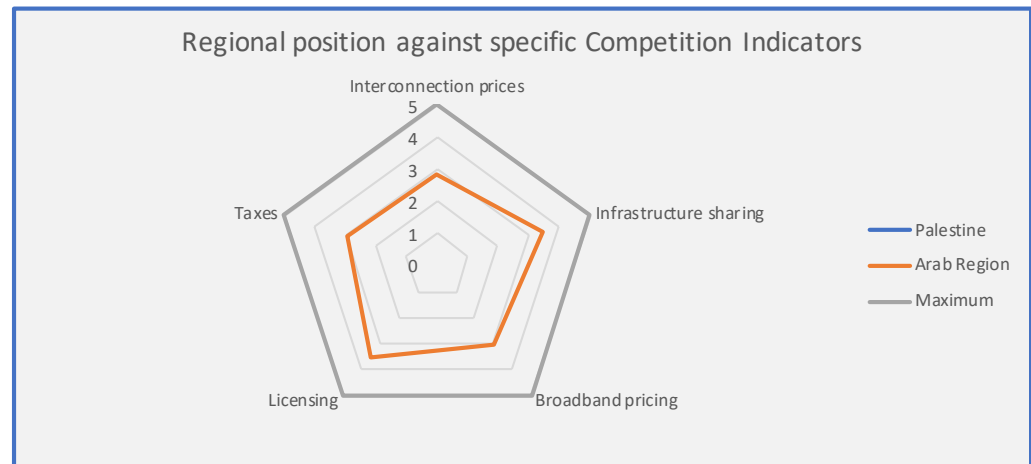
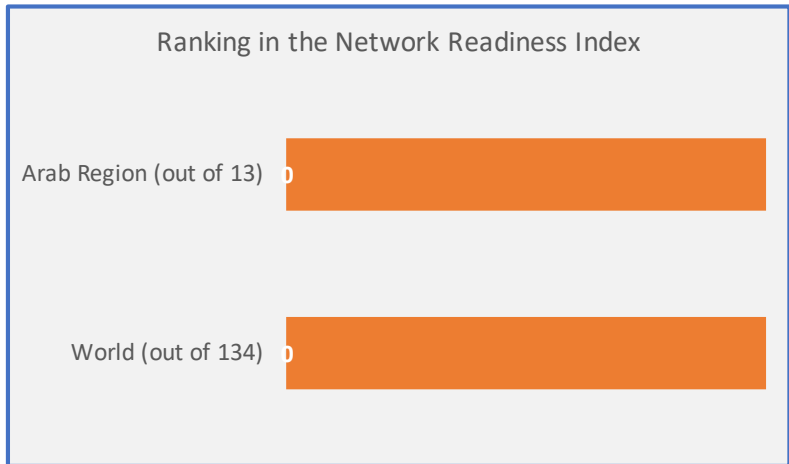
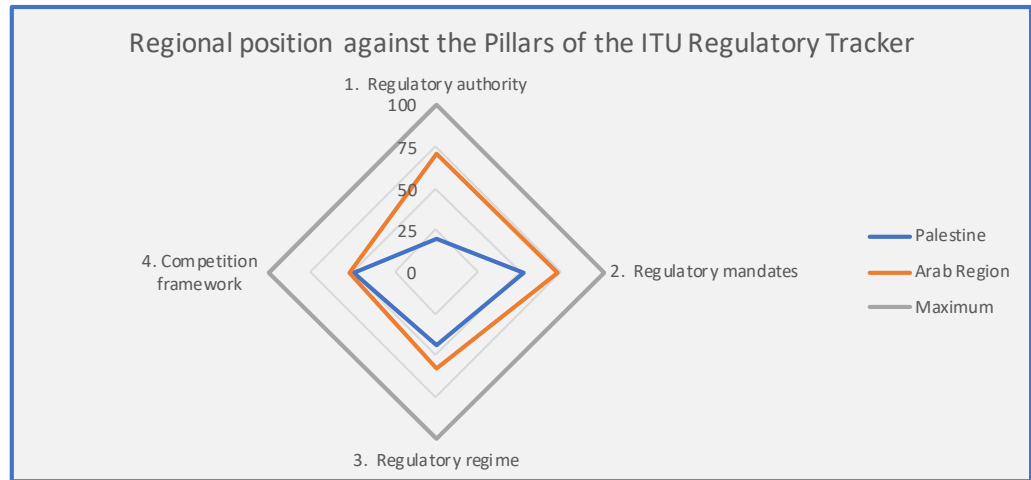
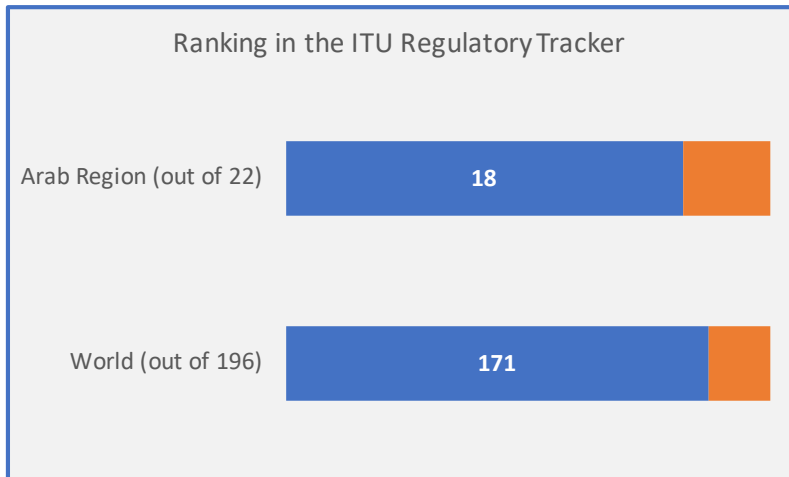


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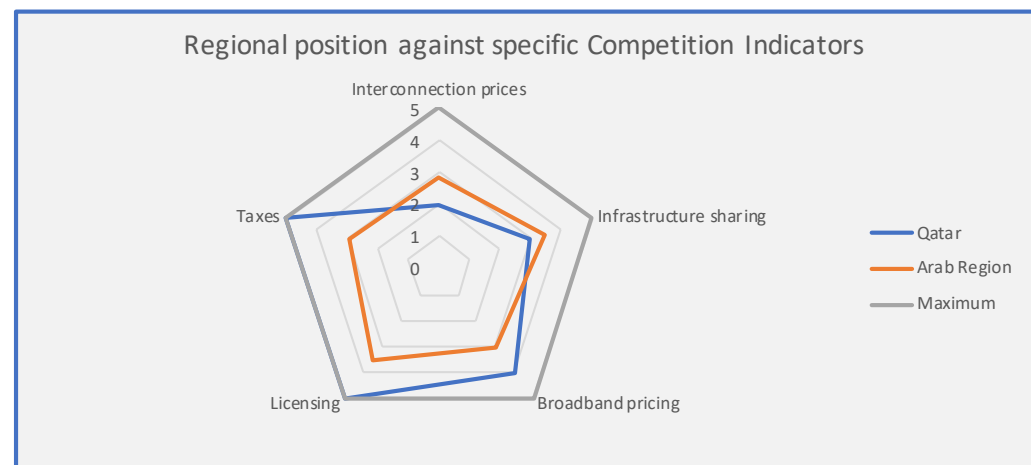
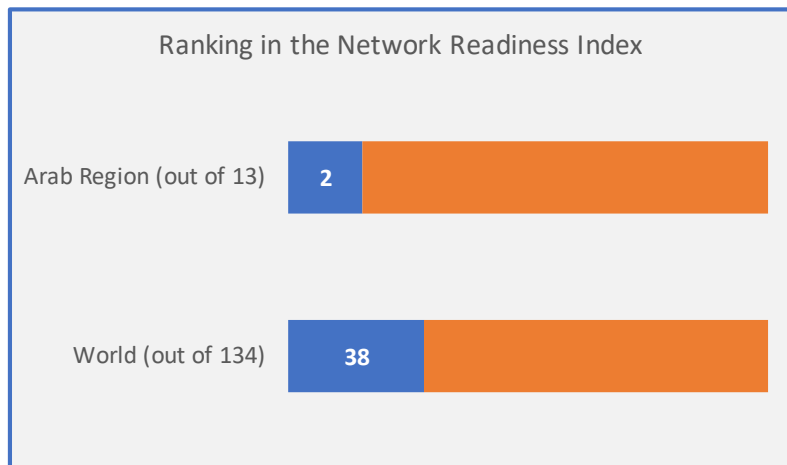
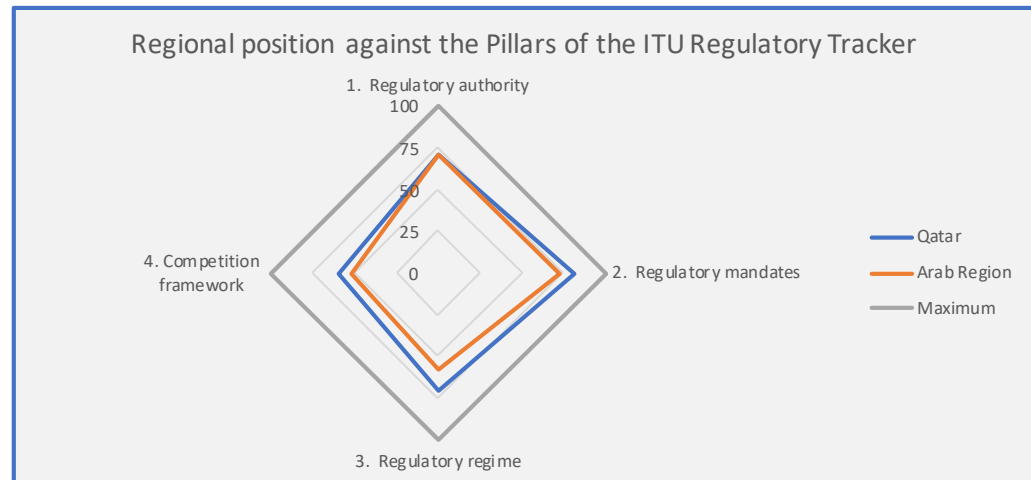
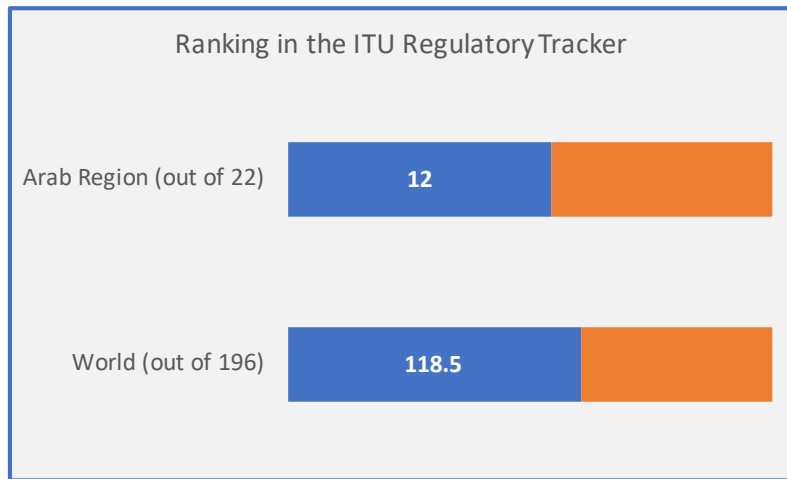




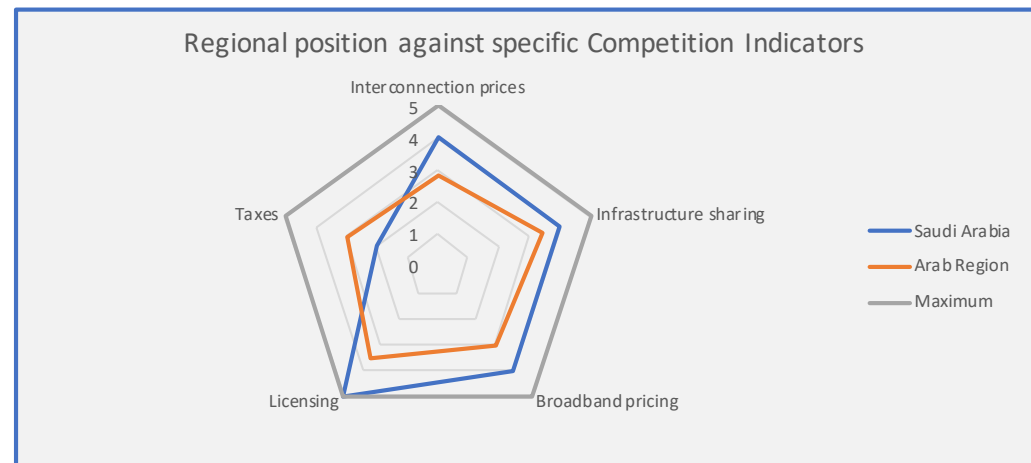
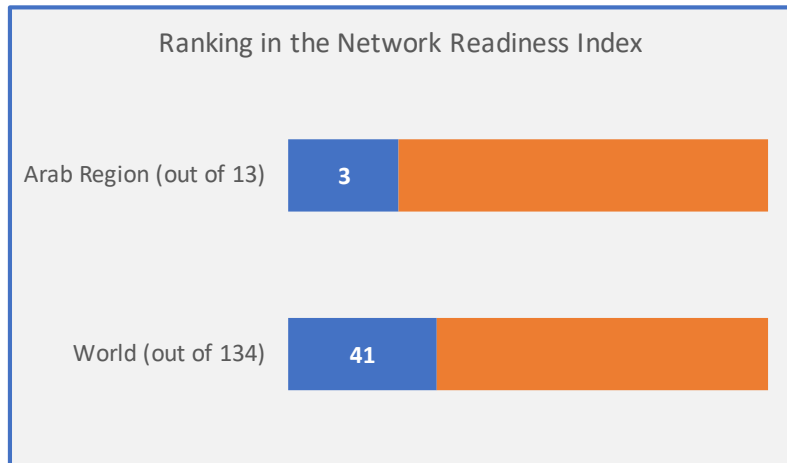
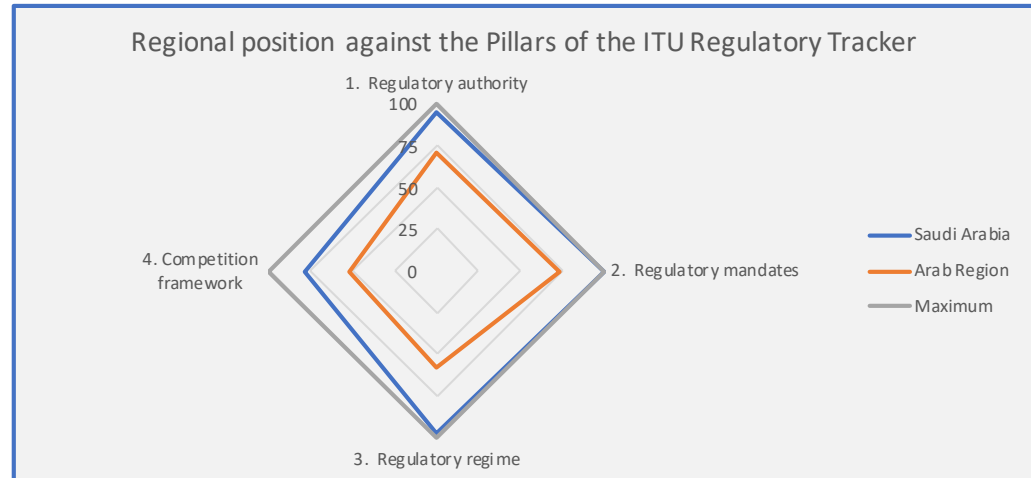
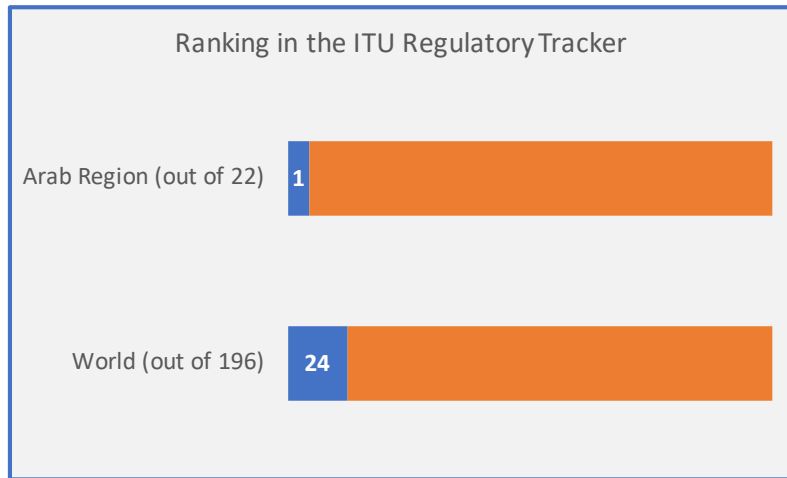
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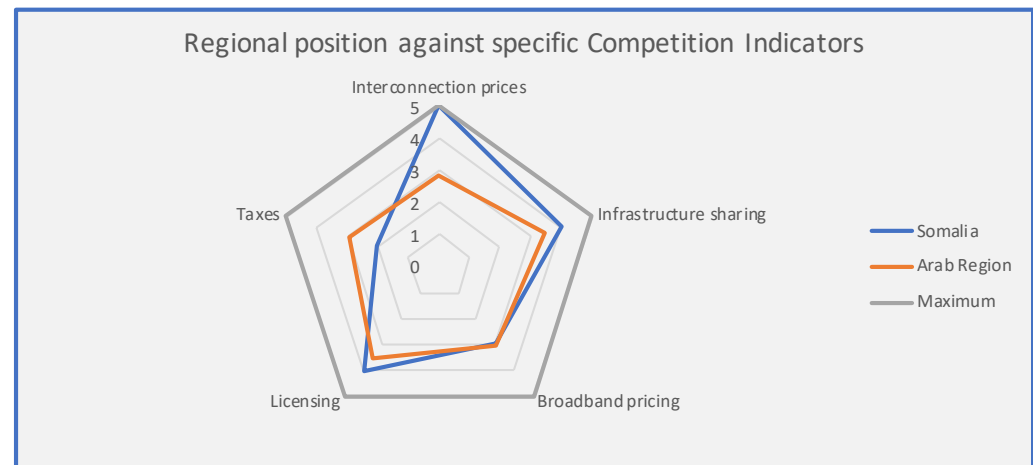
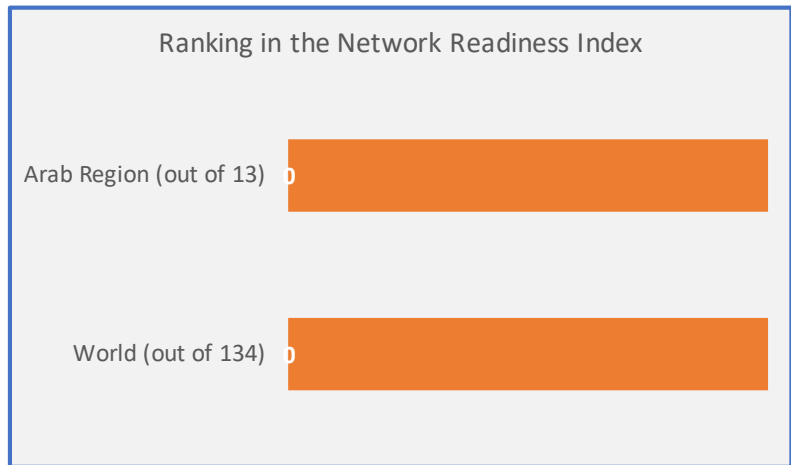
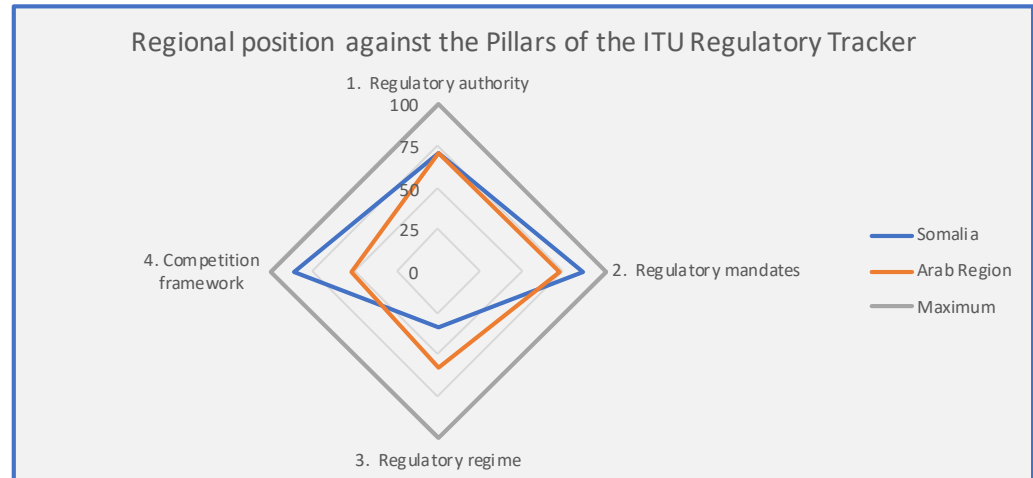
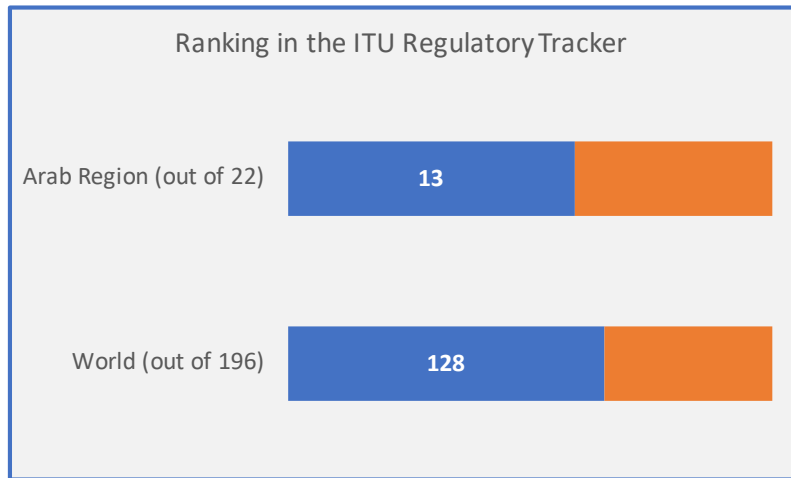
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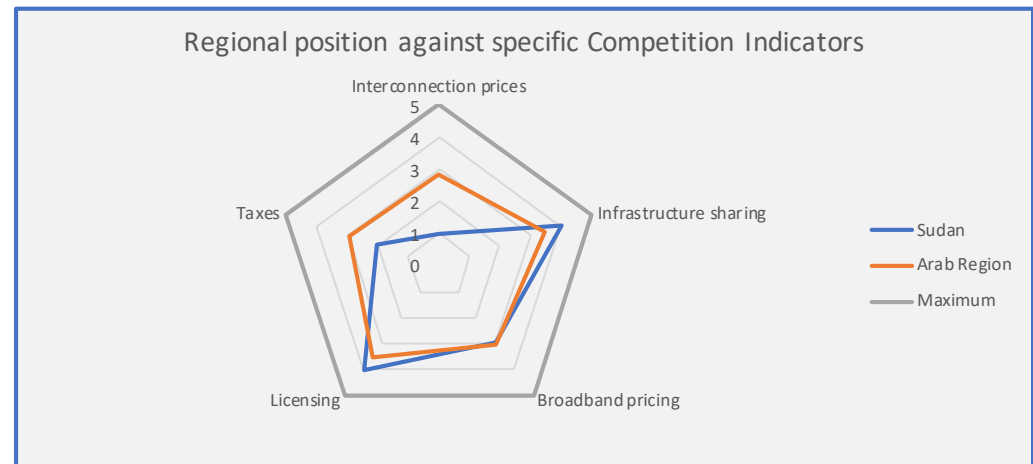
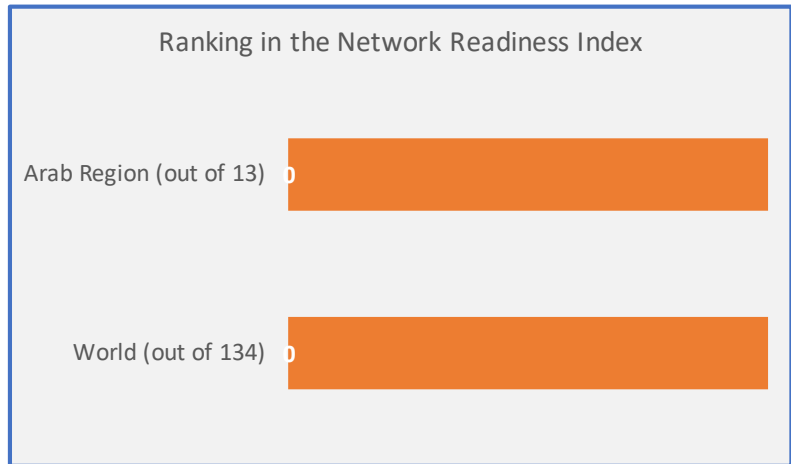
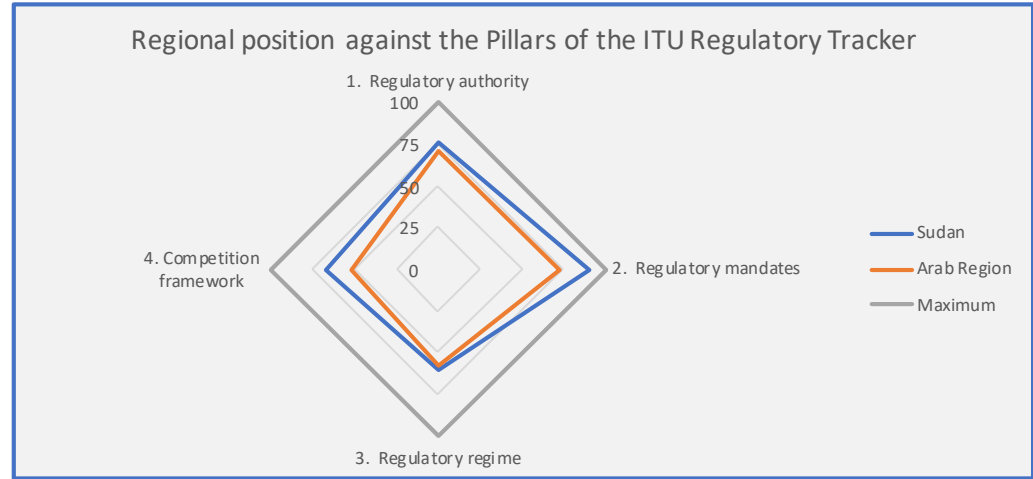
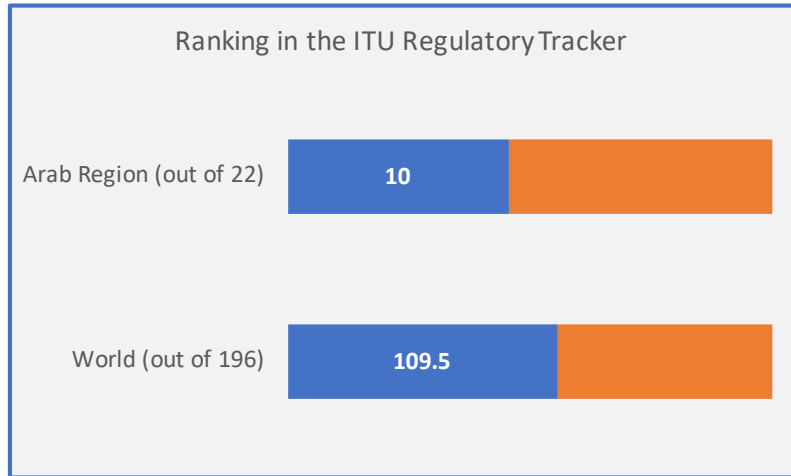
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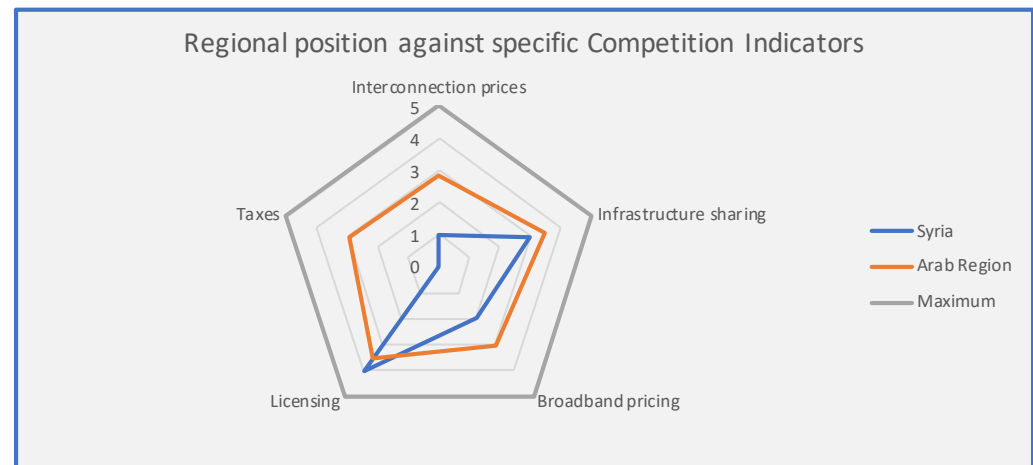
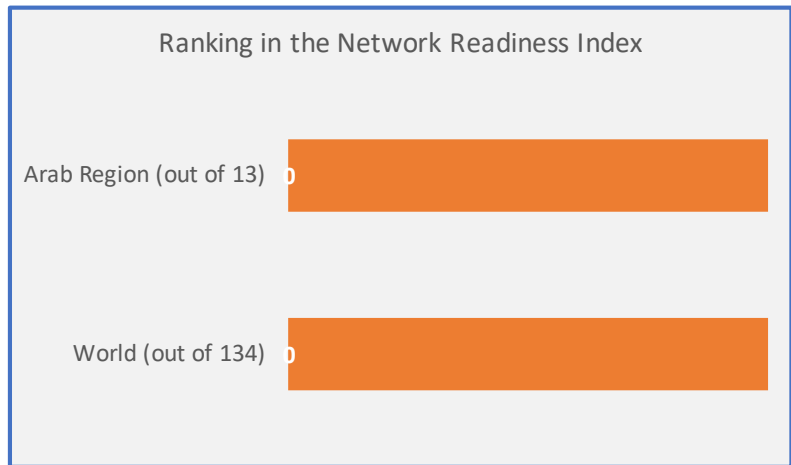
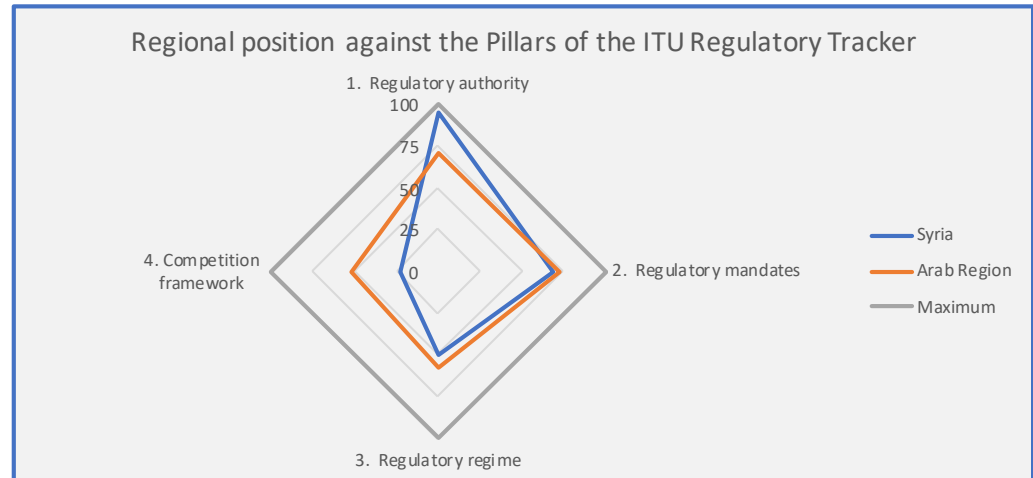
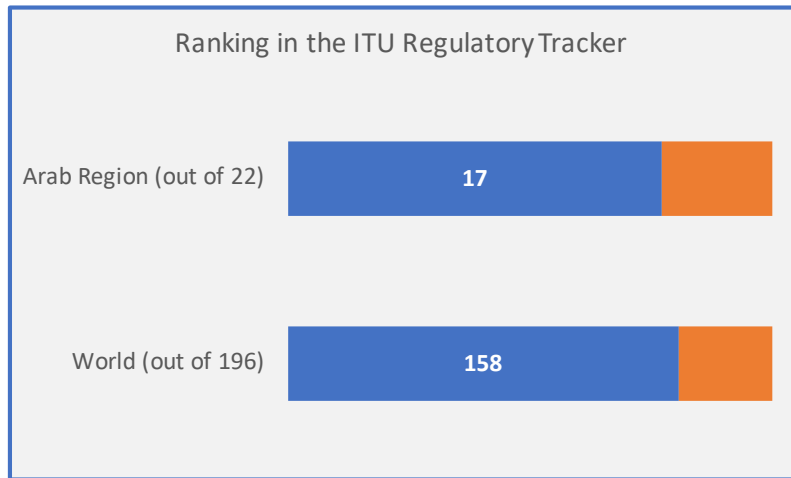
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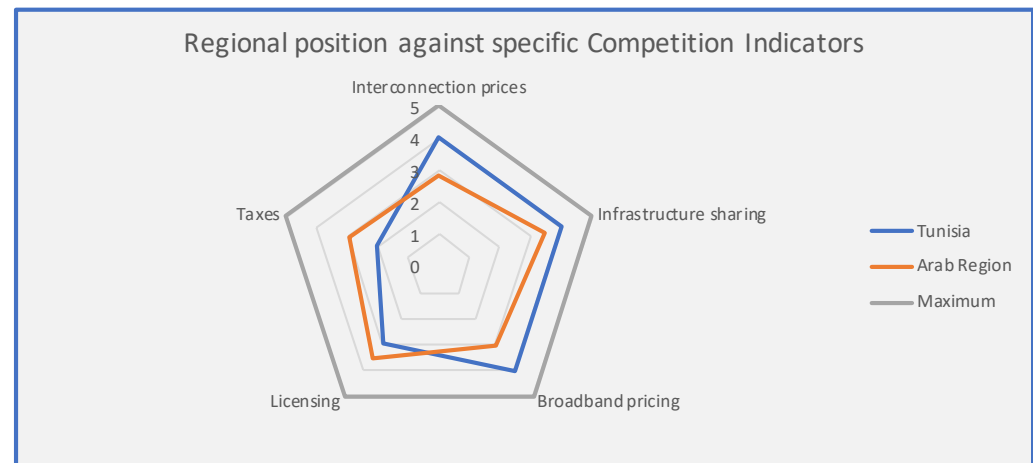
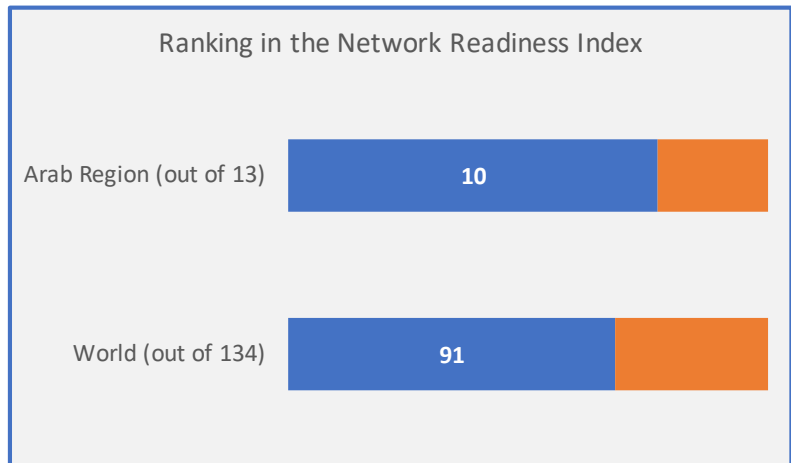
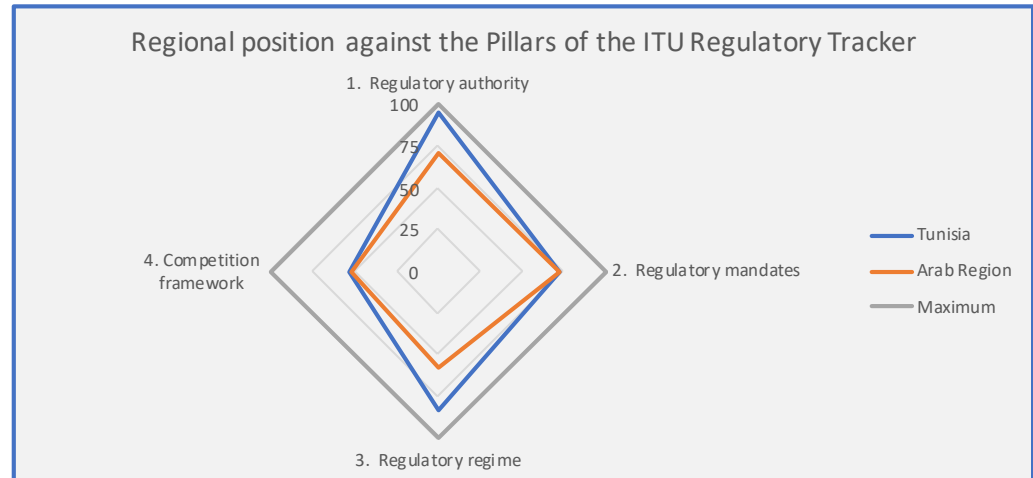
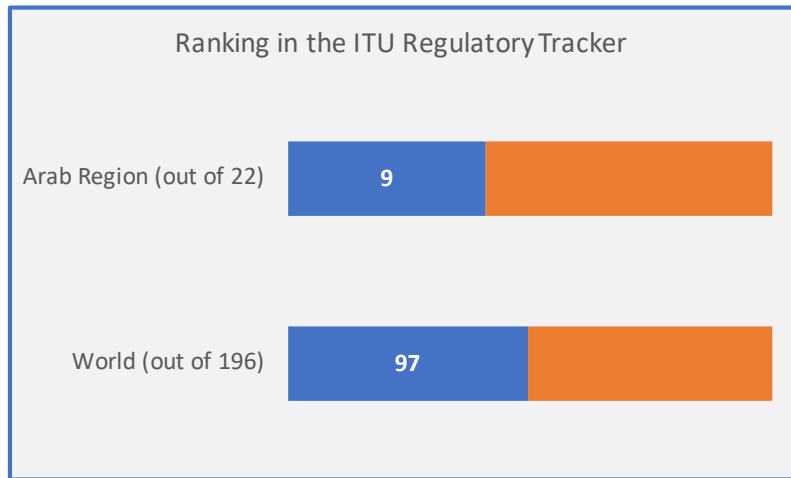


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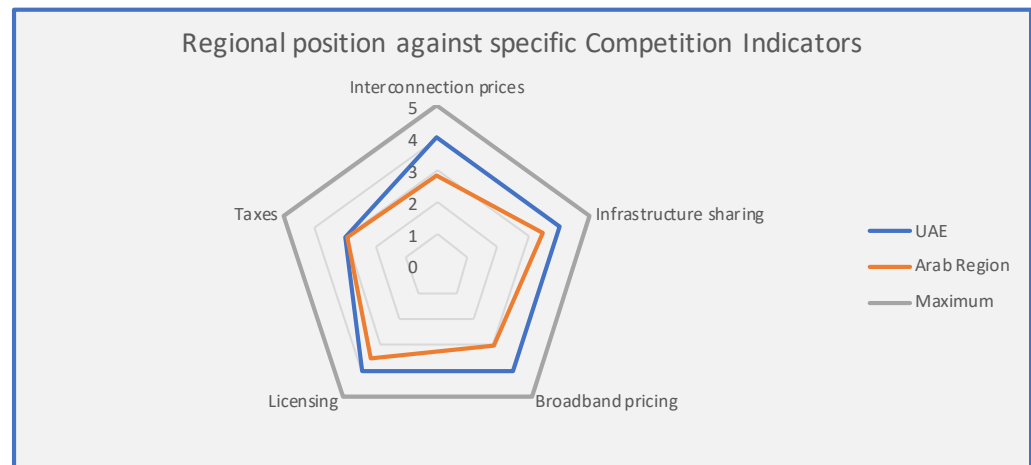
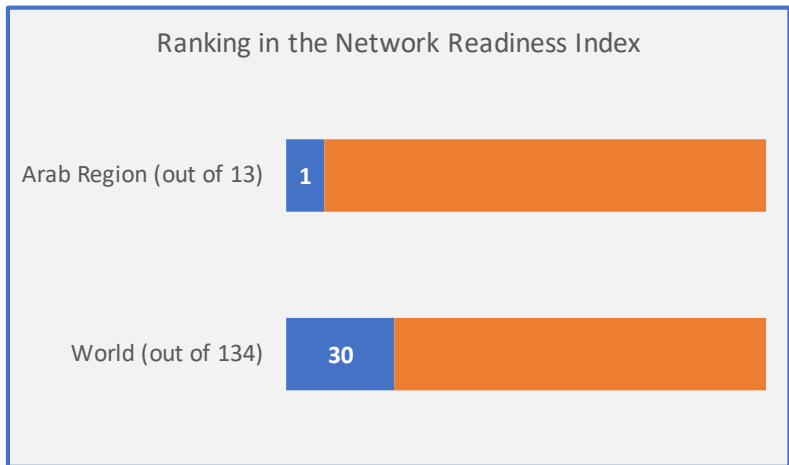
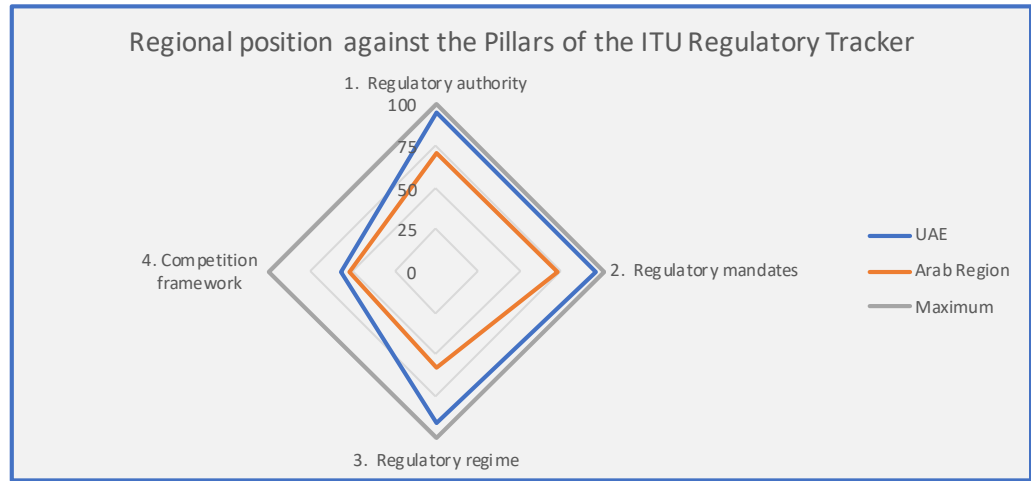
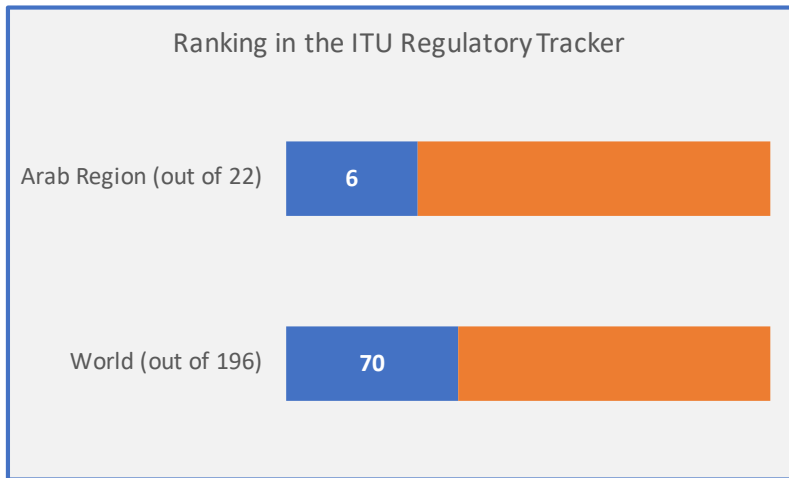




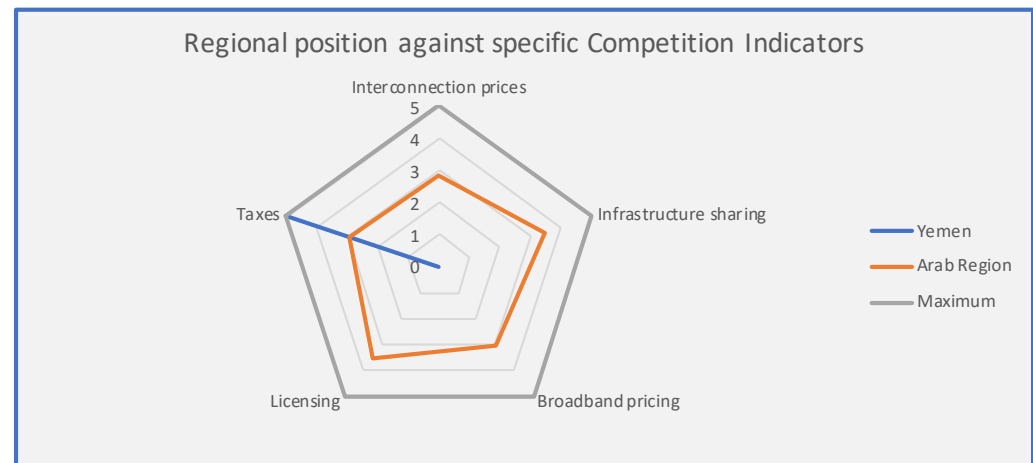
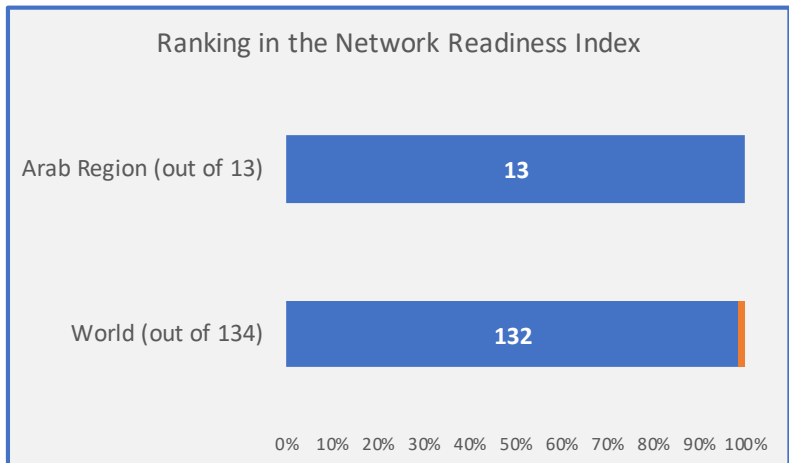
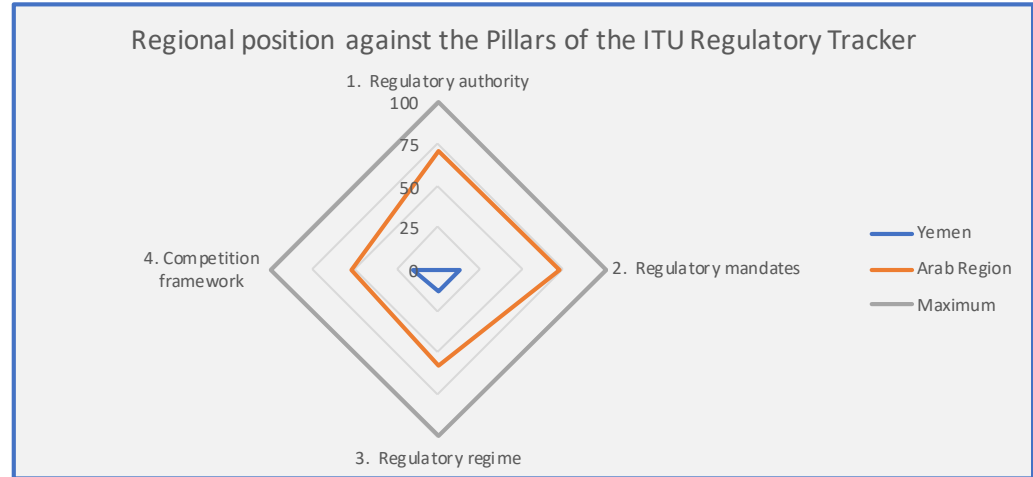
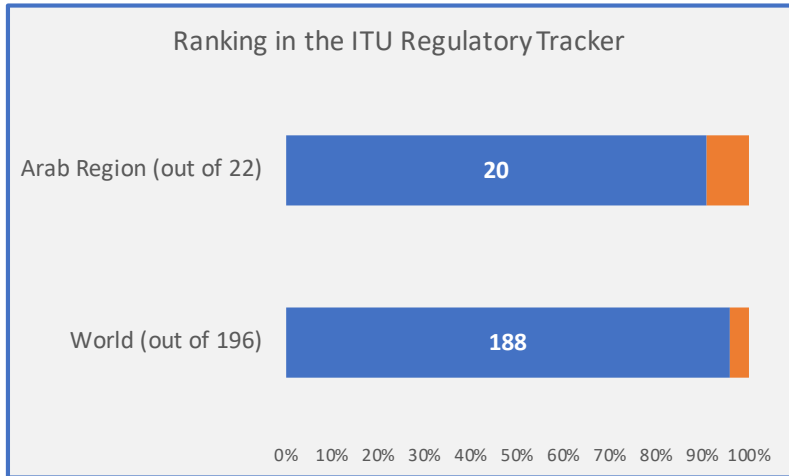
**TUNISIA**



**UNITED ARAB EMIRATES**



**YEMEN**



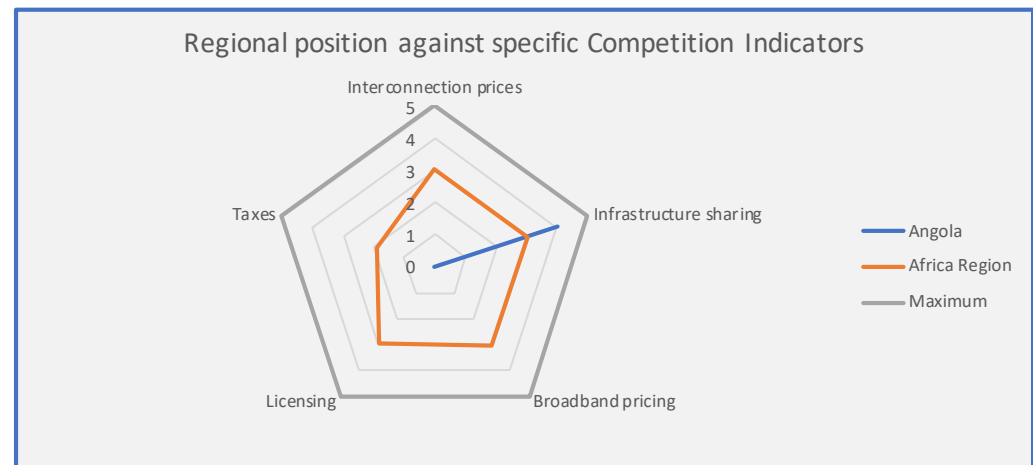
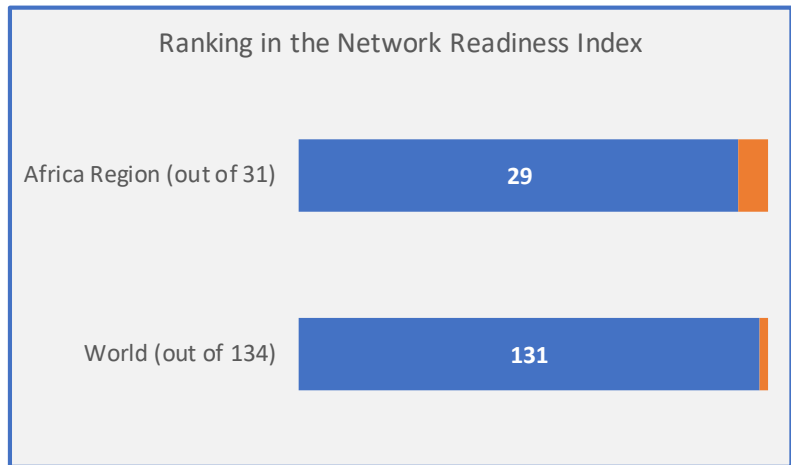
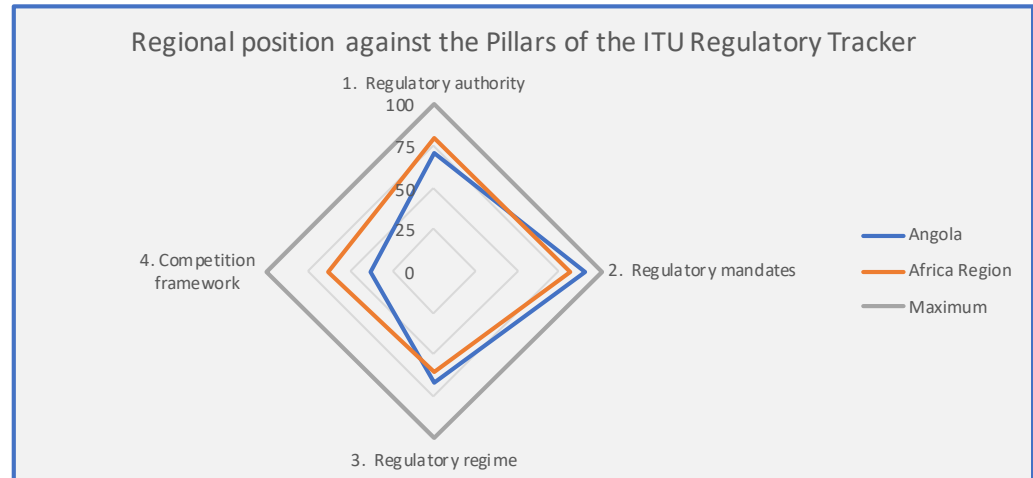
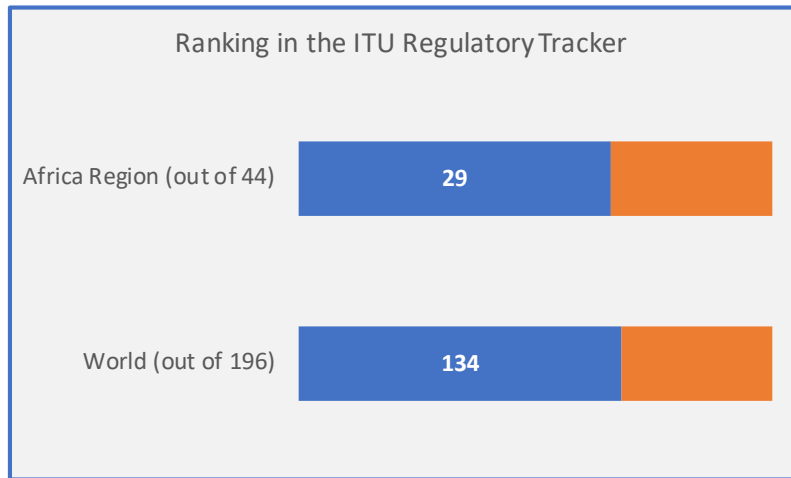
## APPENDIX B: BENCHMARK OF ICT REGULATION IN THE AFRICA REGION

This Appendix presents the results of the benchmark of competition policy and regulation for the Africa Region, comprising the following countries:

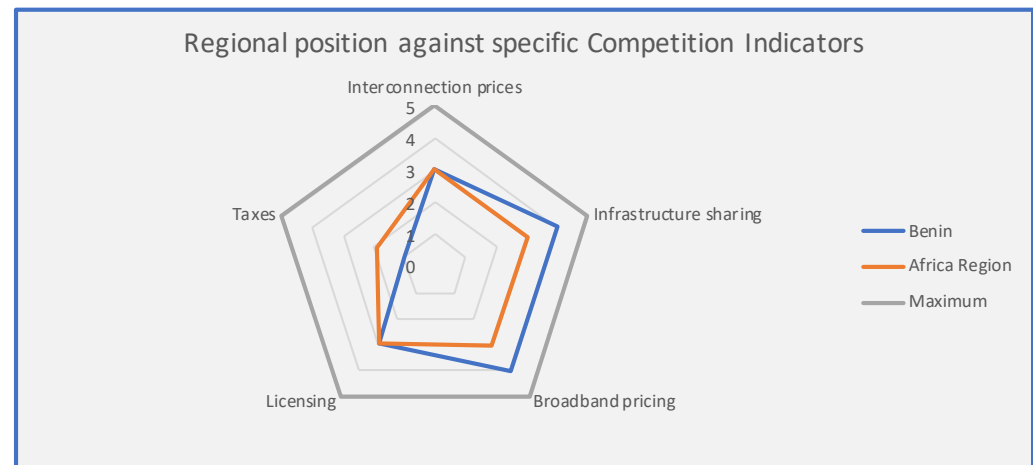
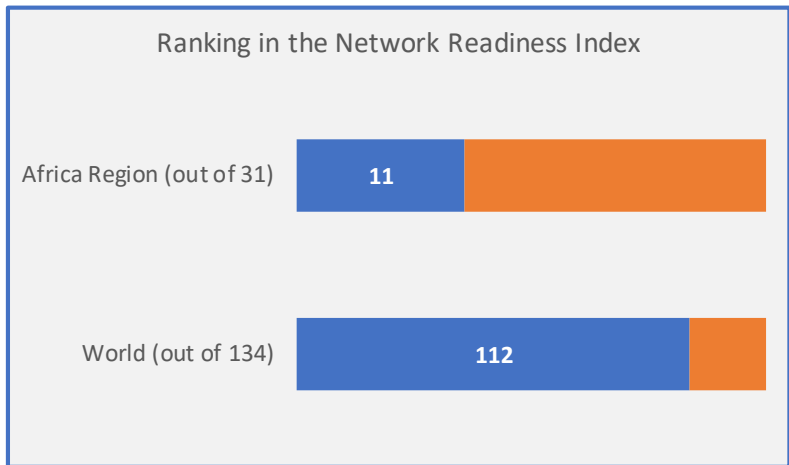
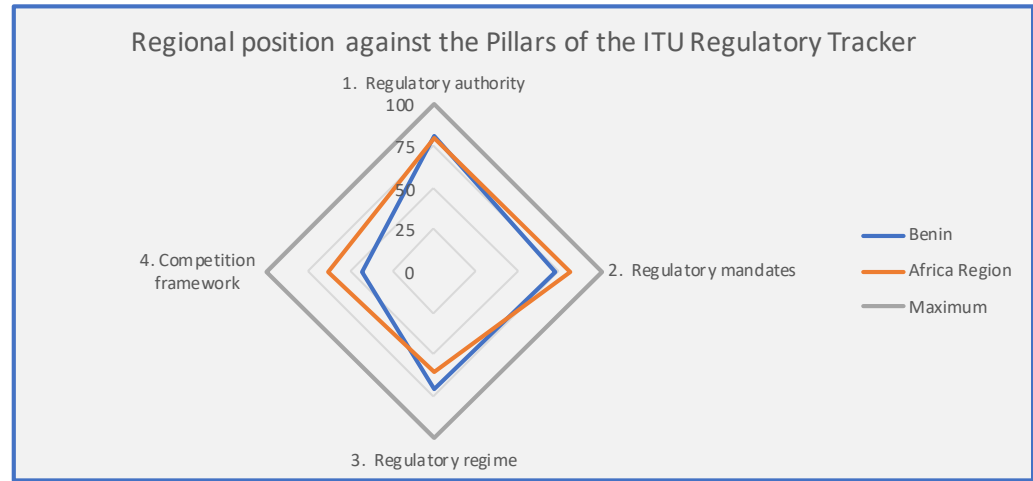
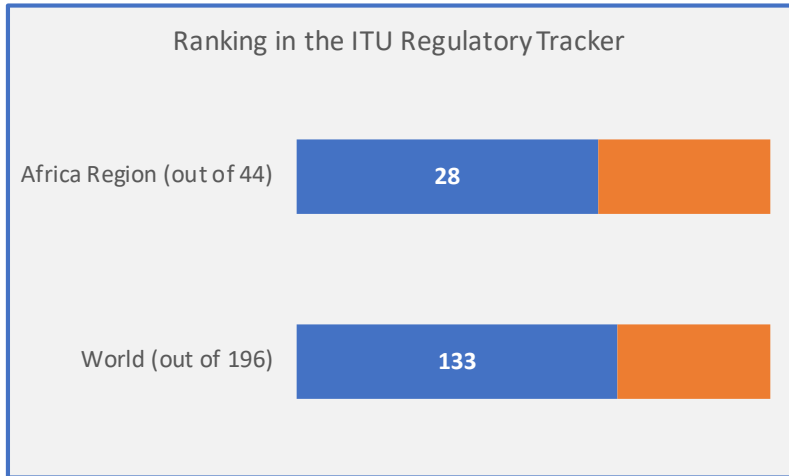
Angola	Ethiopia	Niger
Benin	Gabon	Nigeria
Botswana	Gambia	Rwanda
Burkina Faso	Ghana	Sao Tome and Principe
Burundi	Guinea	Senegal
Cabo Verde	Guinea-Bissau	Seychelles
Cameroon	Kenya	Sierra Leone
Central African Rep.	Lesotho	South Africa.
Chad	Liberia	South Sudan
Congo (Rep. of the)	Madagascar	Tanzania
Côte d'Ivoire	Malawi	Togo
Dem. Rep. of the Congo	Mali	Uganda
Equatorial Guinea	Mauritius	Zambia
Eritrea	Mozambique	Zimbabwe
Eswatini	Namibia	

The benchmarking methodology and data sources are explained in Chapter 3 of this report.

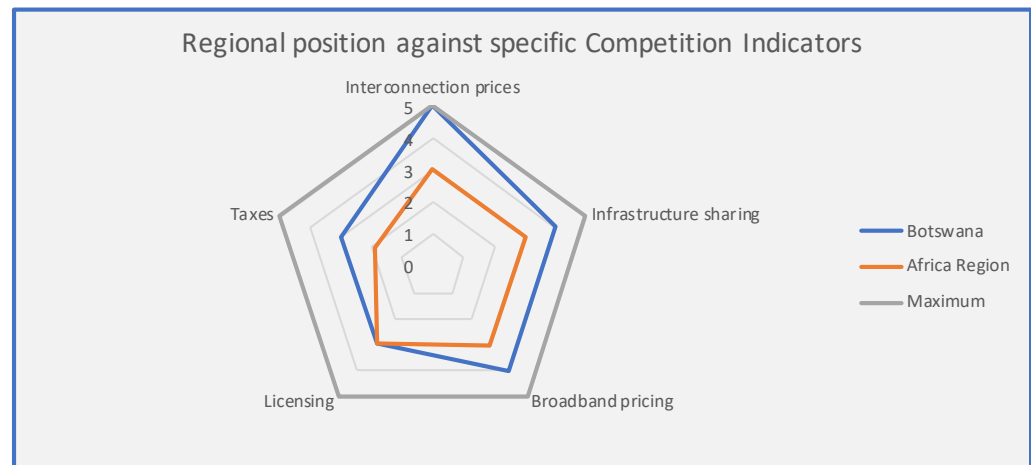
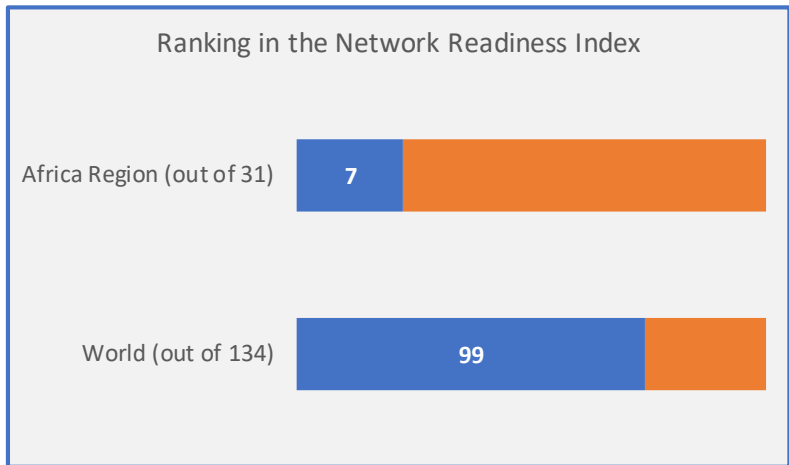
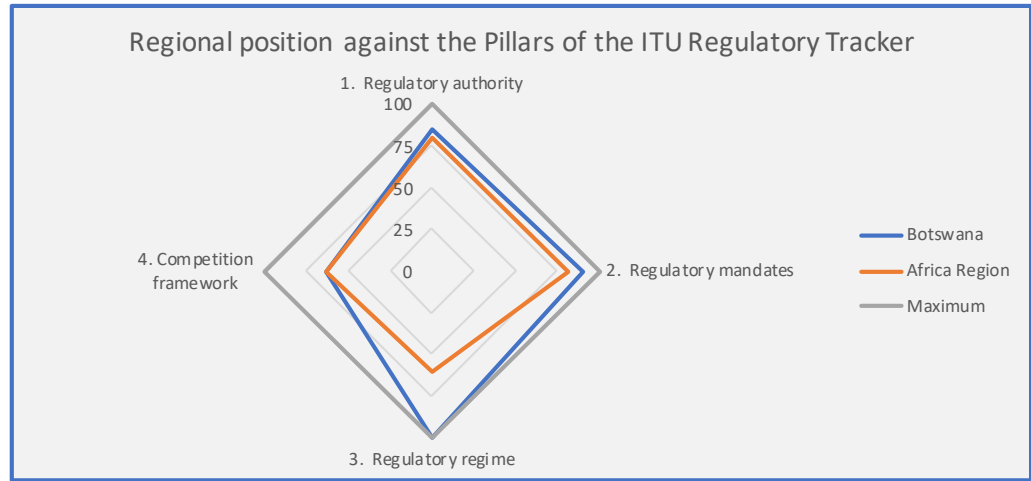
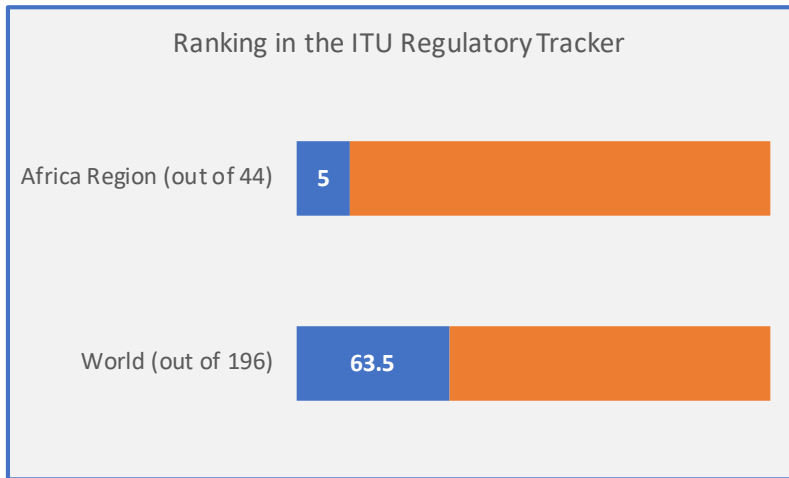
**ANGOLA**



**BENIN**

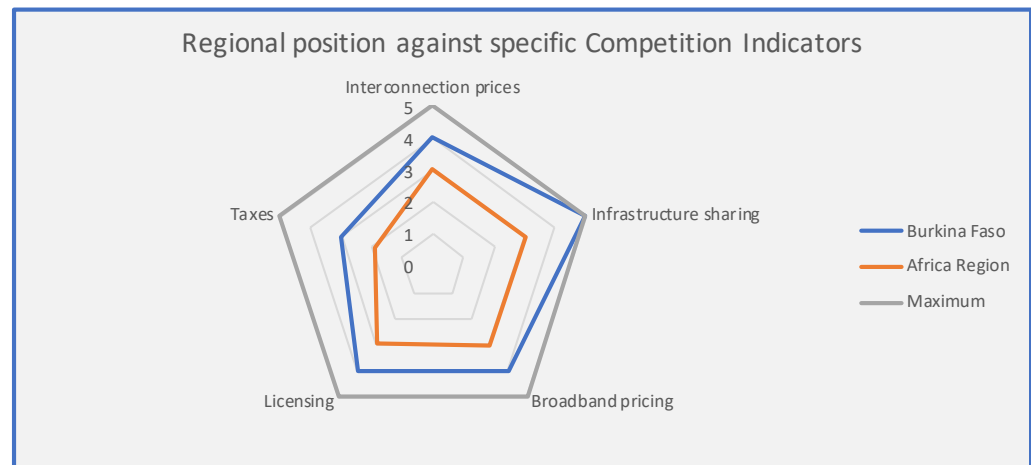
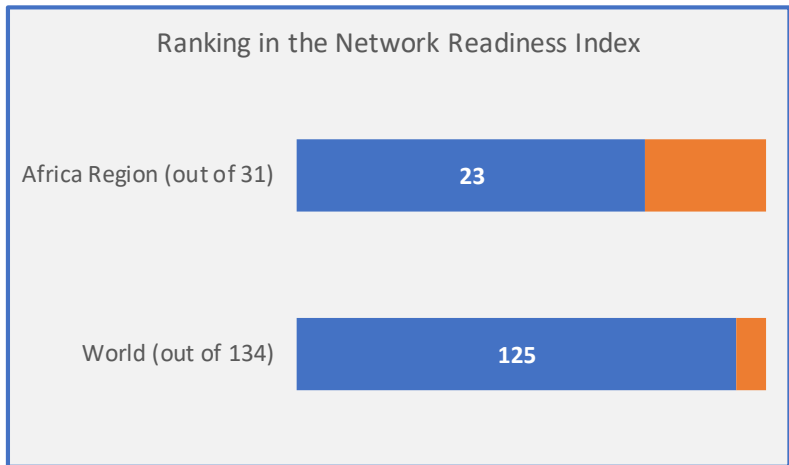
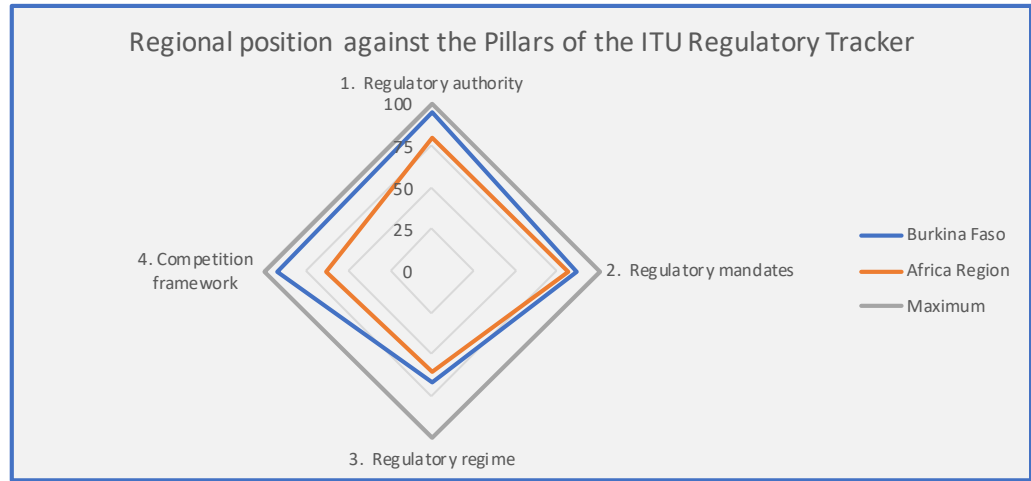
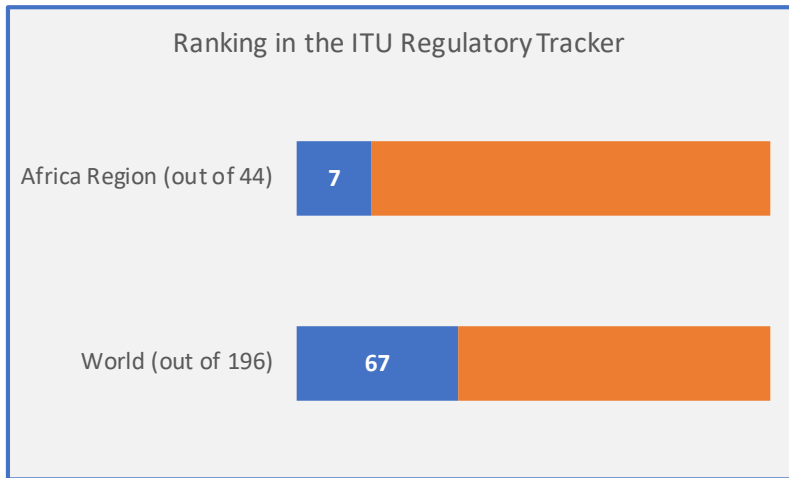


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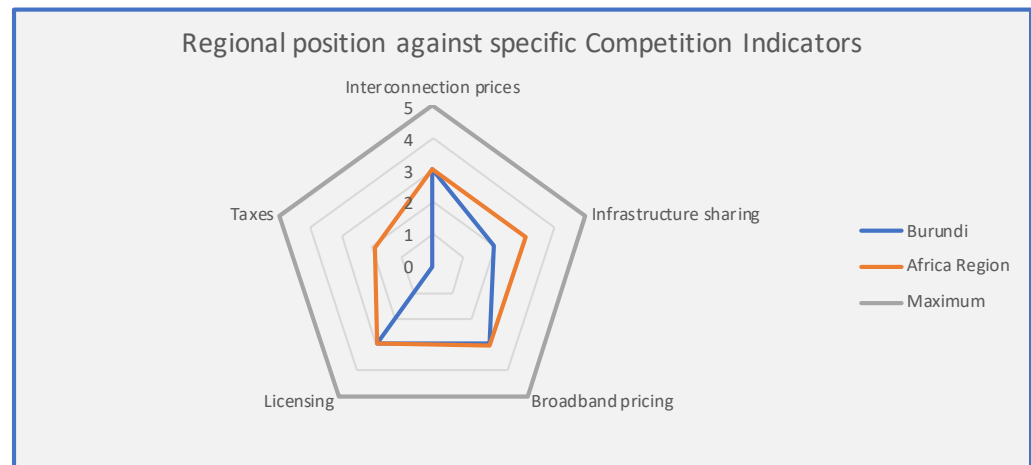
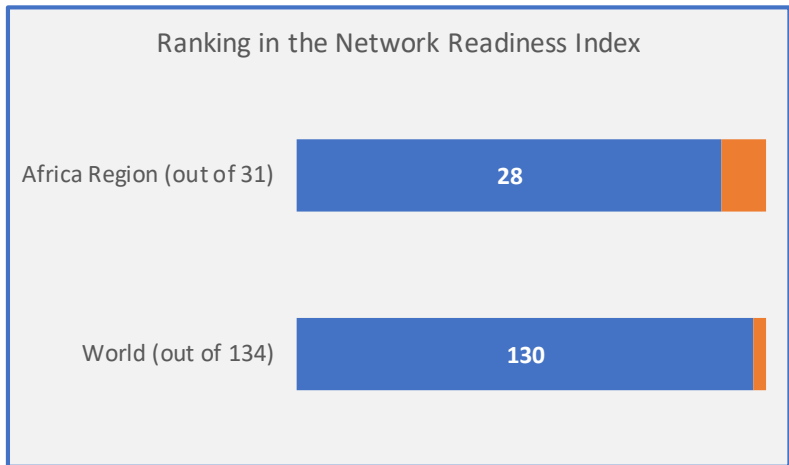
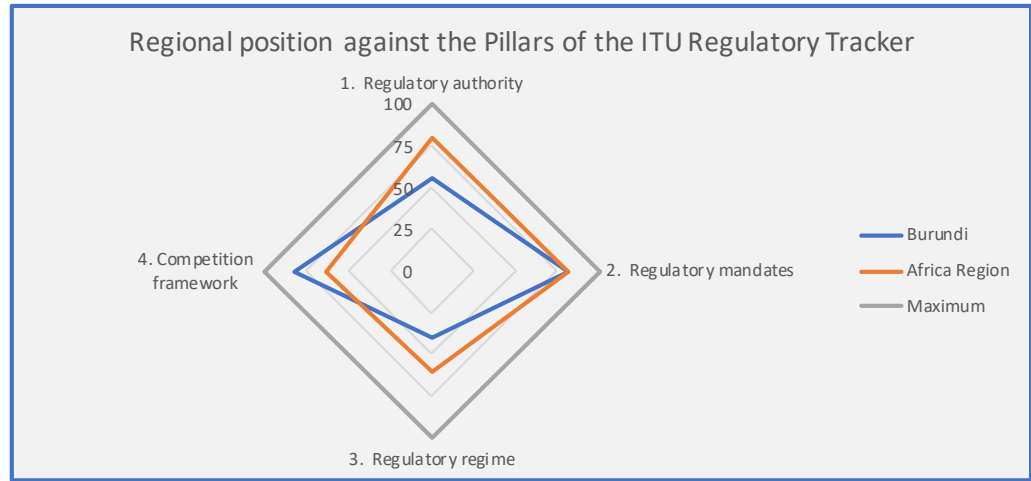
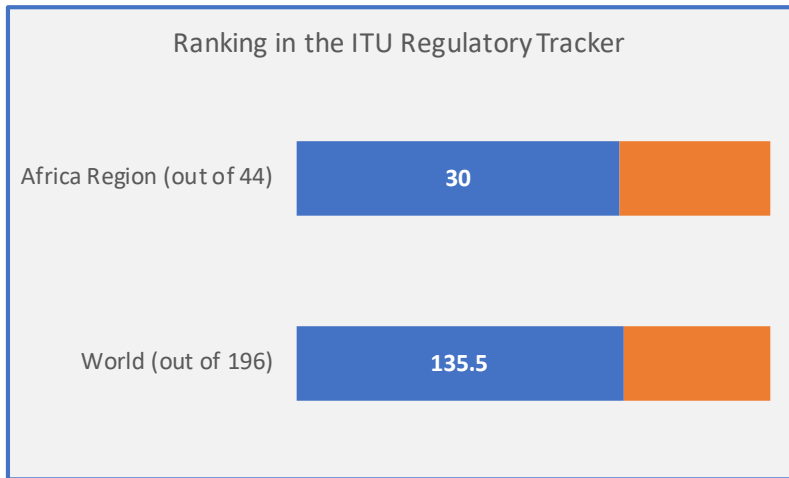




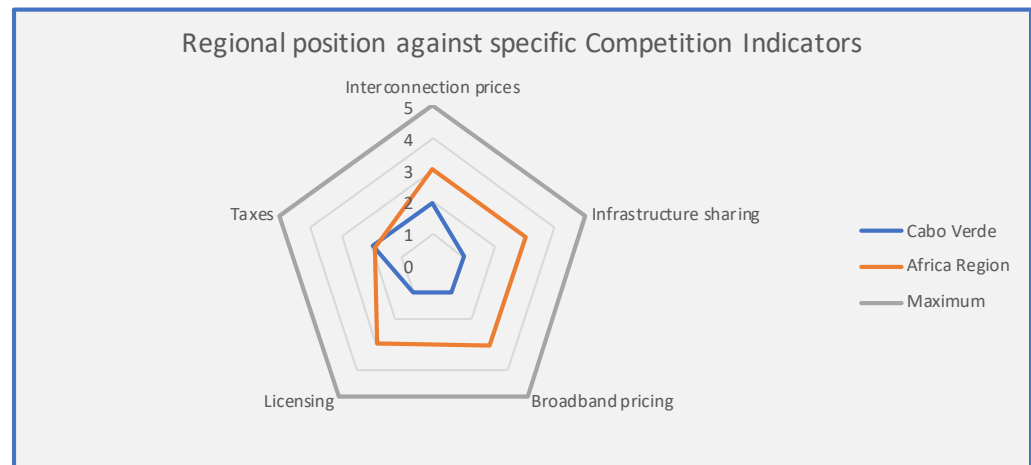
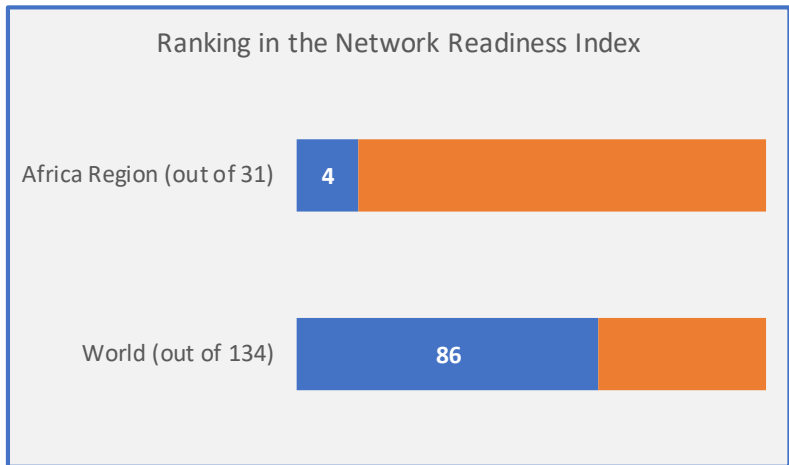
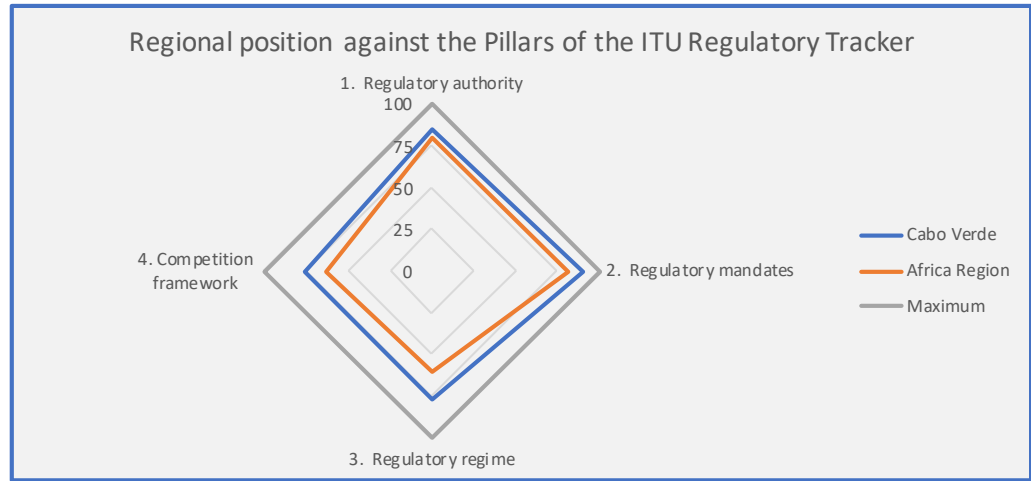
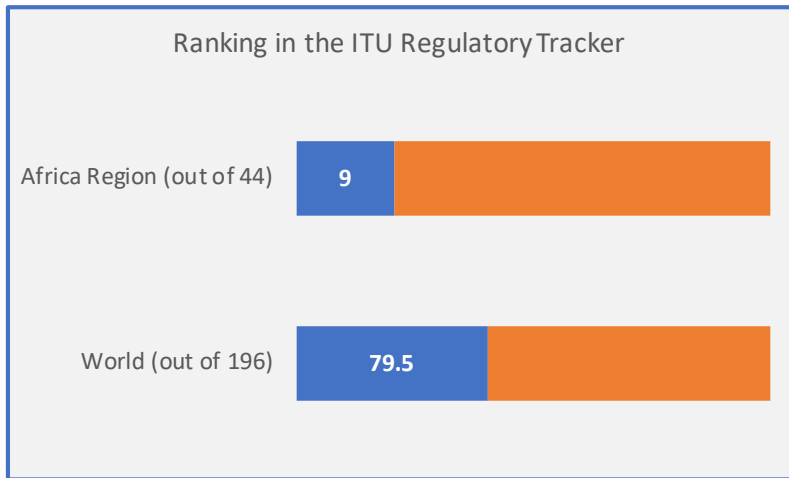
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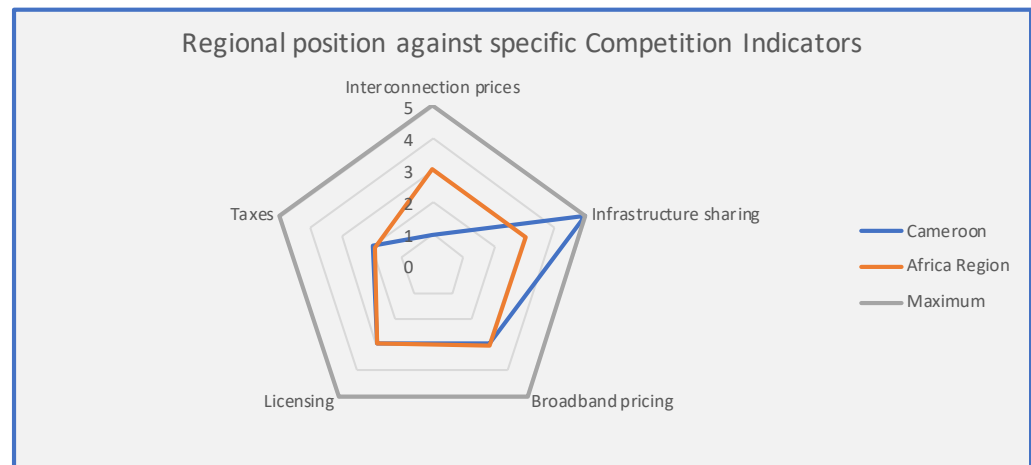
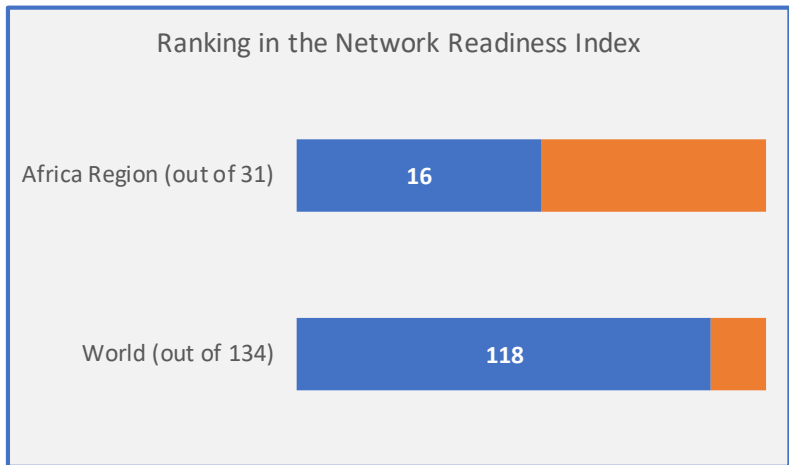
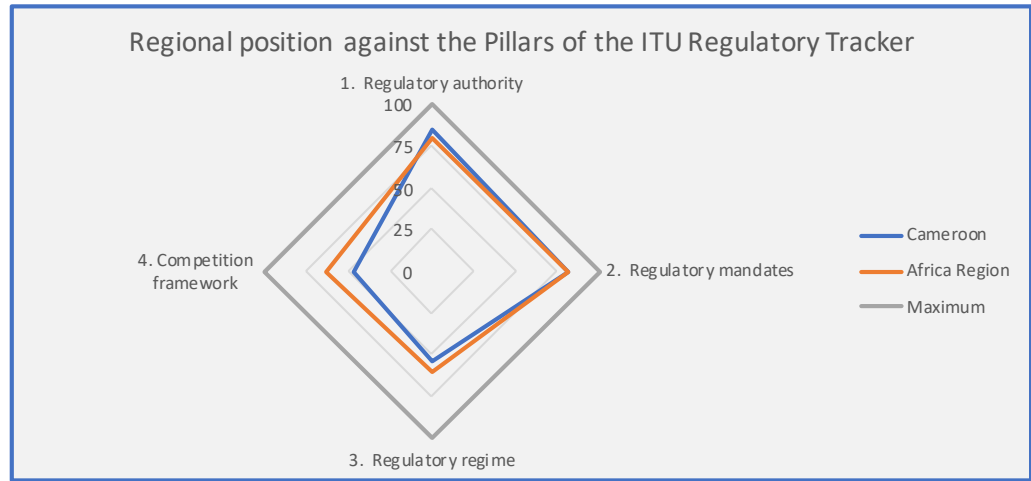
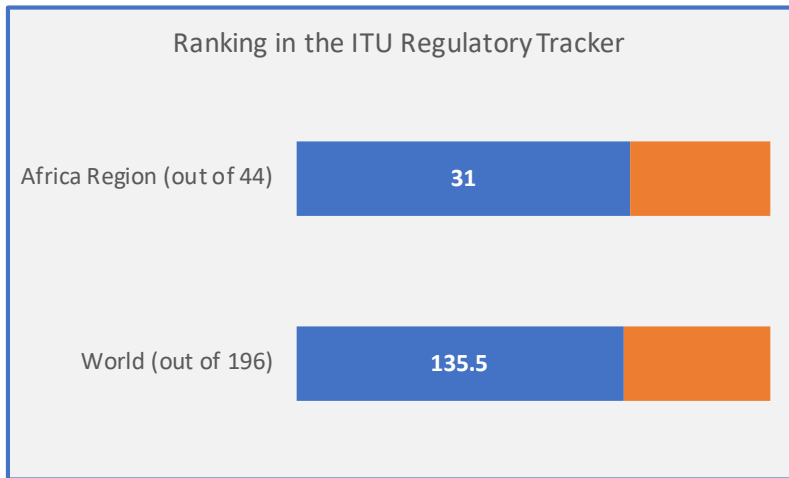
**BURUNDI**



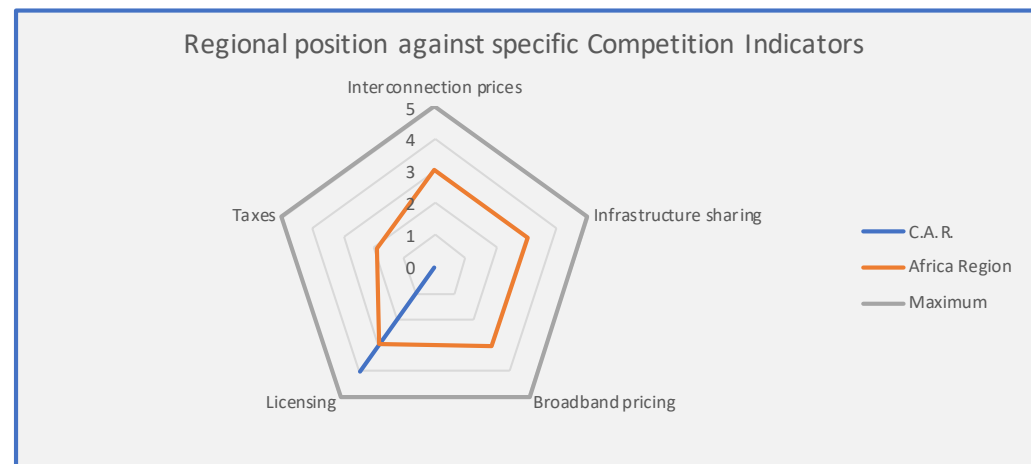
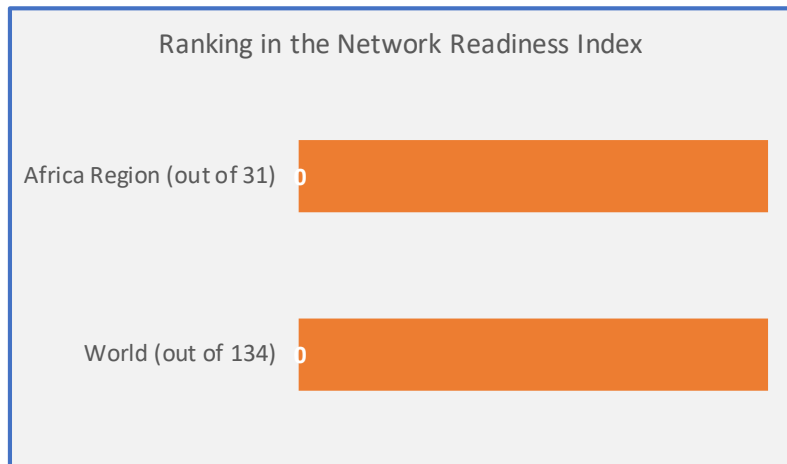
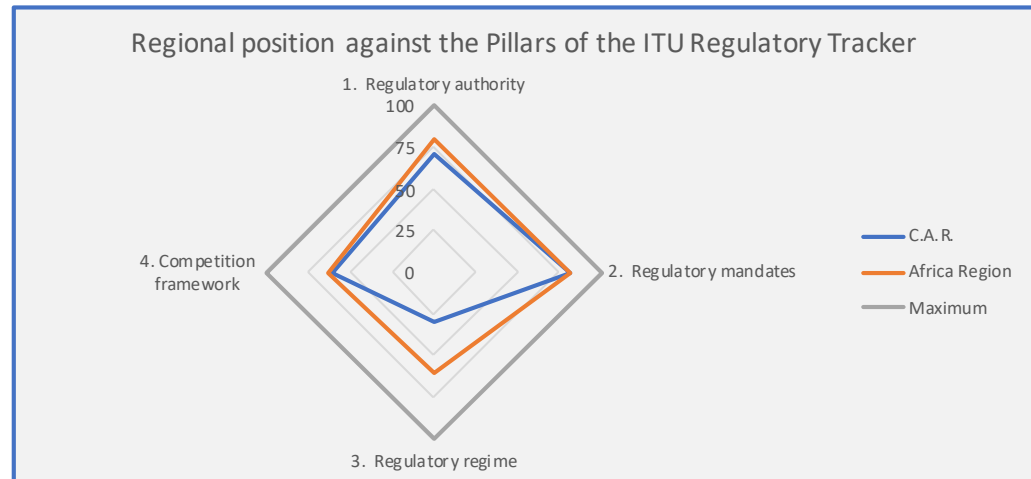
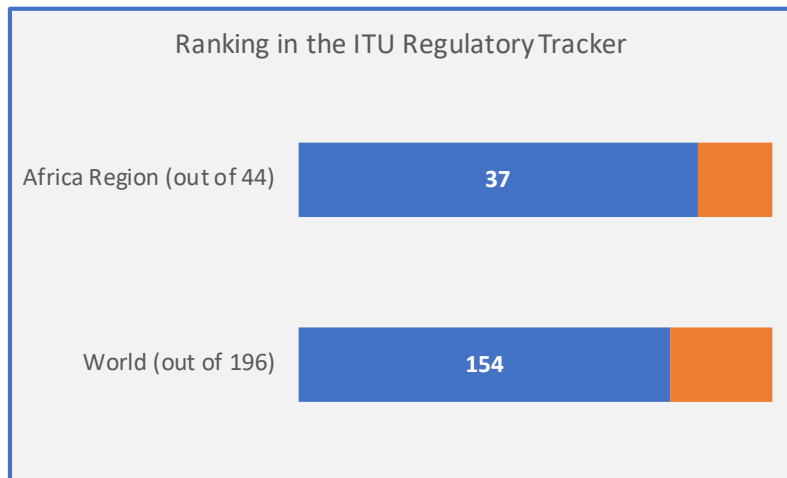
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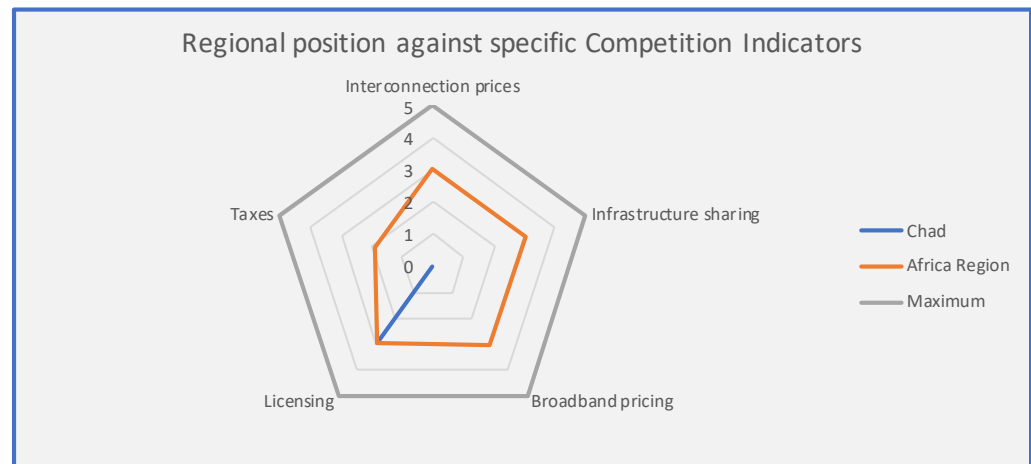
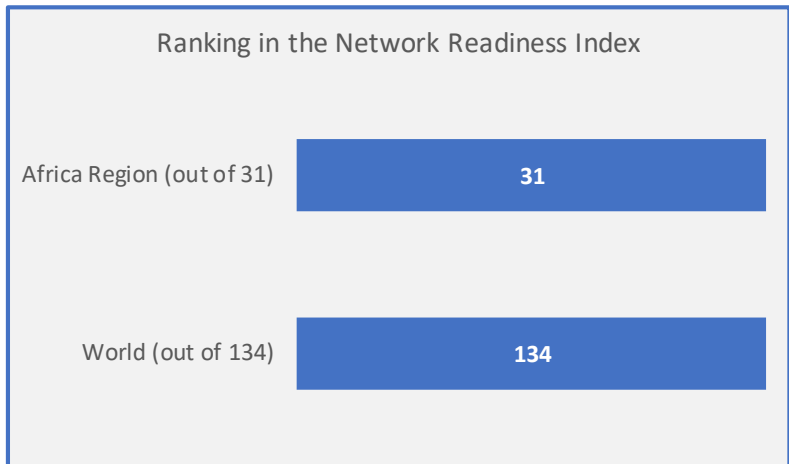
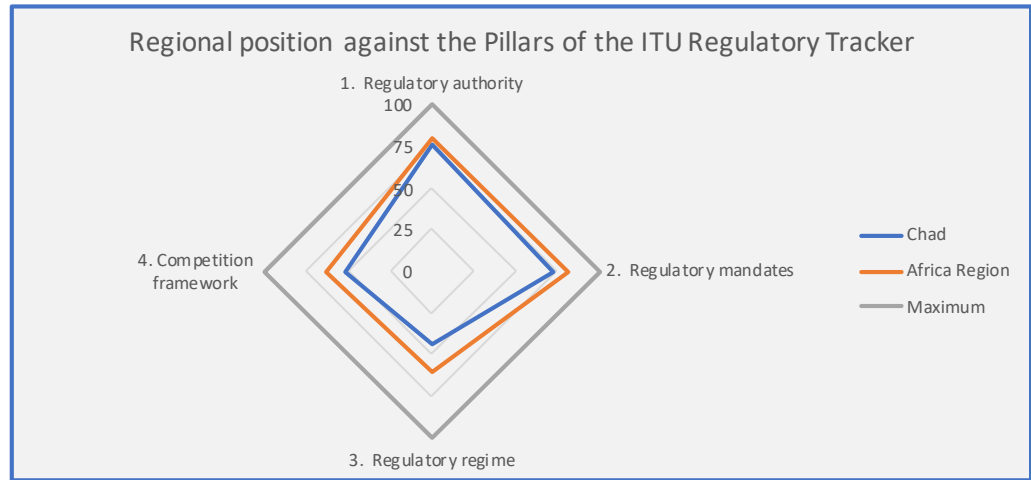
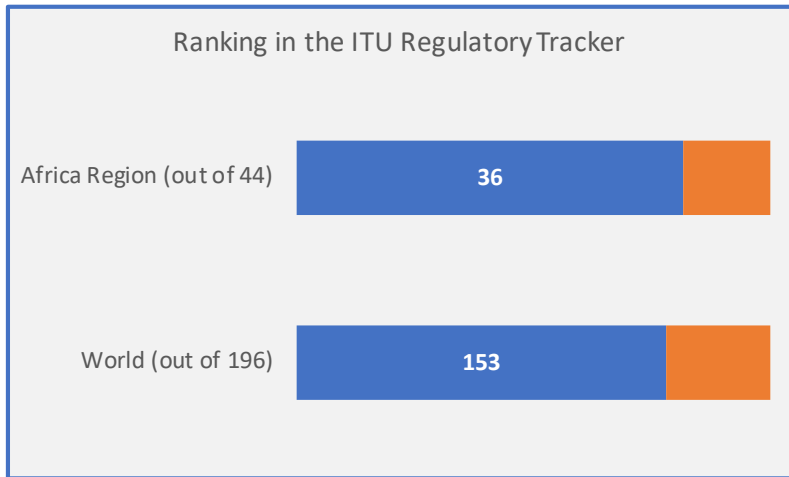
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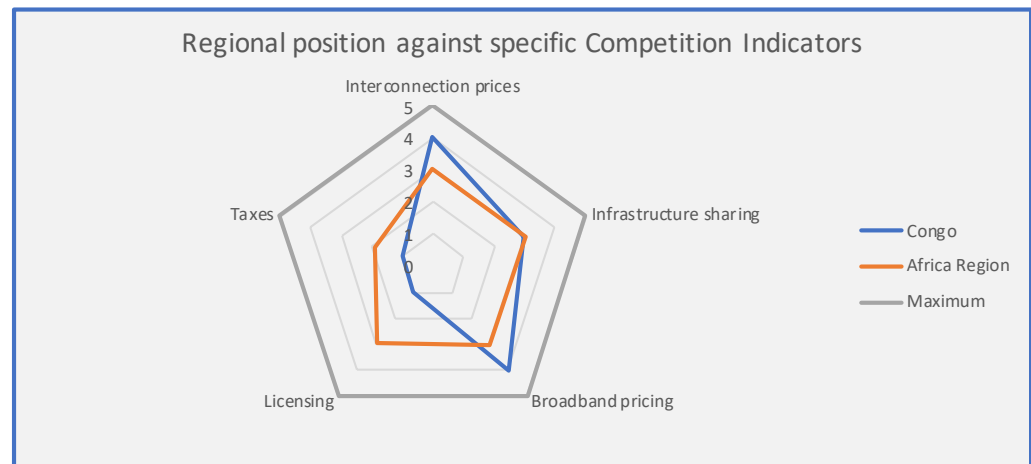
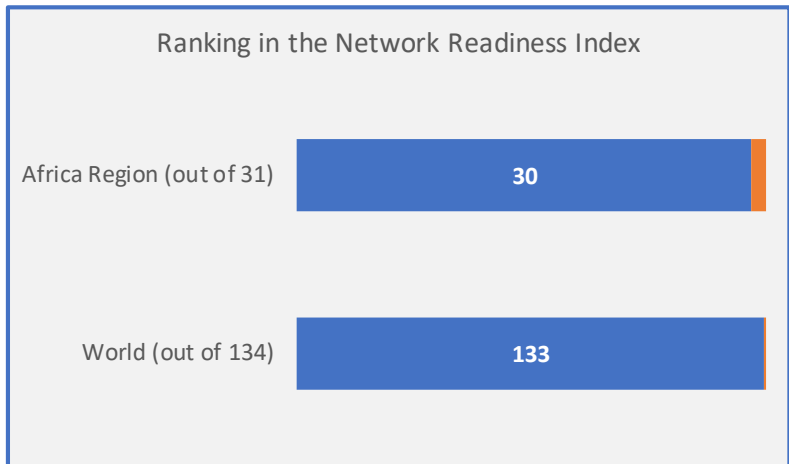
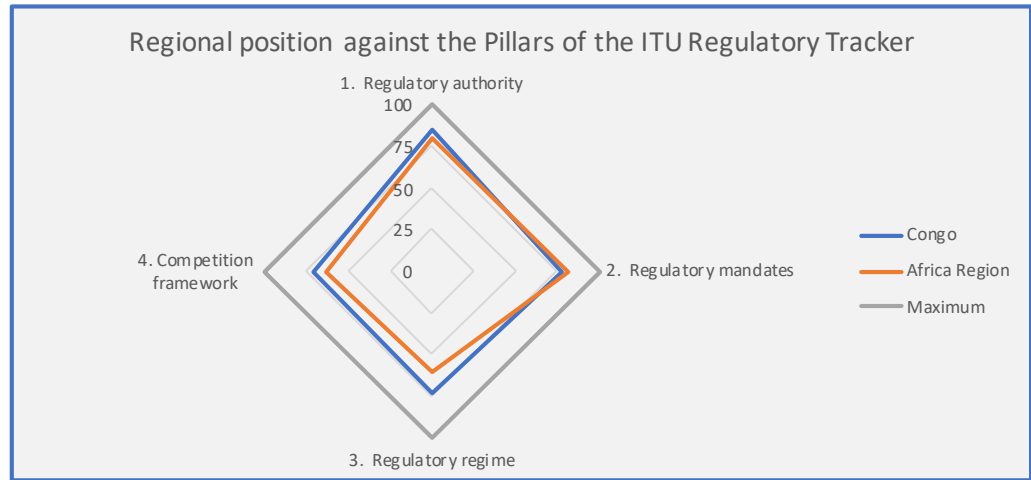
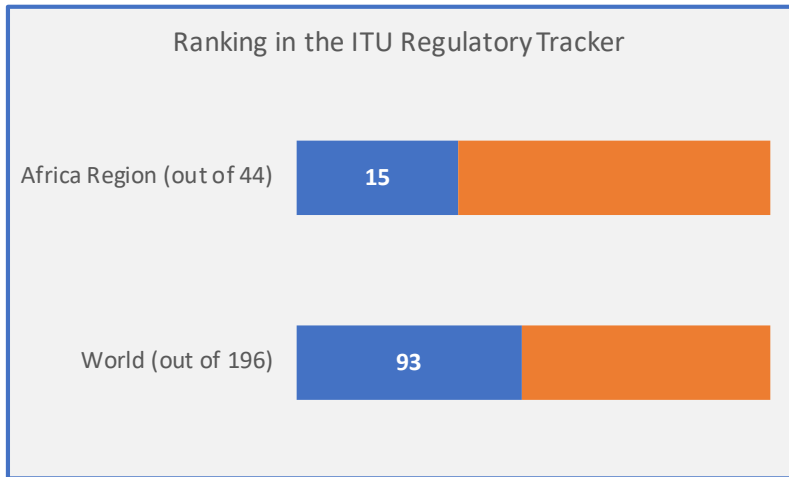
**CENTRAL AFRICAN REPUBLIC**



**CHAD**

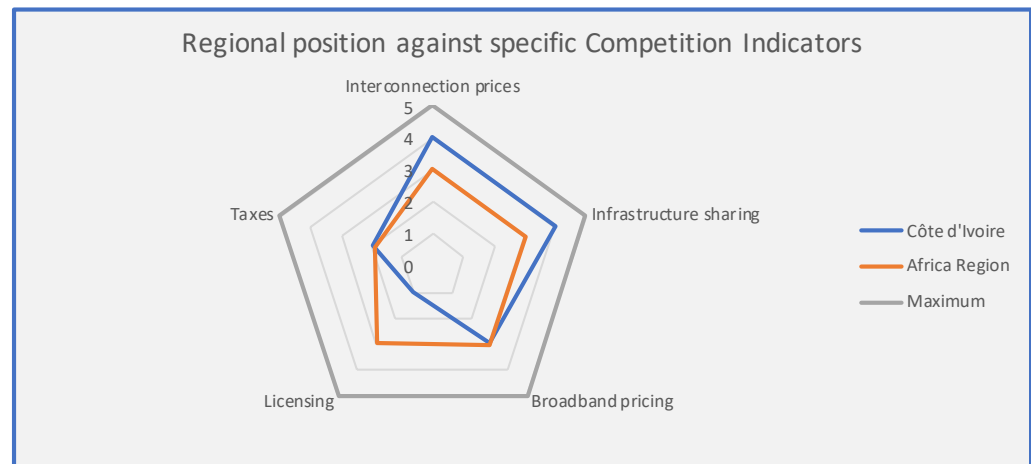
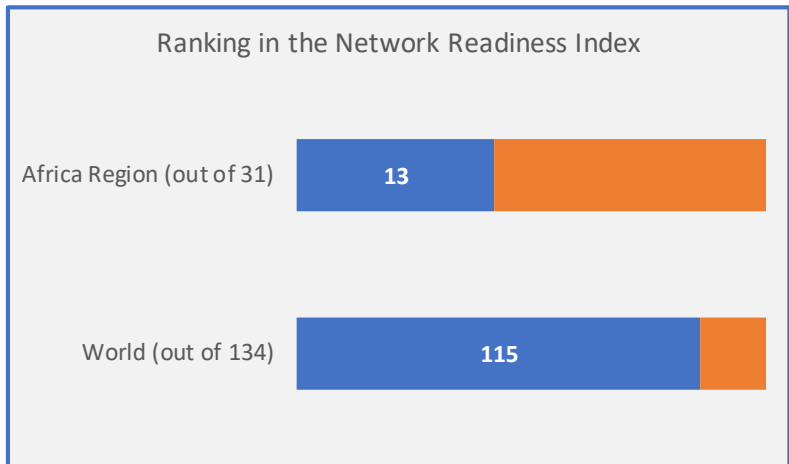
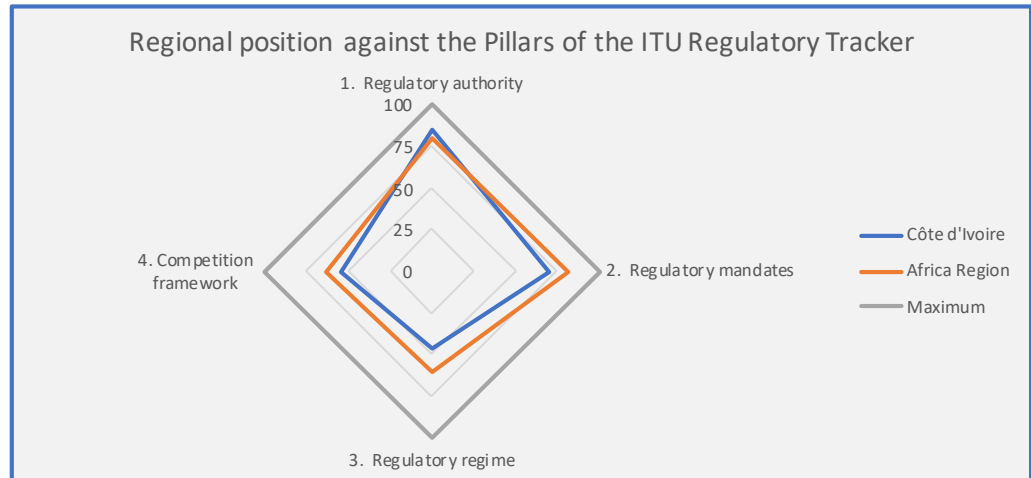
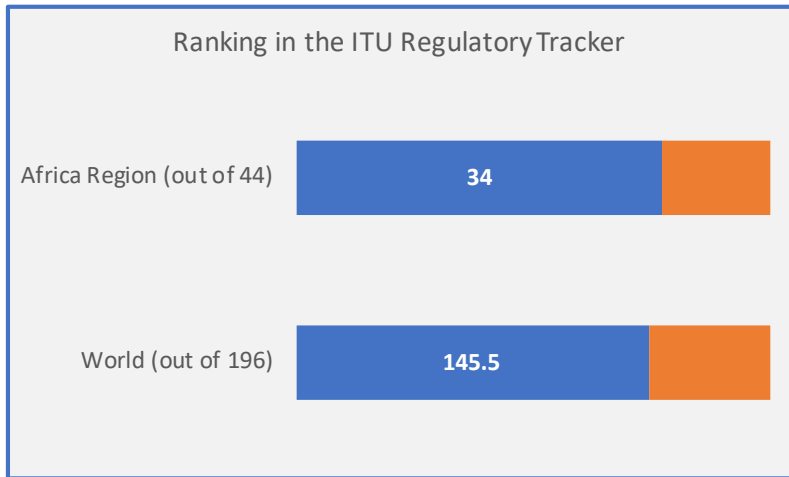


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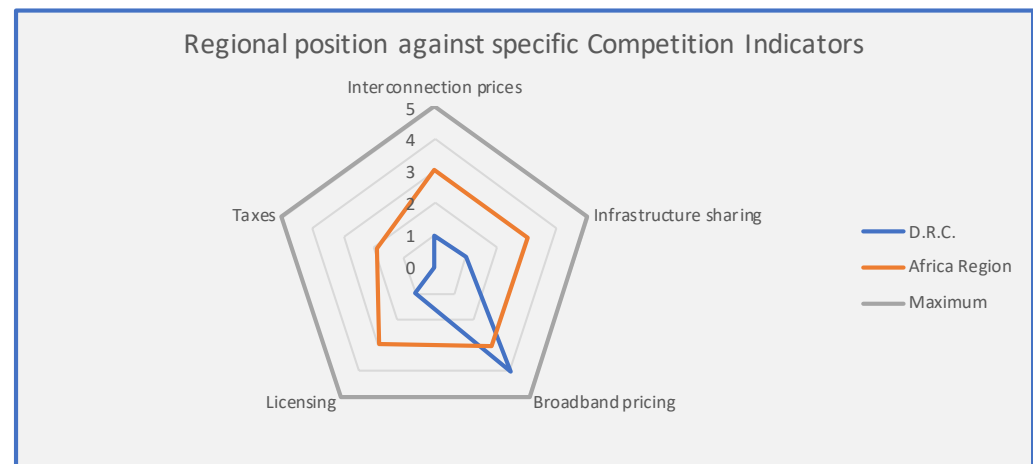
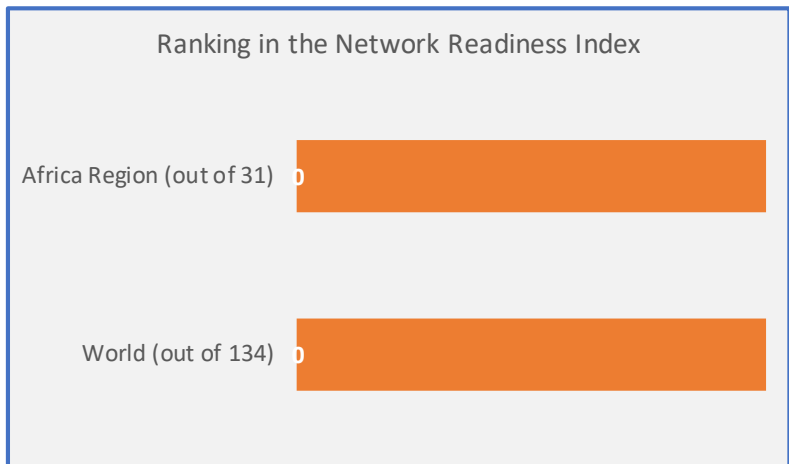
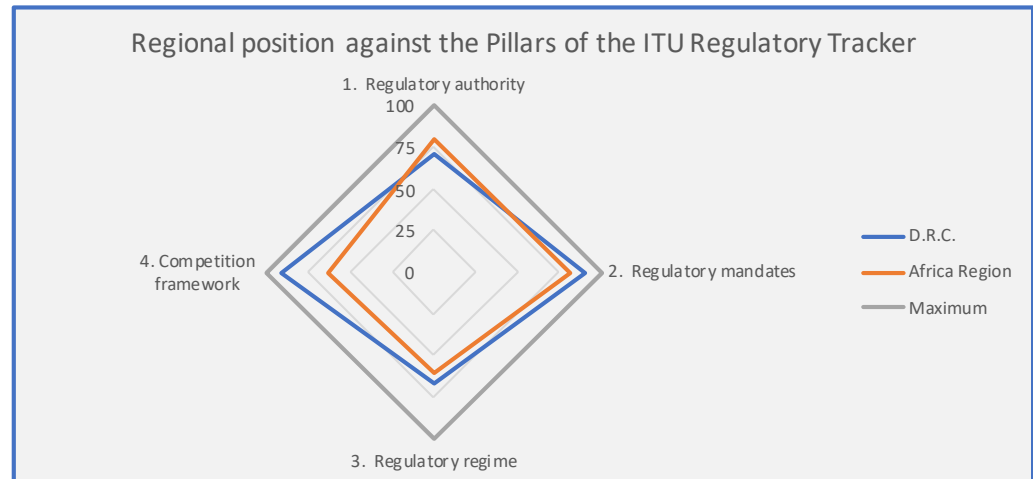
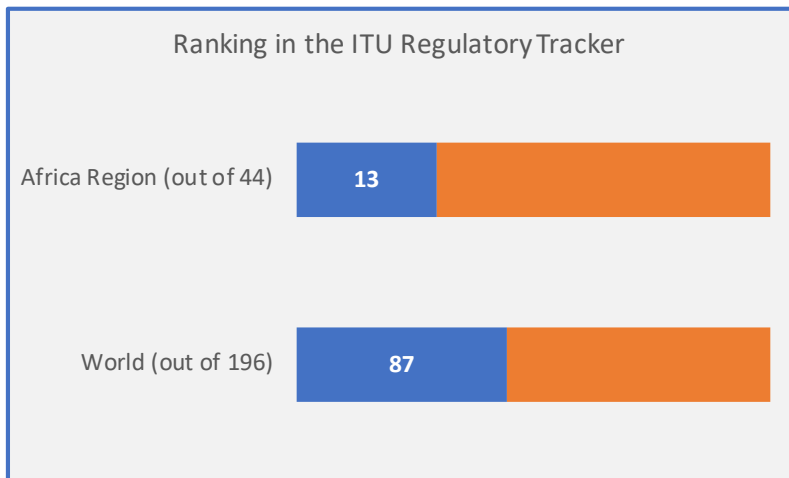




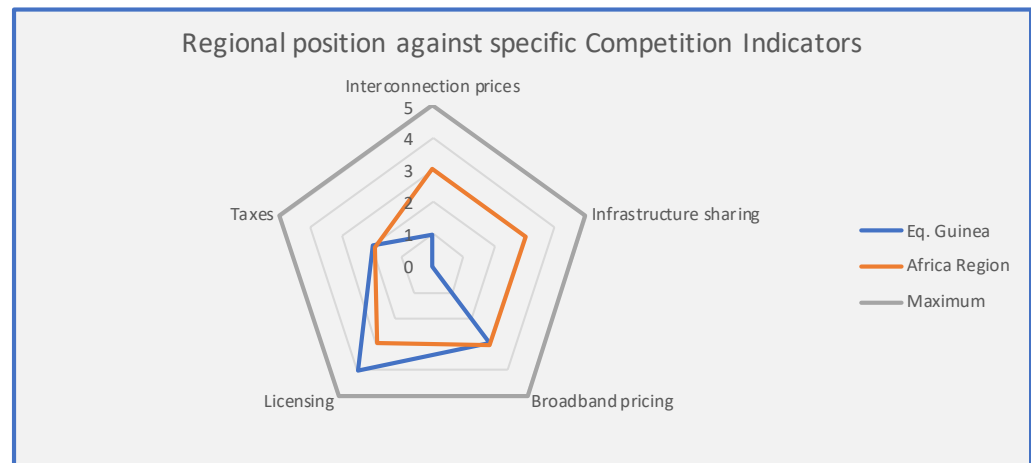
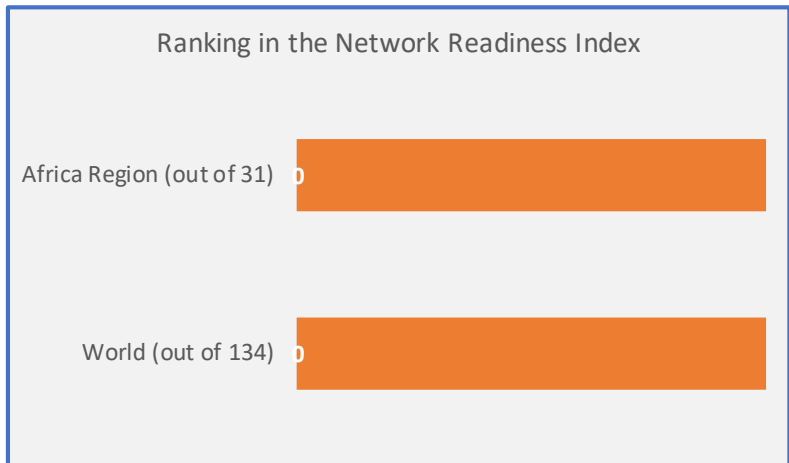
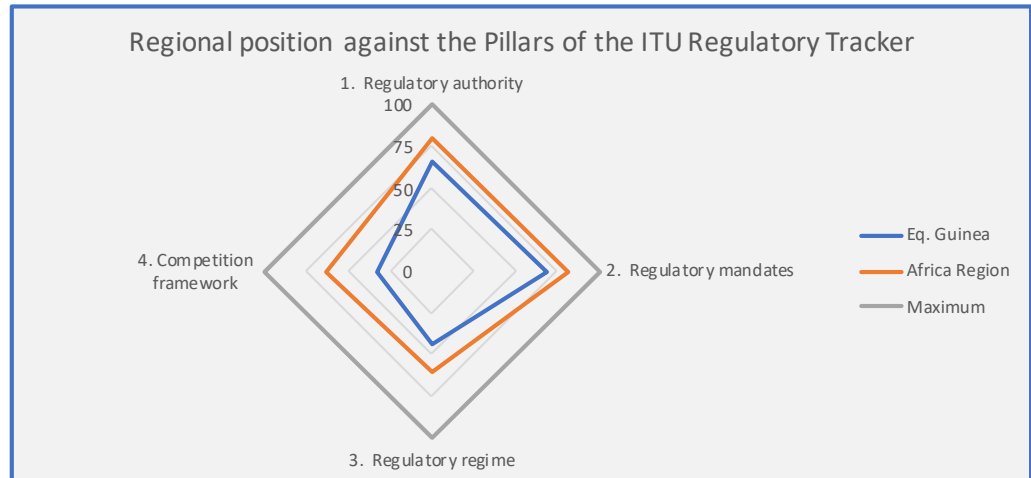
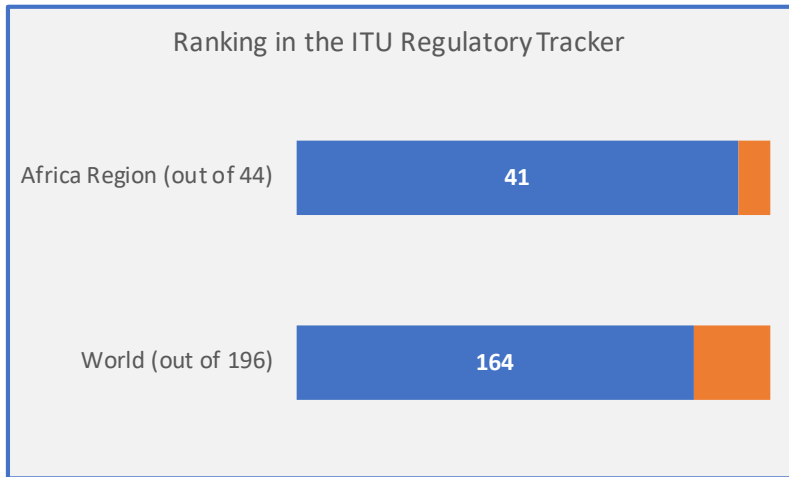
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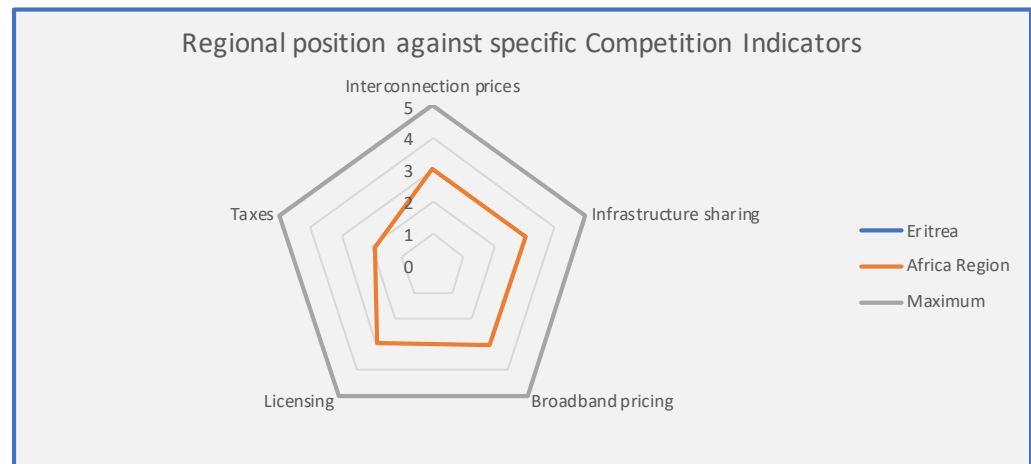
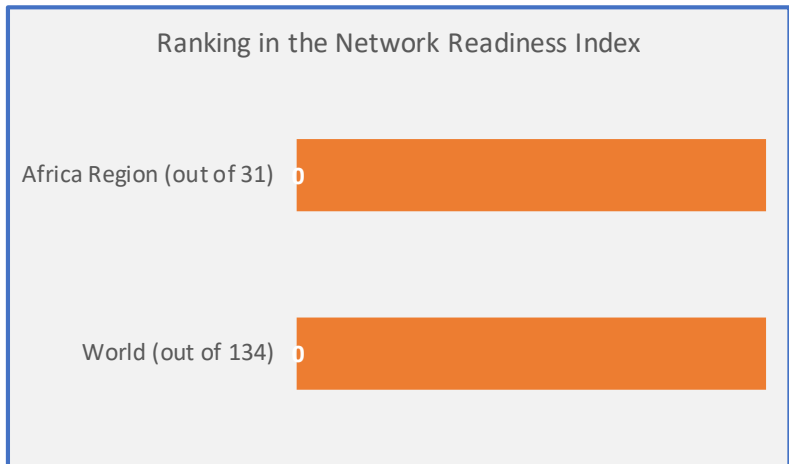
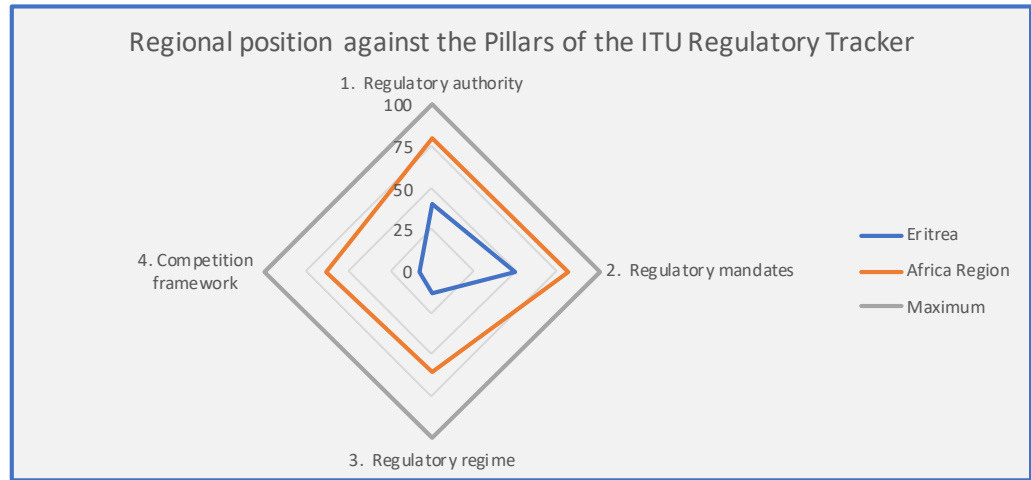
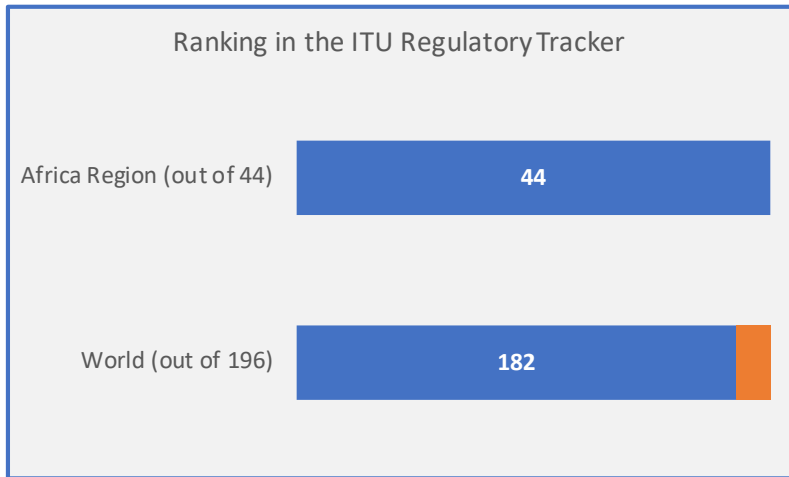
**DEMOCRATIC REPUBLIC OF CONGO**



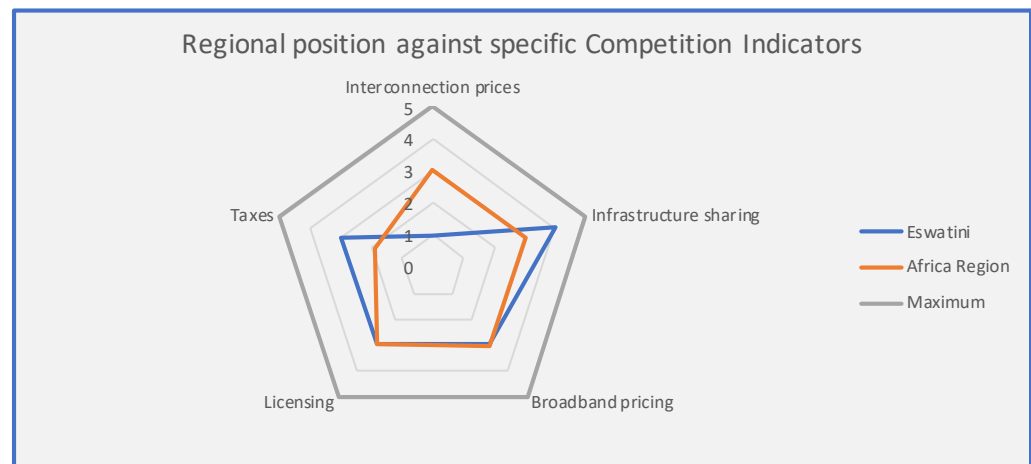
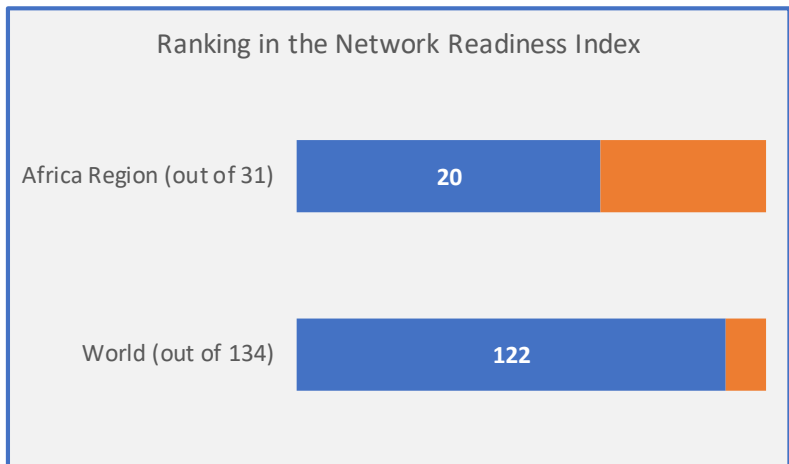
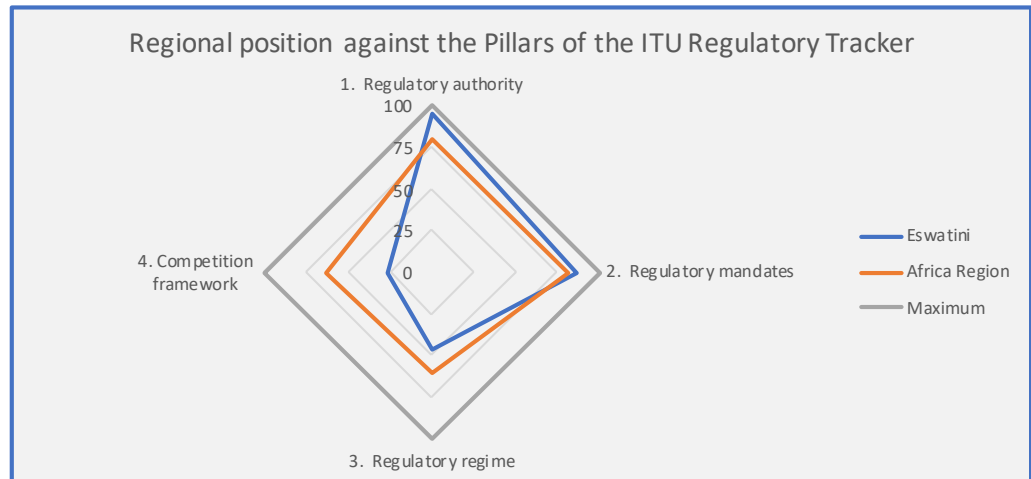
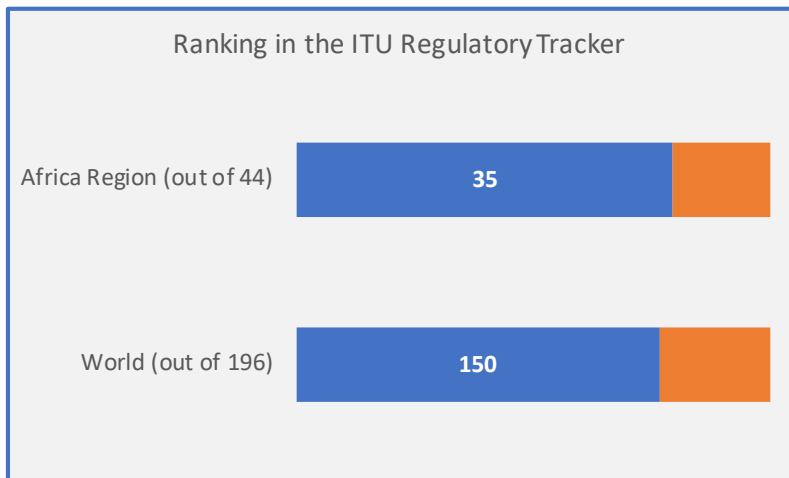
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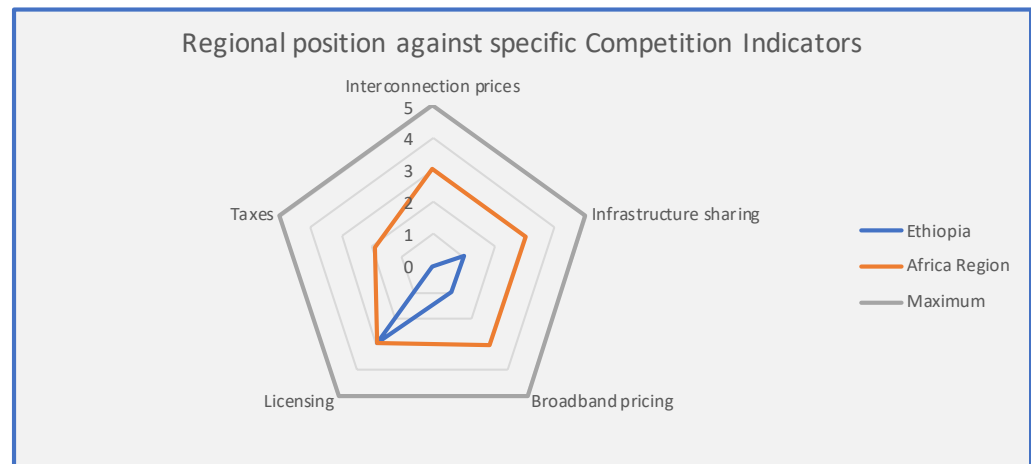
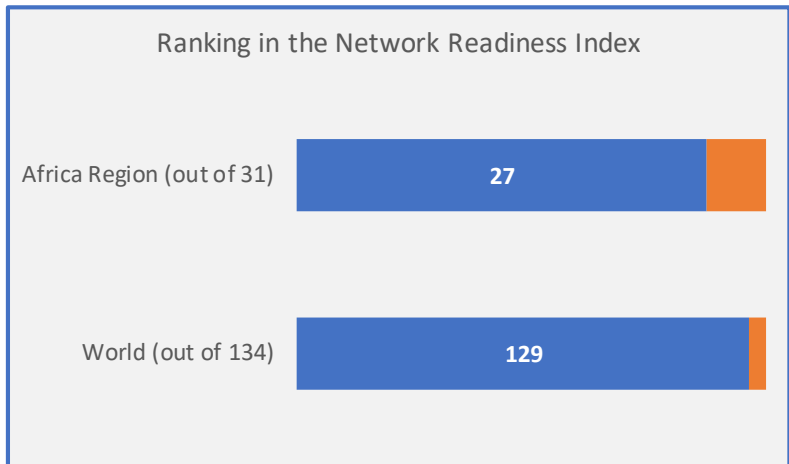
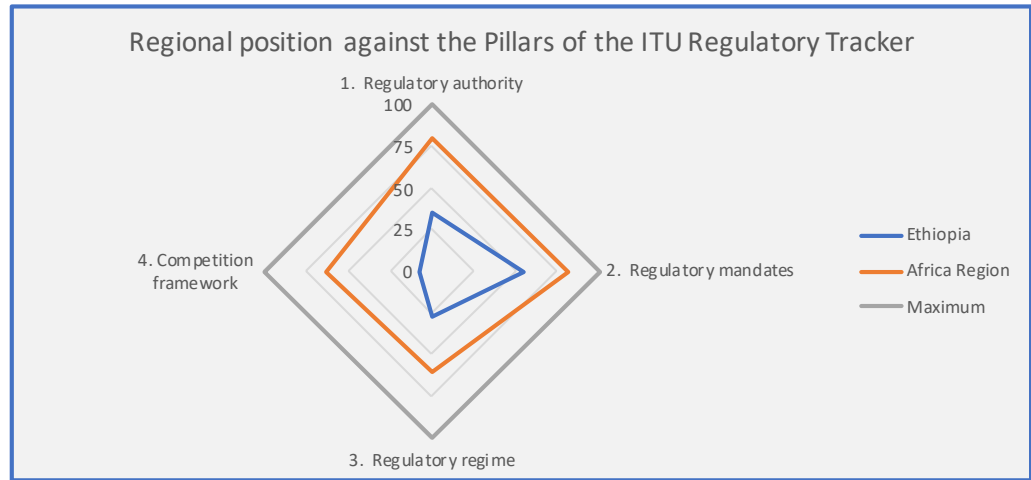
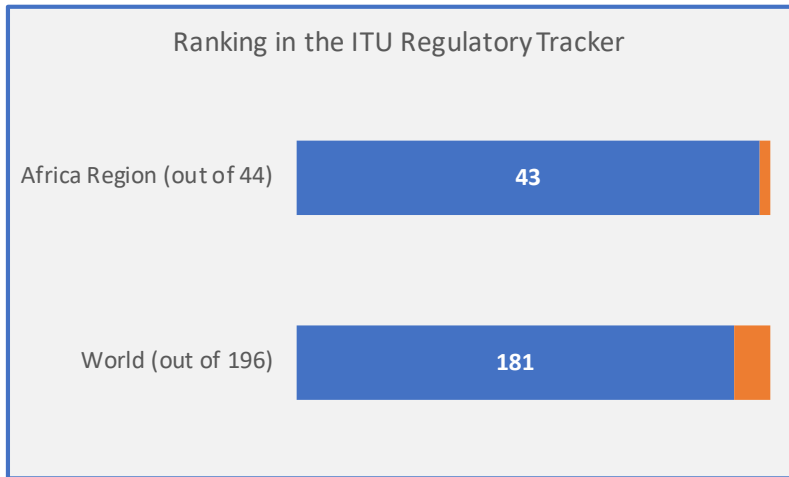
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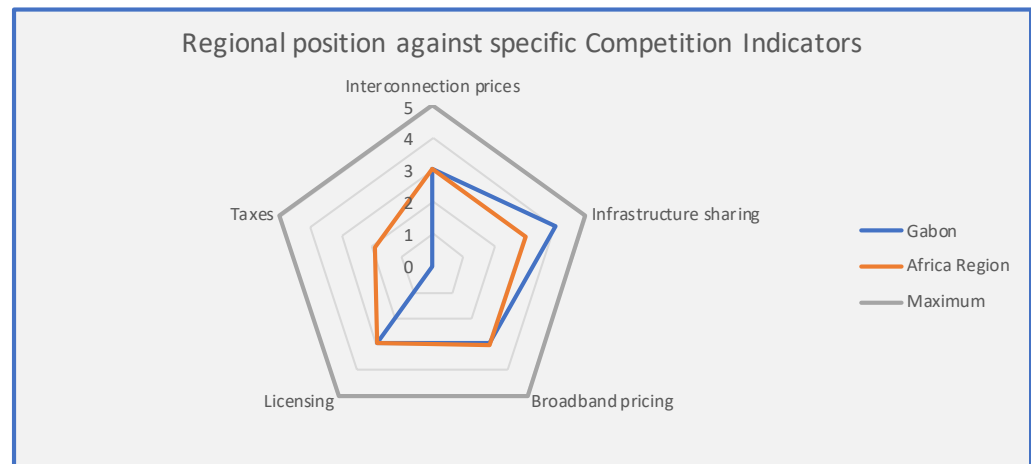
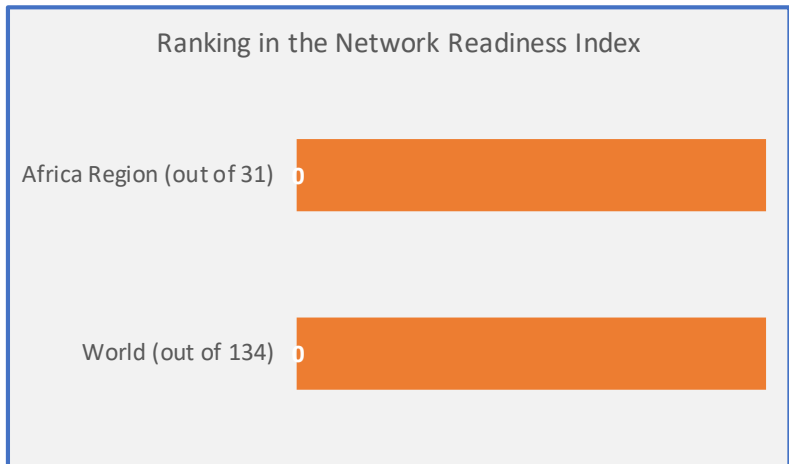
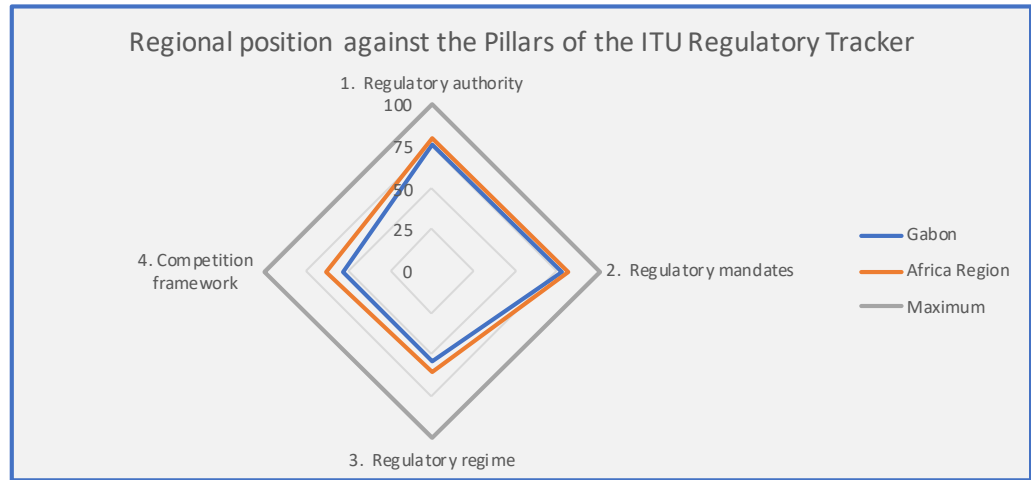
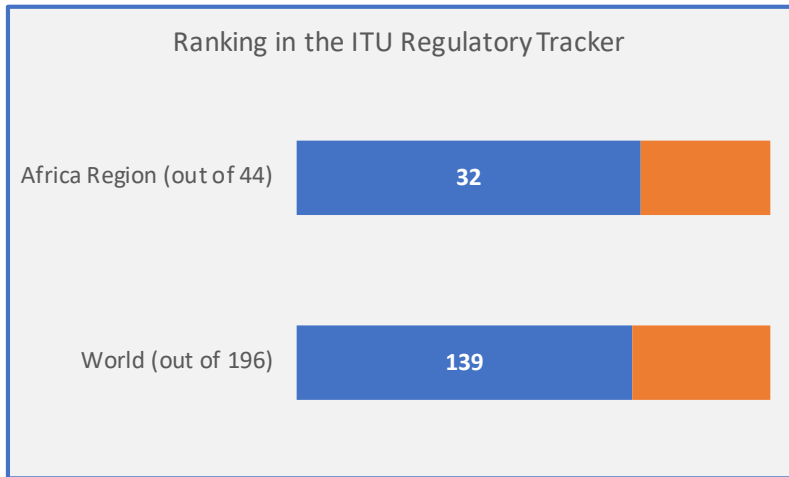
**ESWATINI**



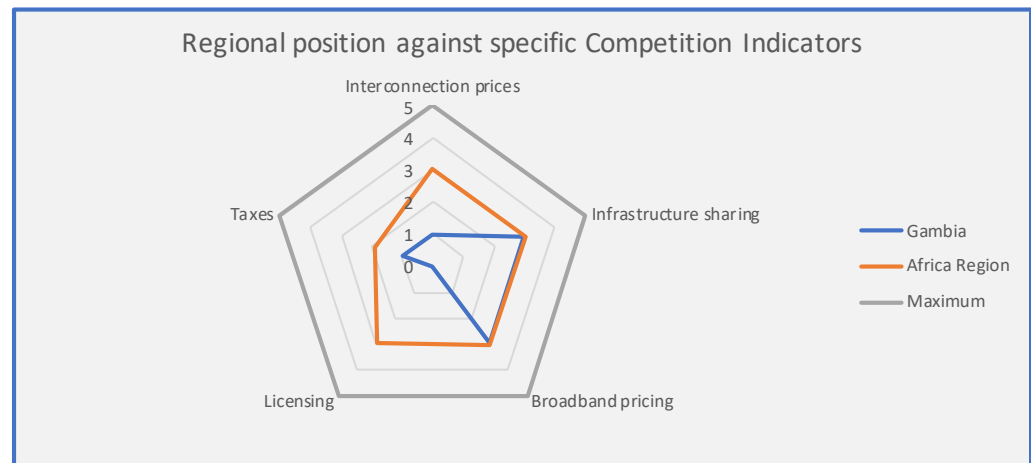
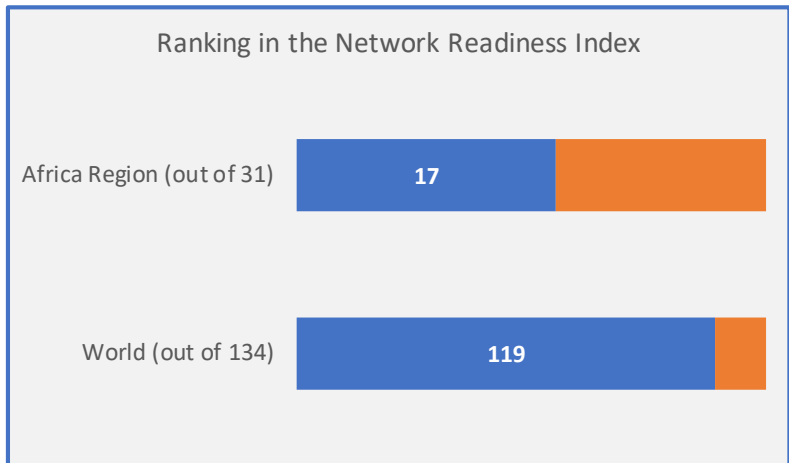
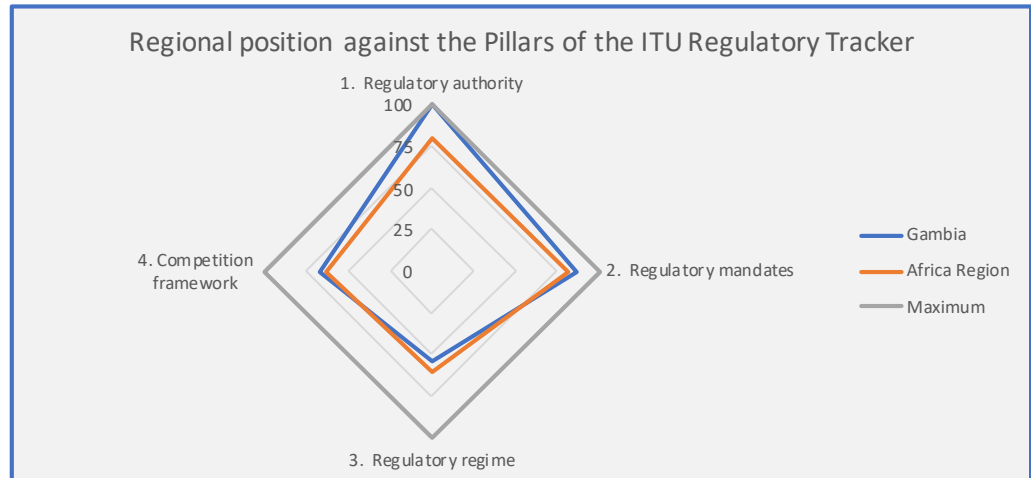
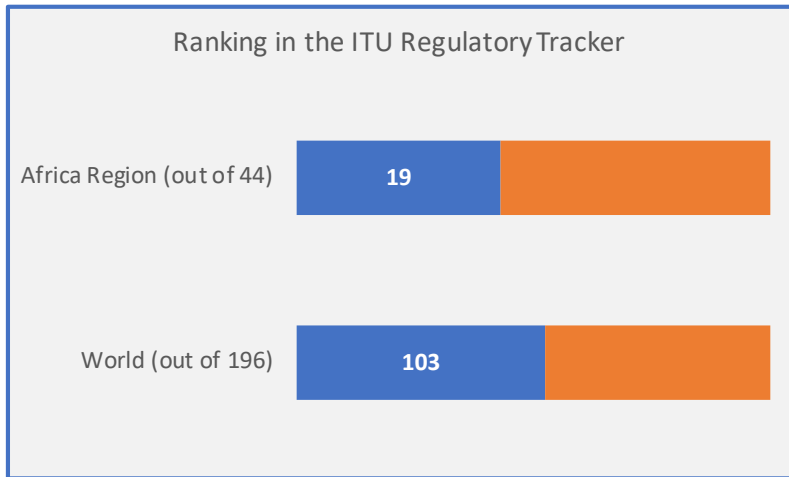
**ETHIOPIA**



**GABON**

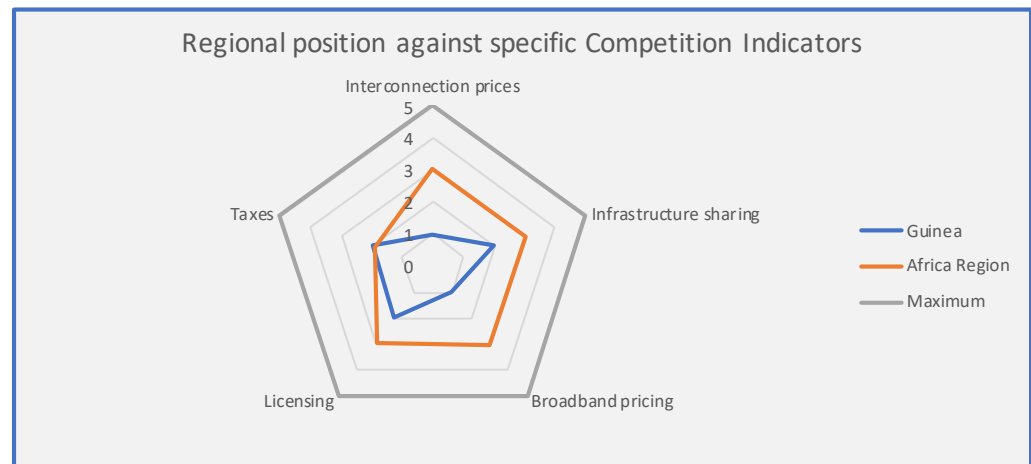
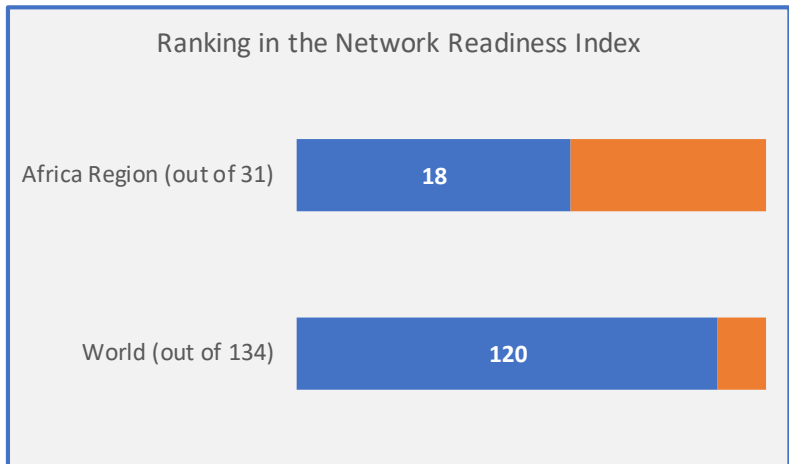
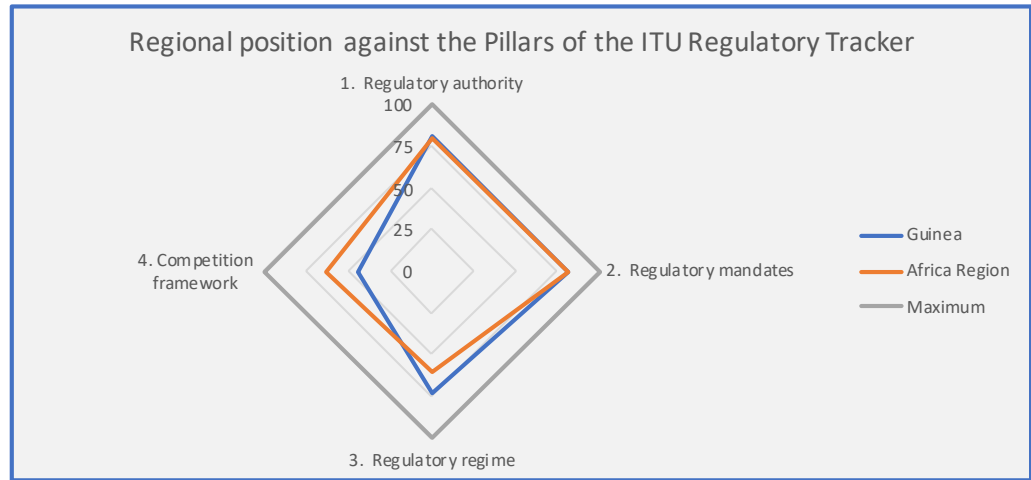
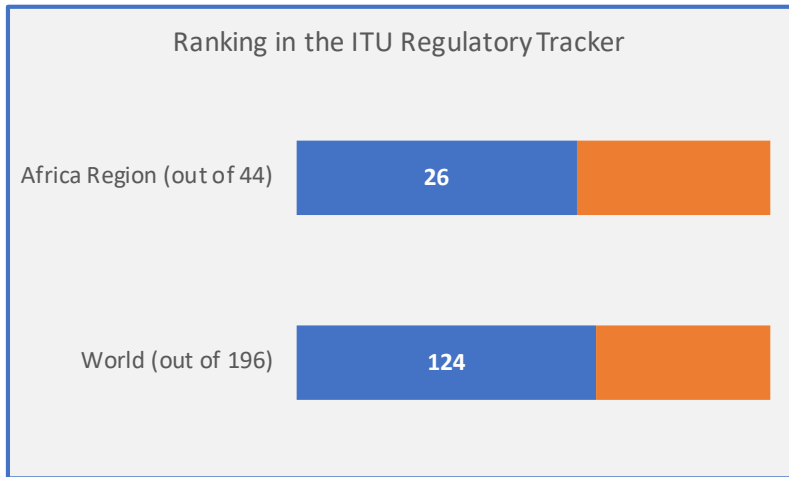


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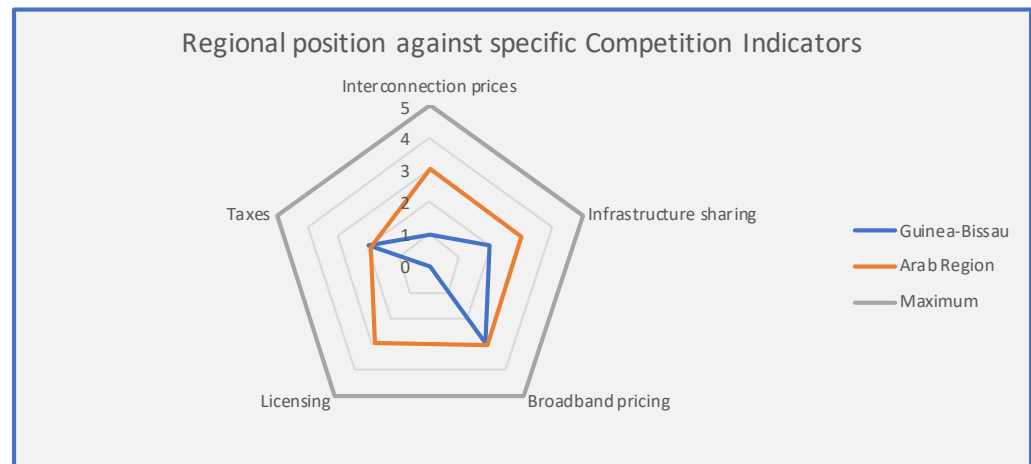
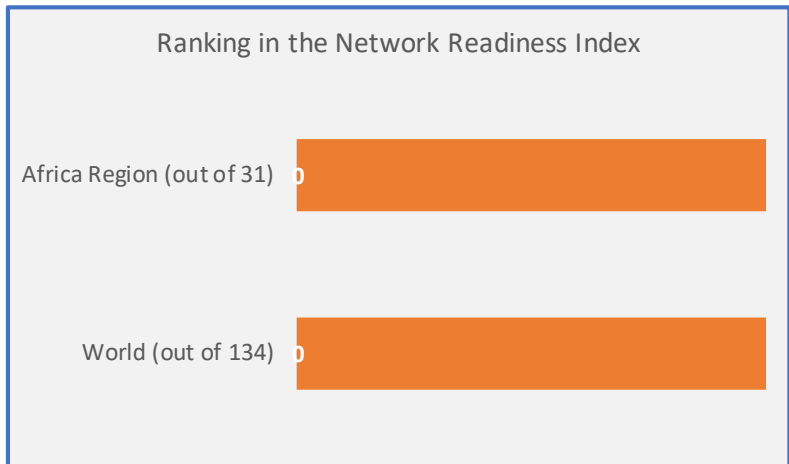
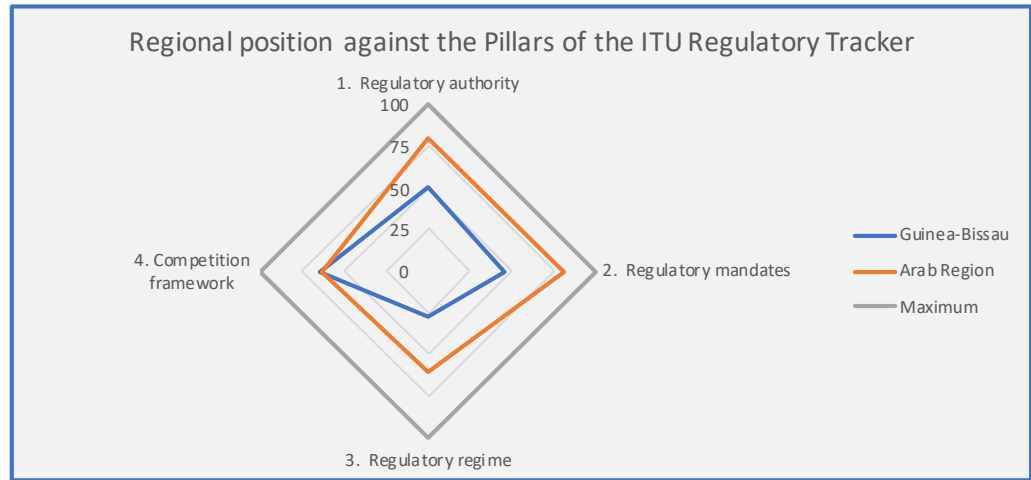
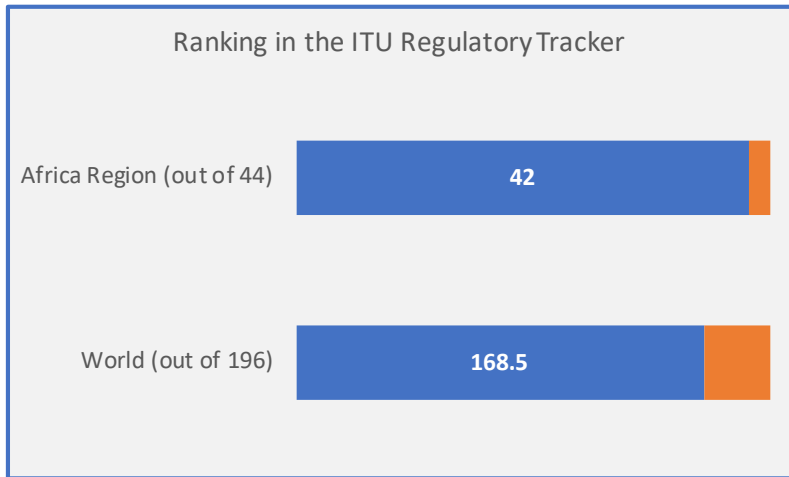




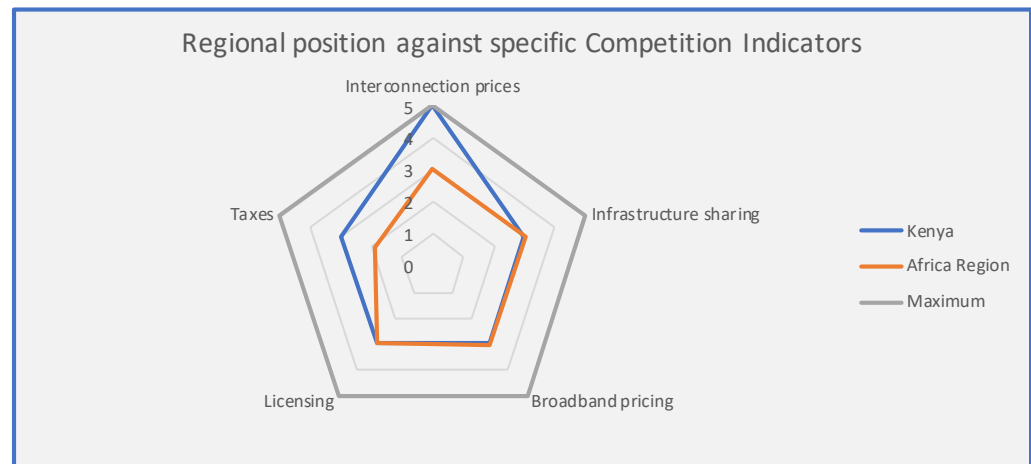
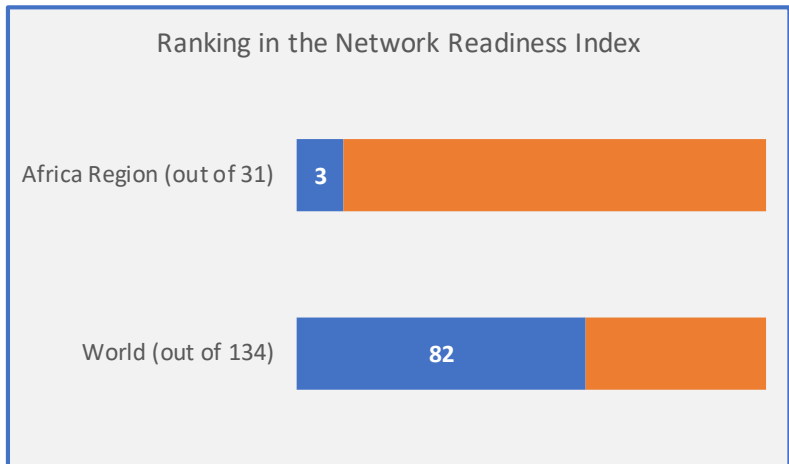
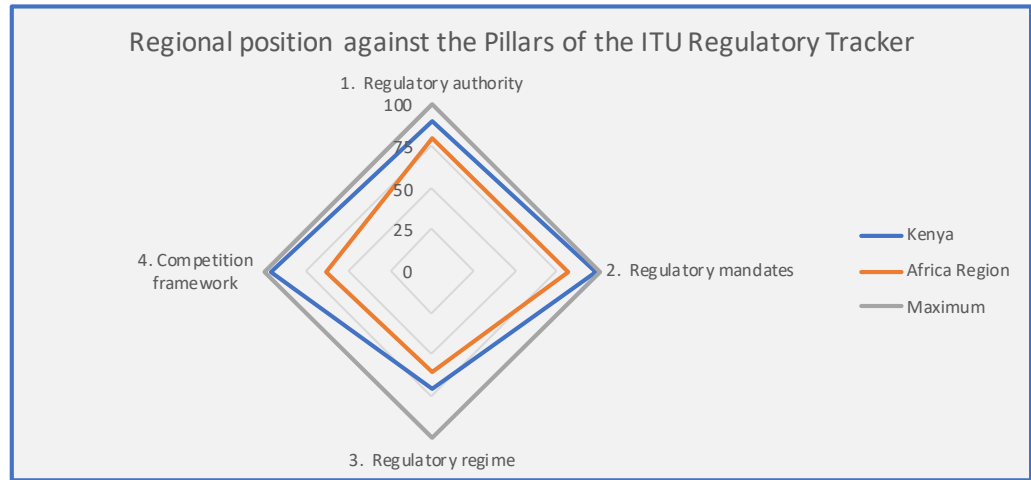
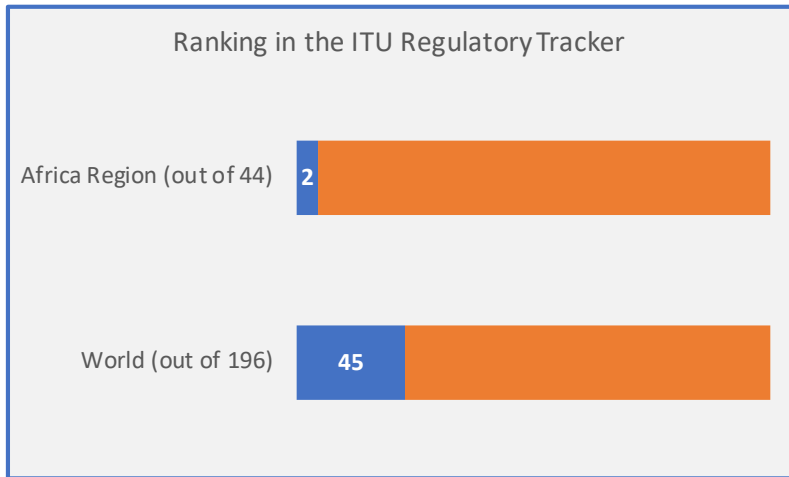
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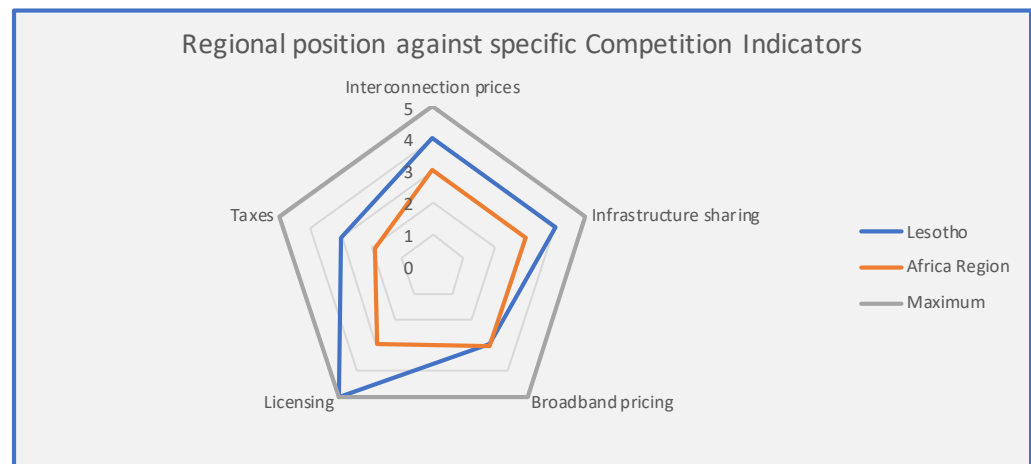
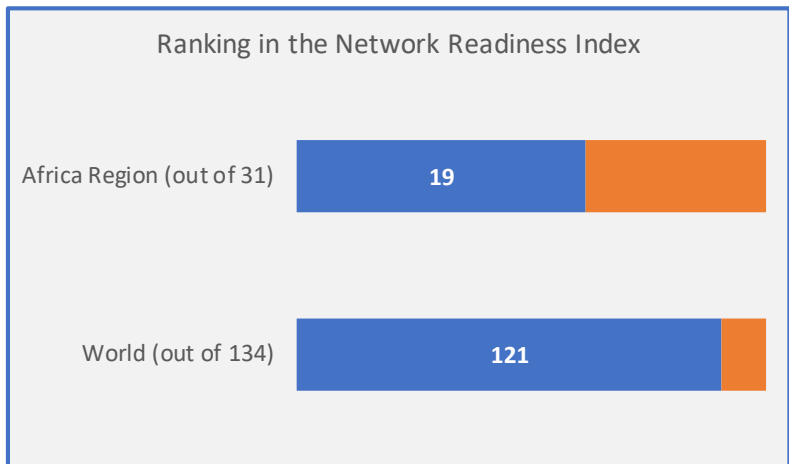
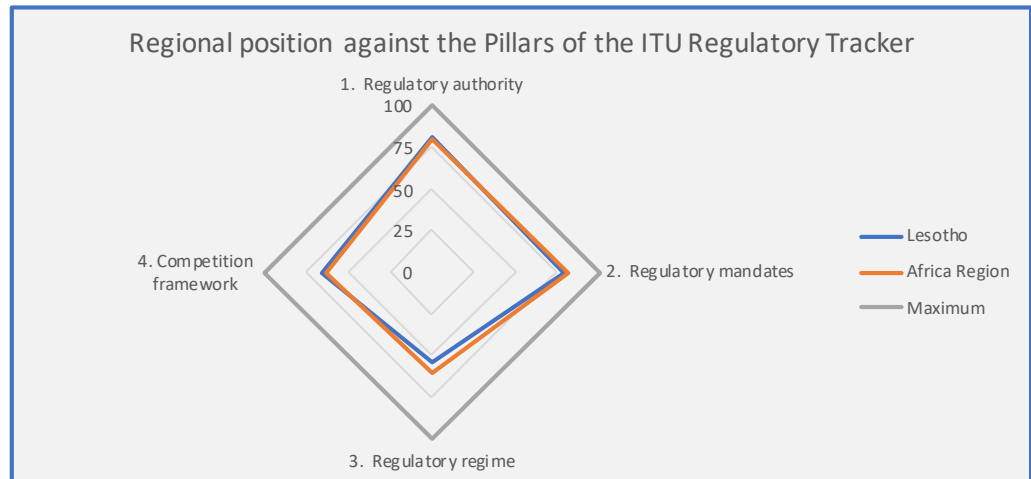
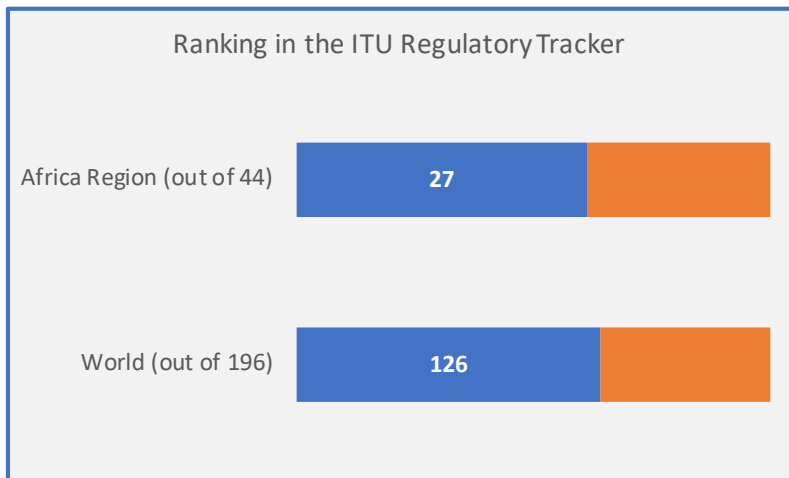
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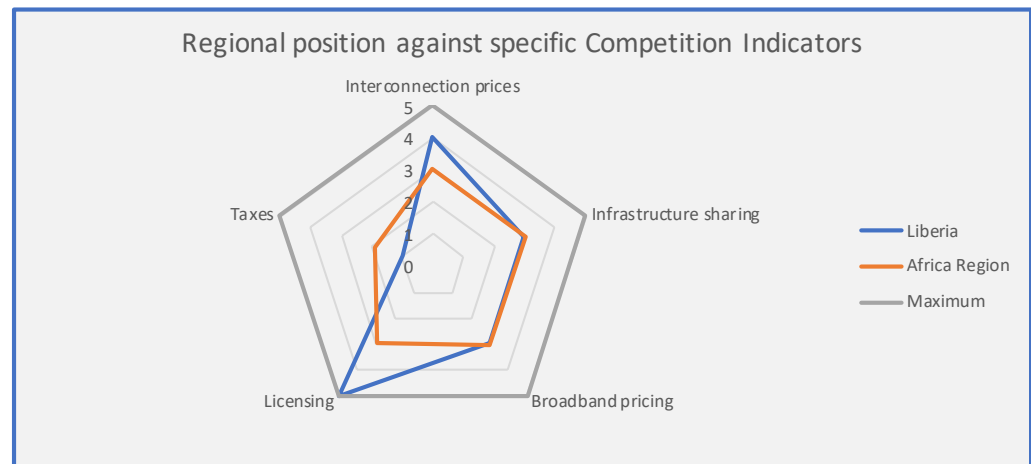
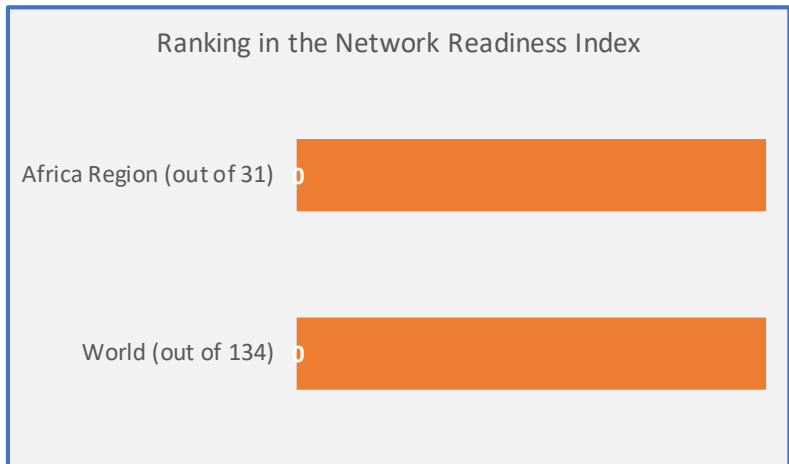
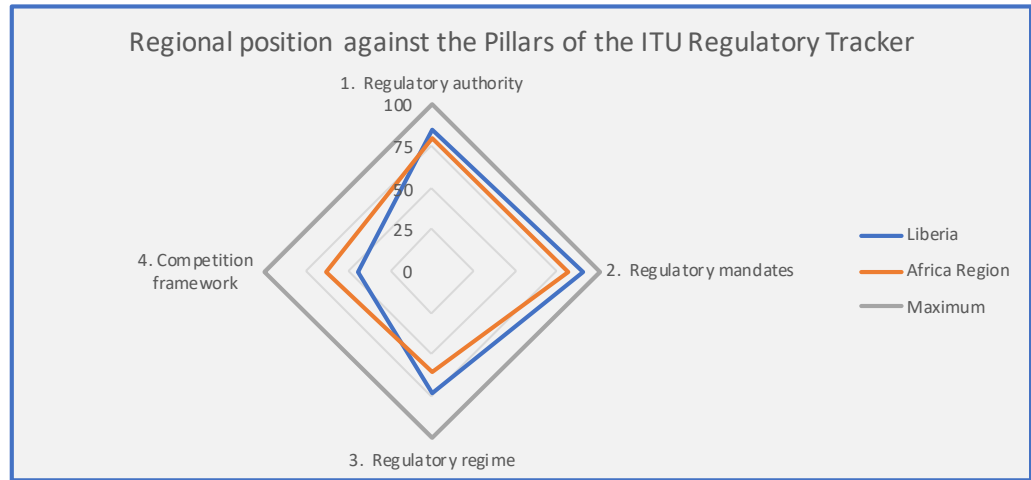
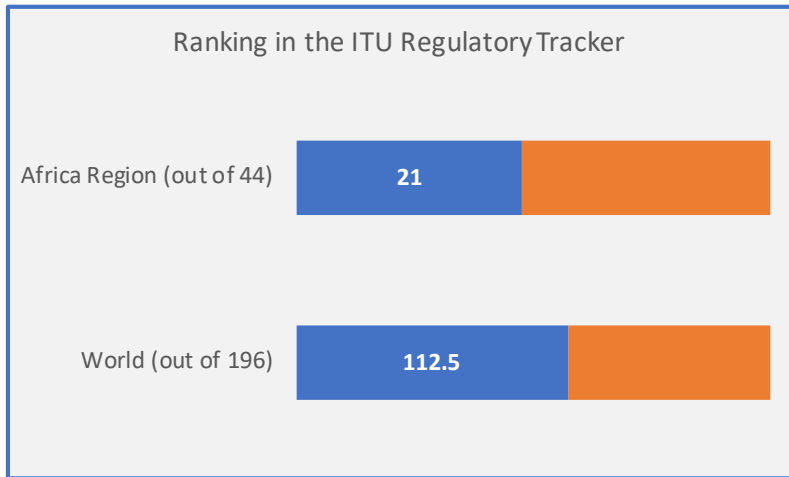
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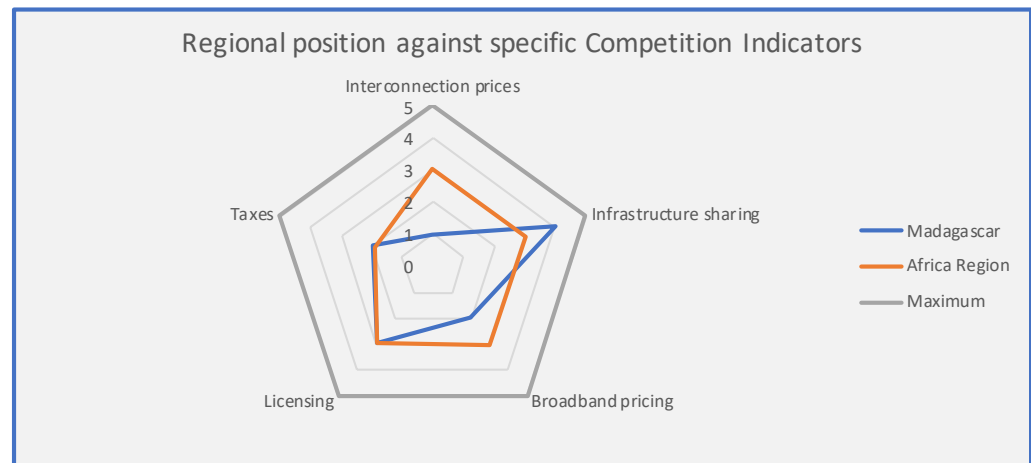
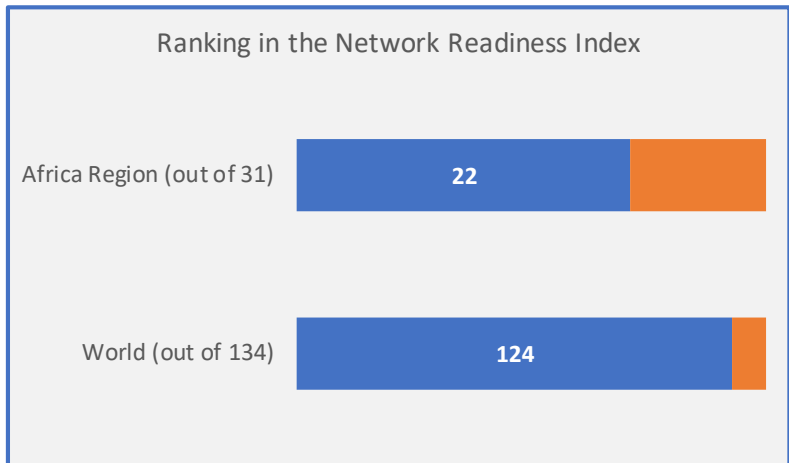
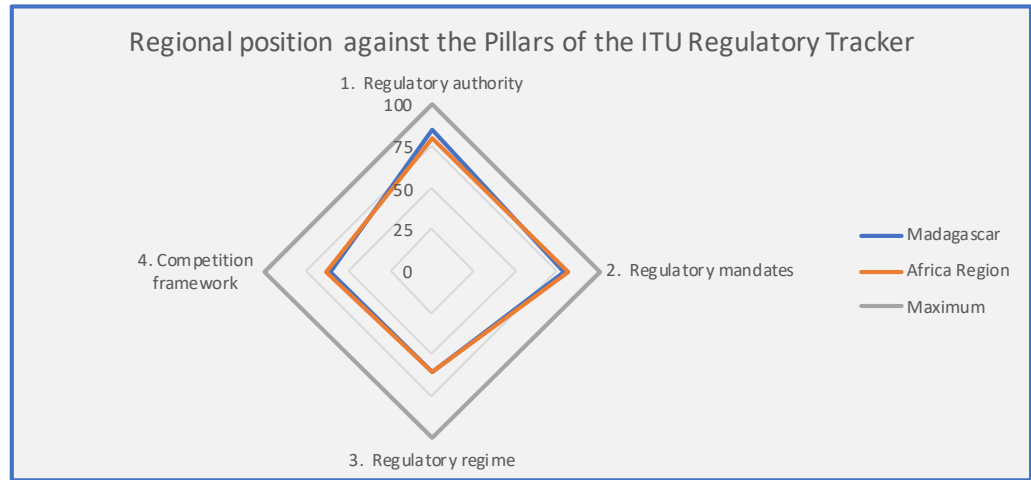
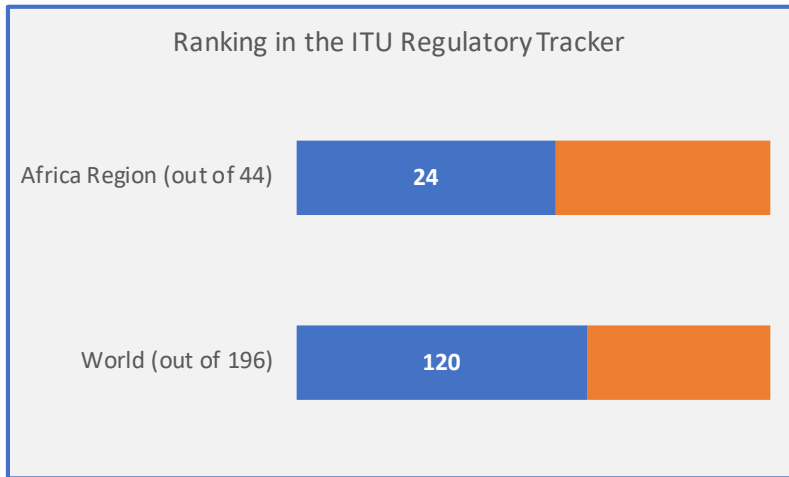
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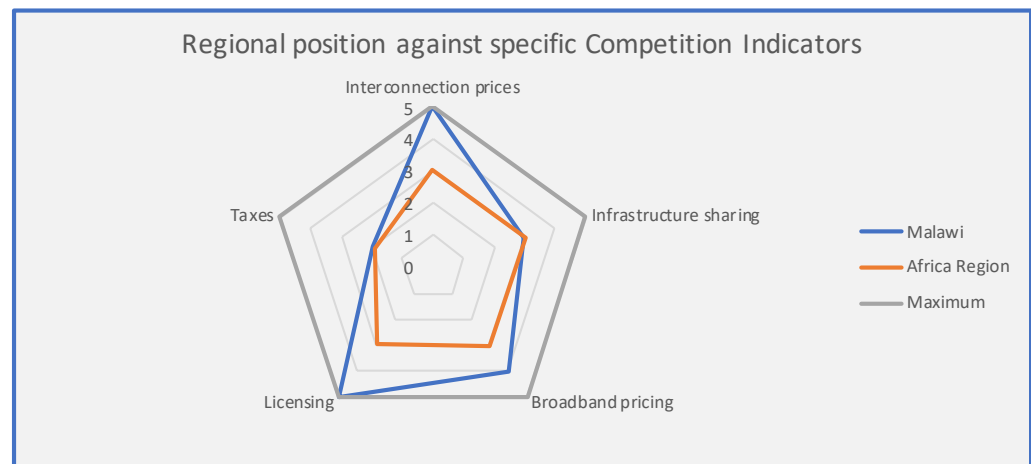
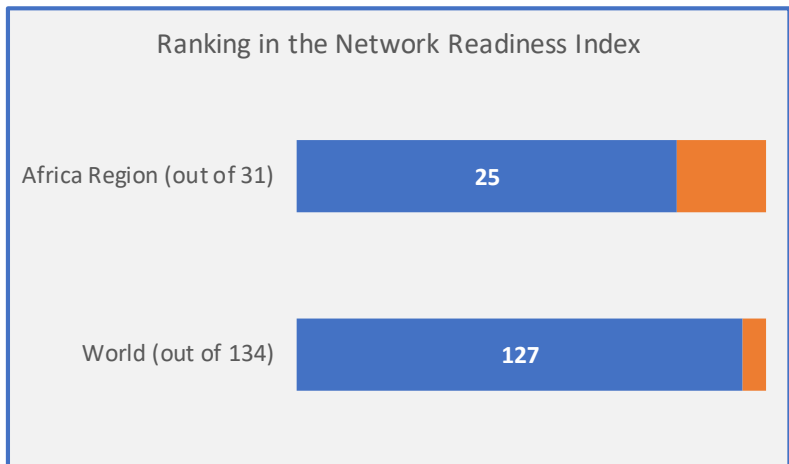
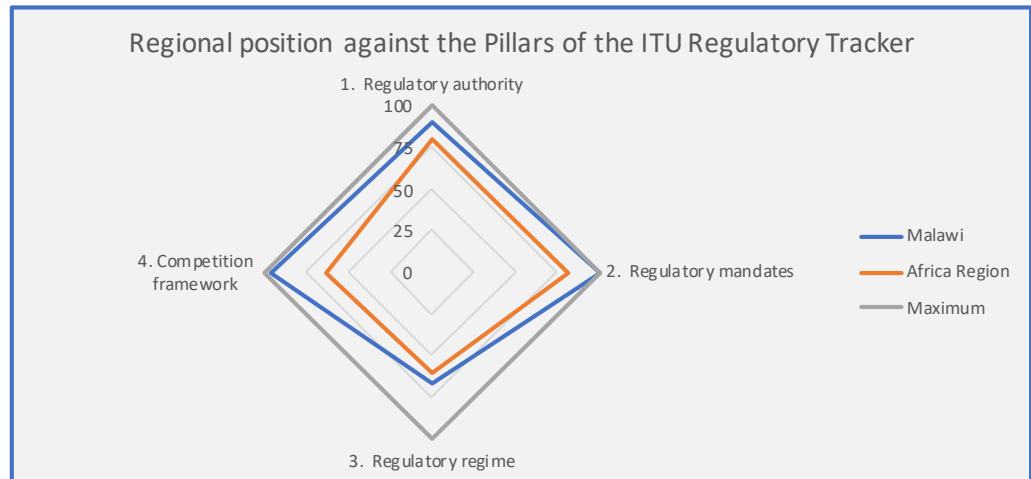
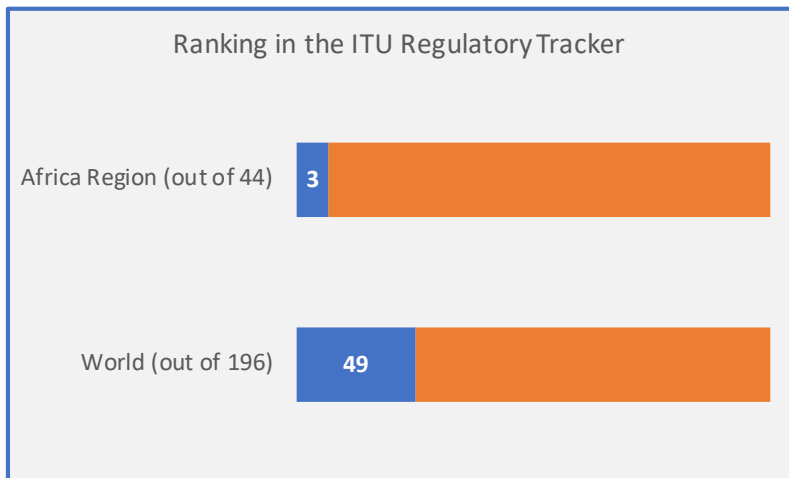
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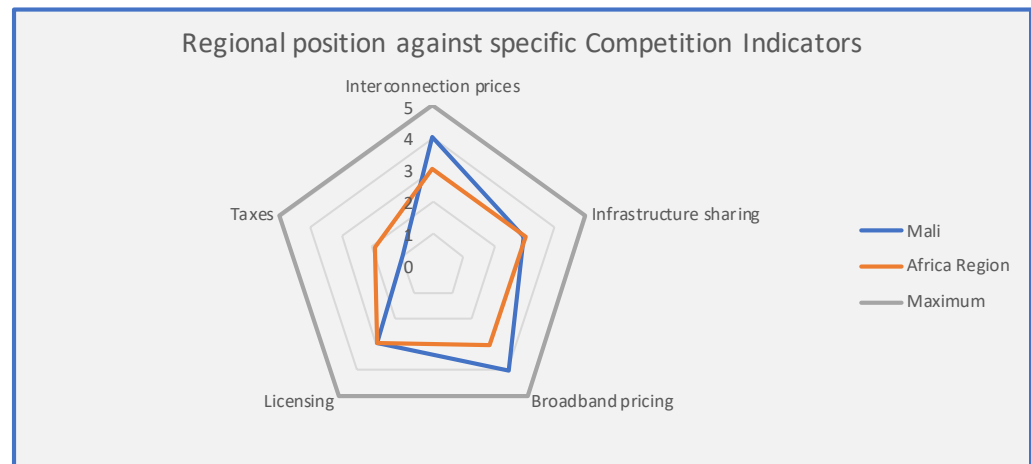
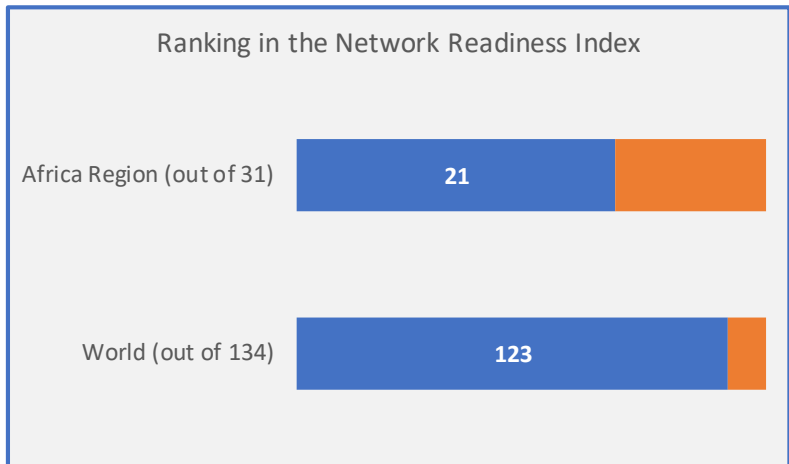
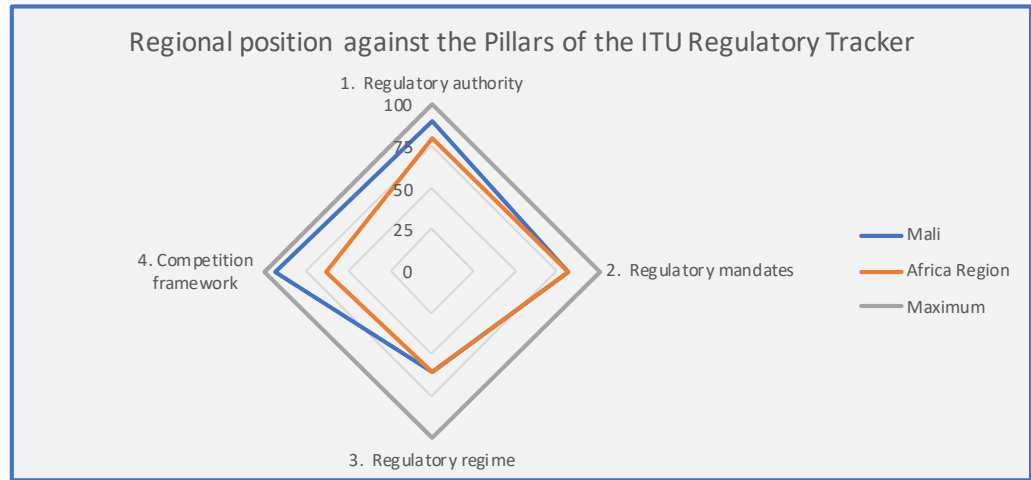
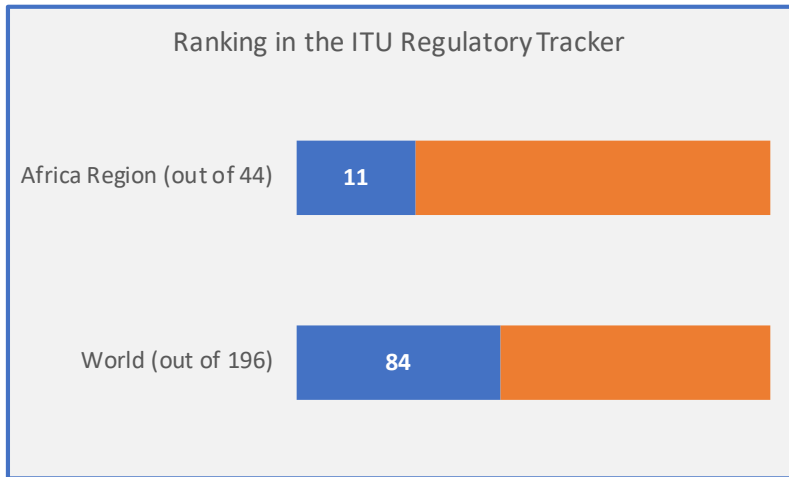
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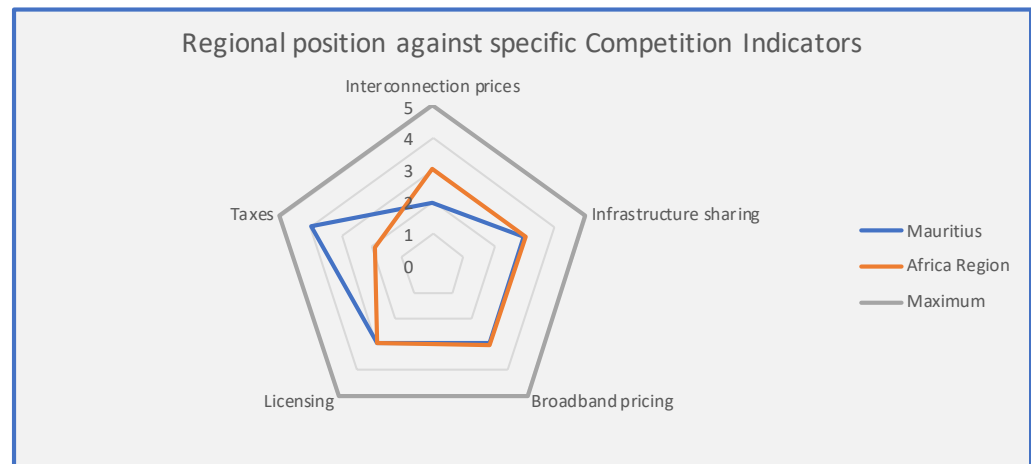
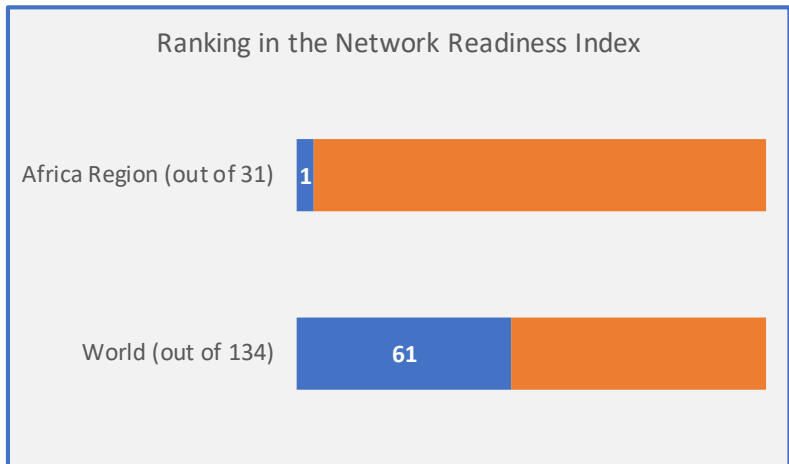
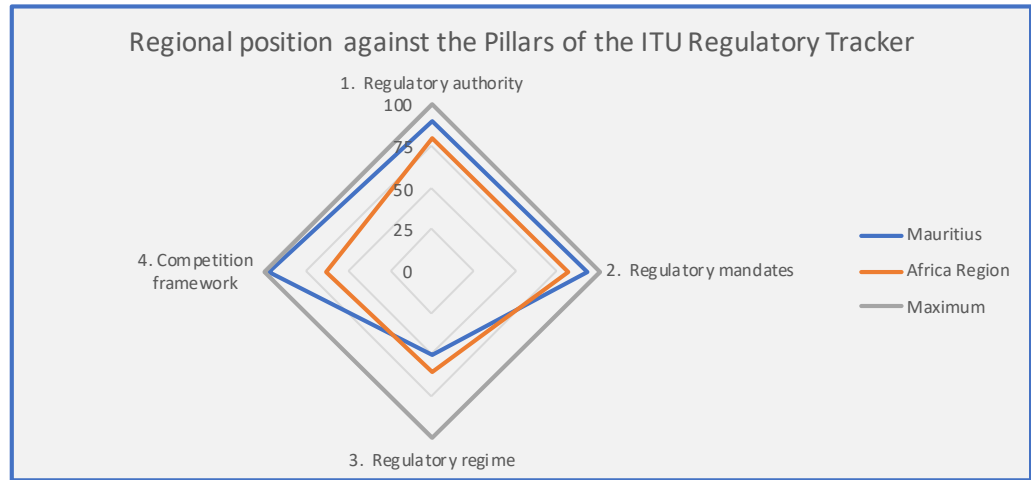
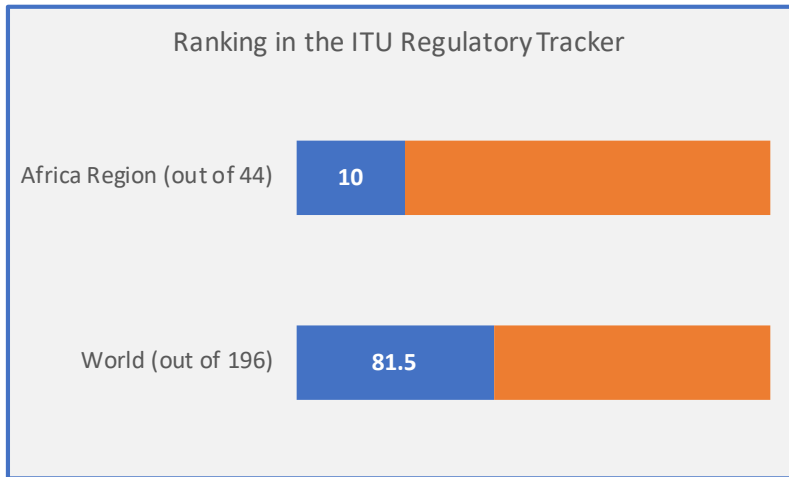


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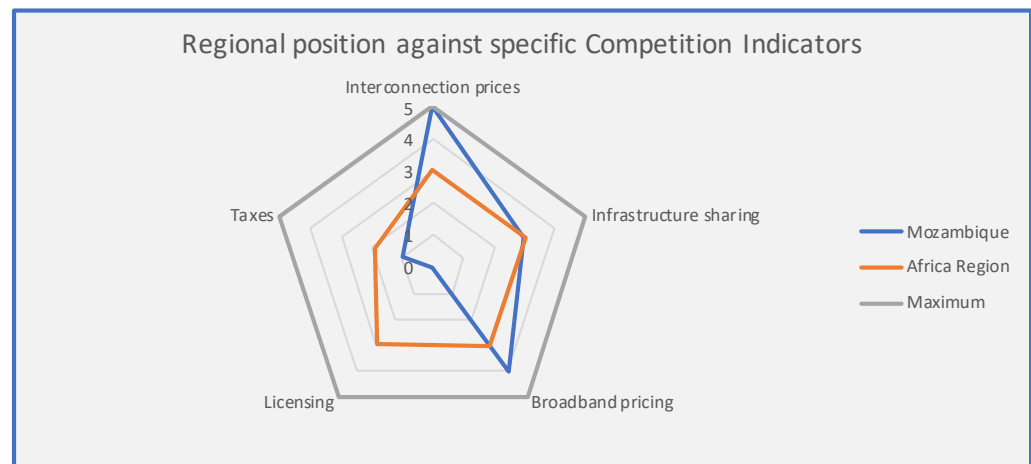
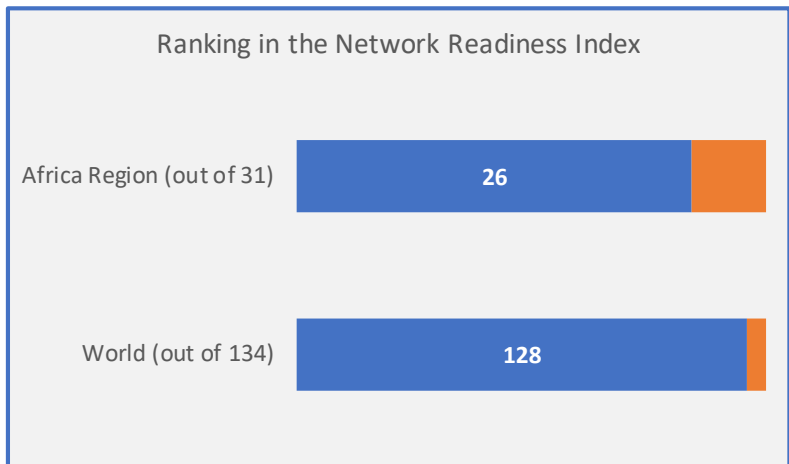
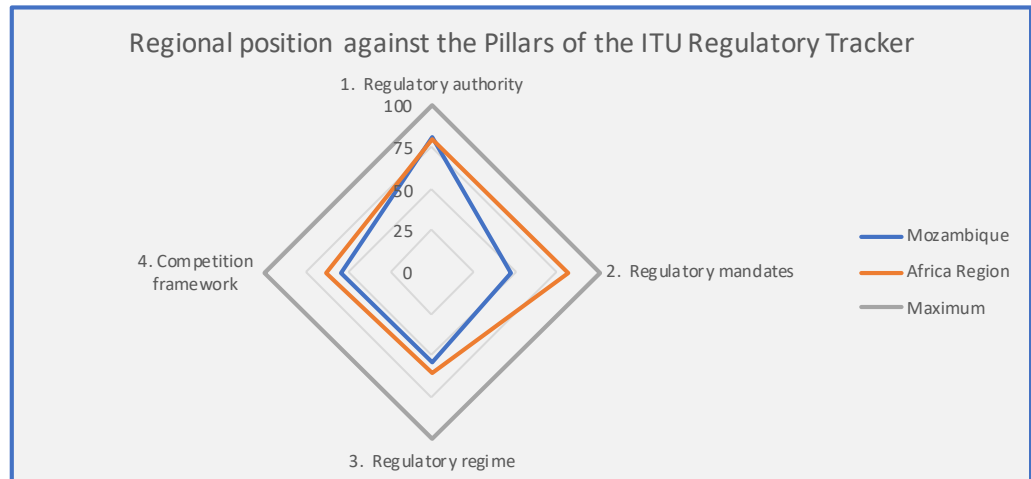
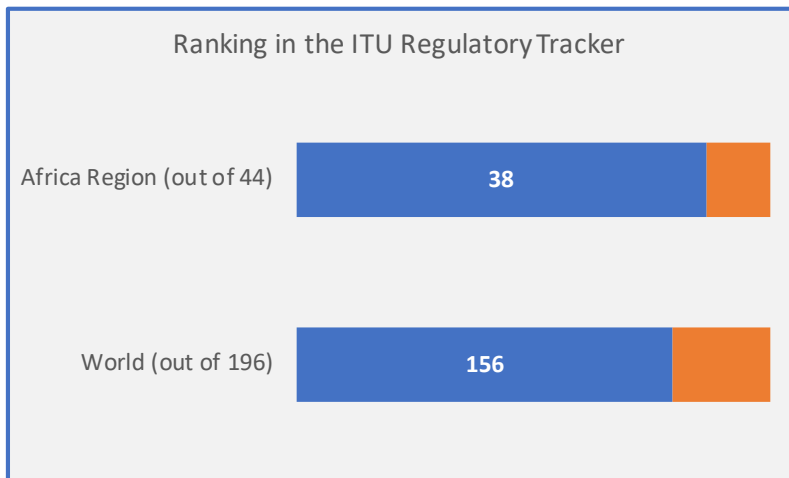




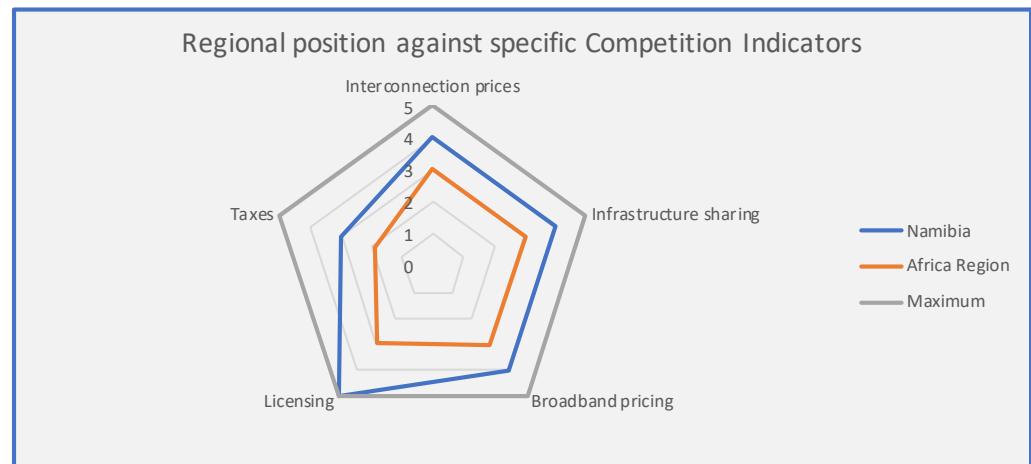
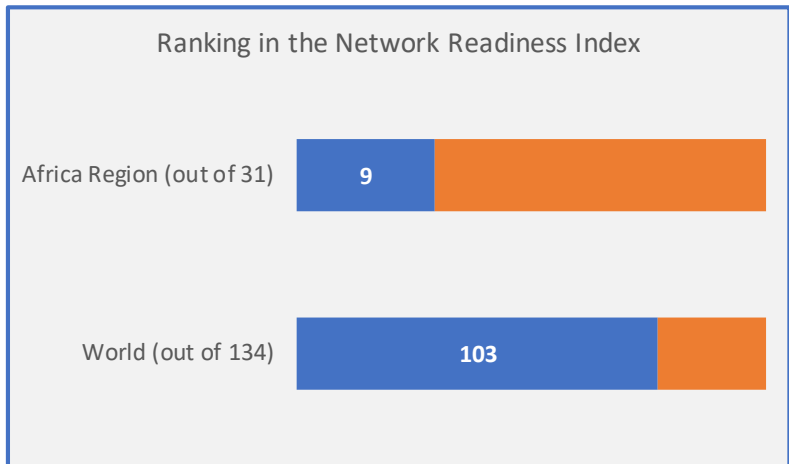
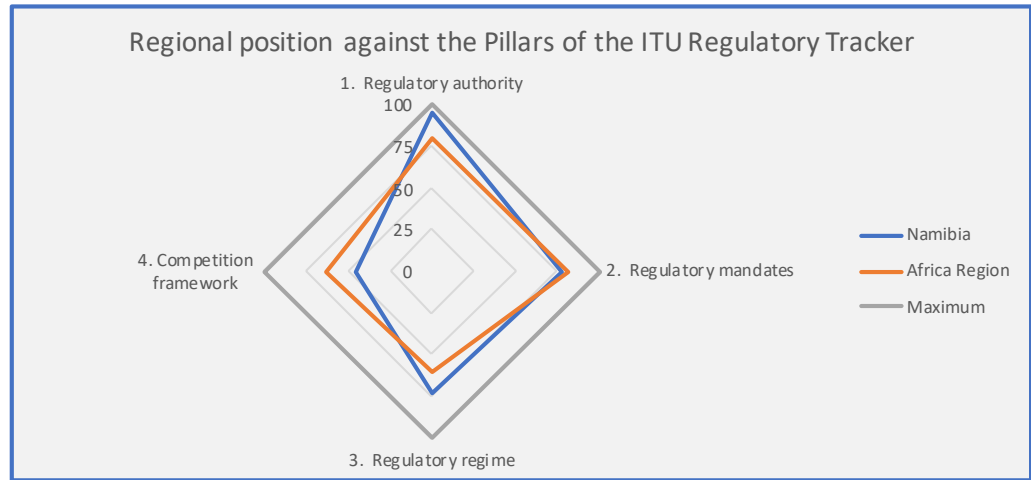
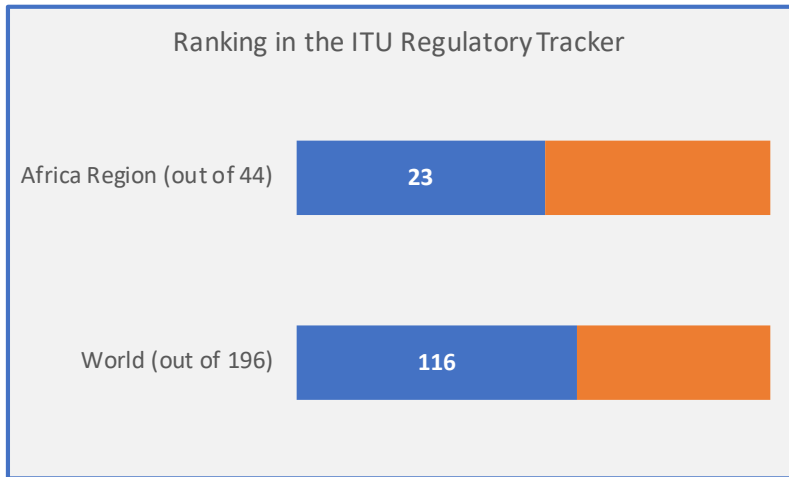
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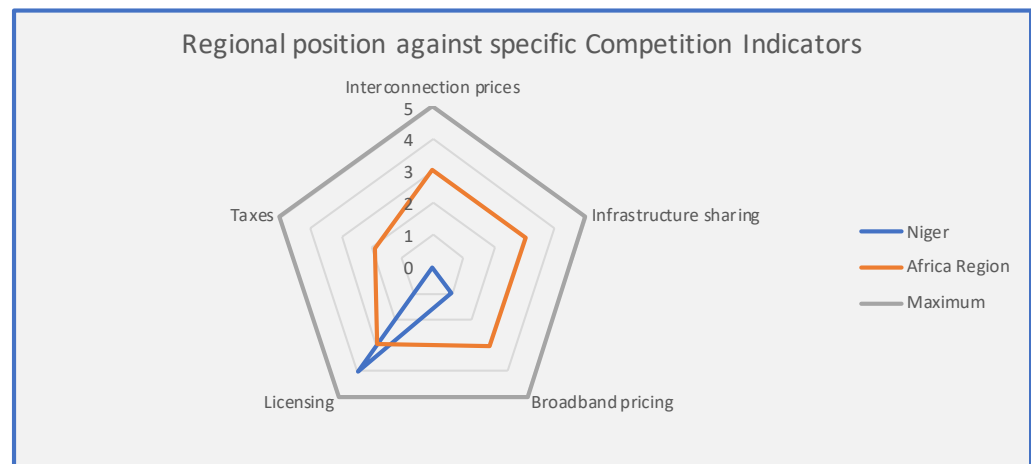
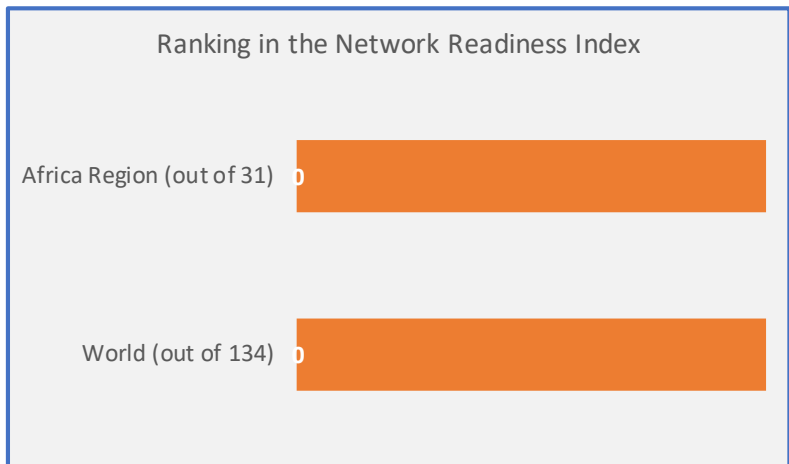
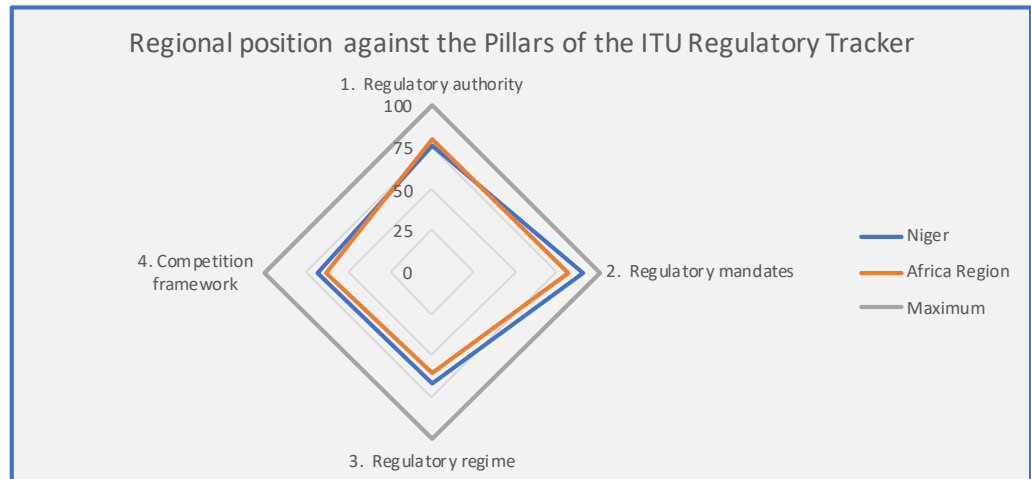
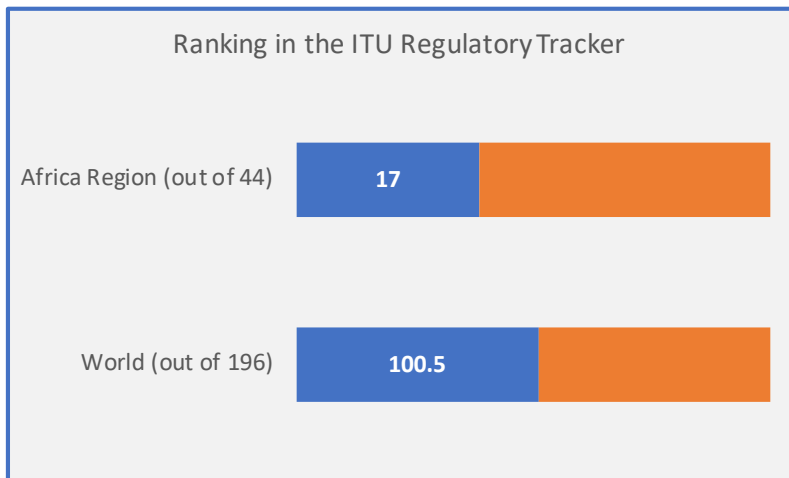
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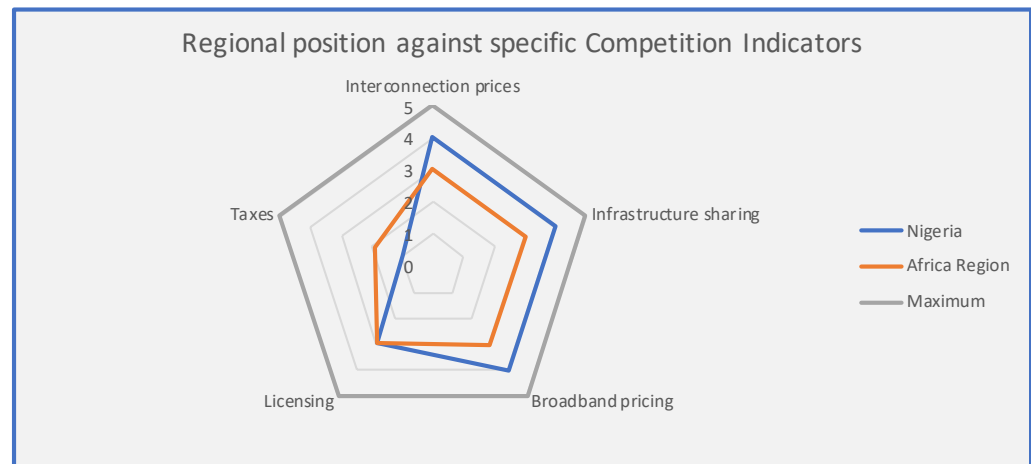
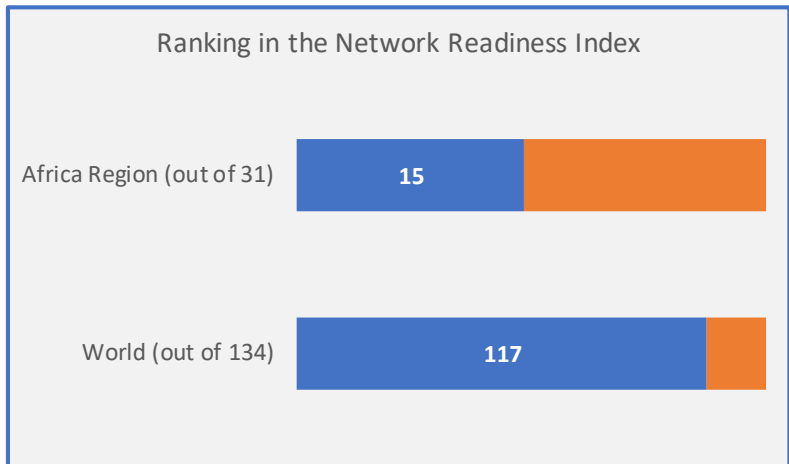
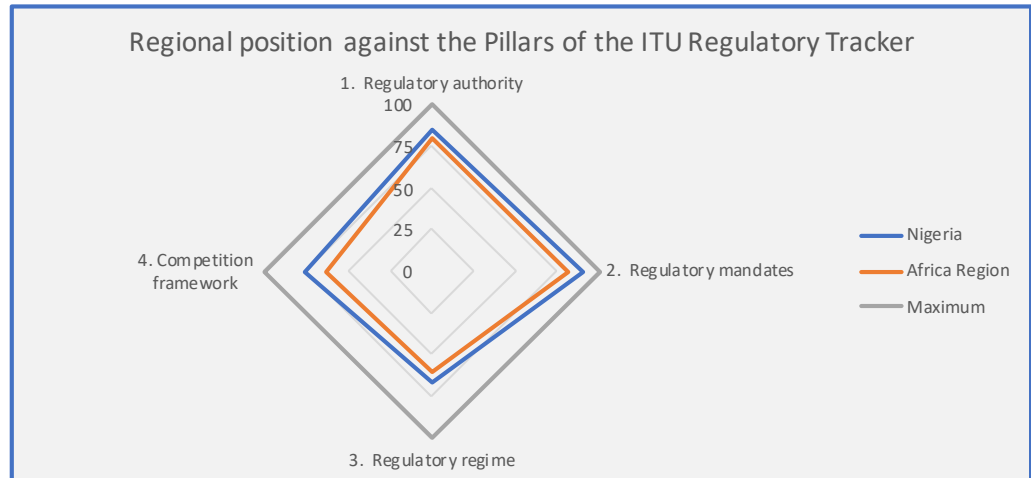
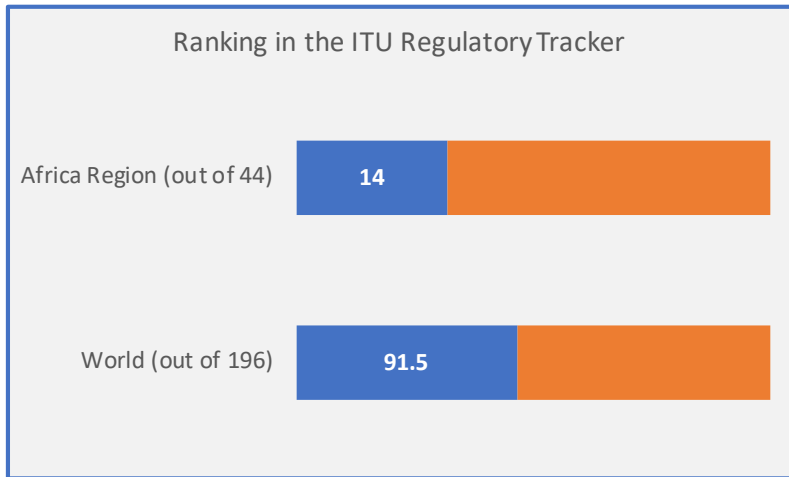
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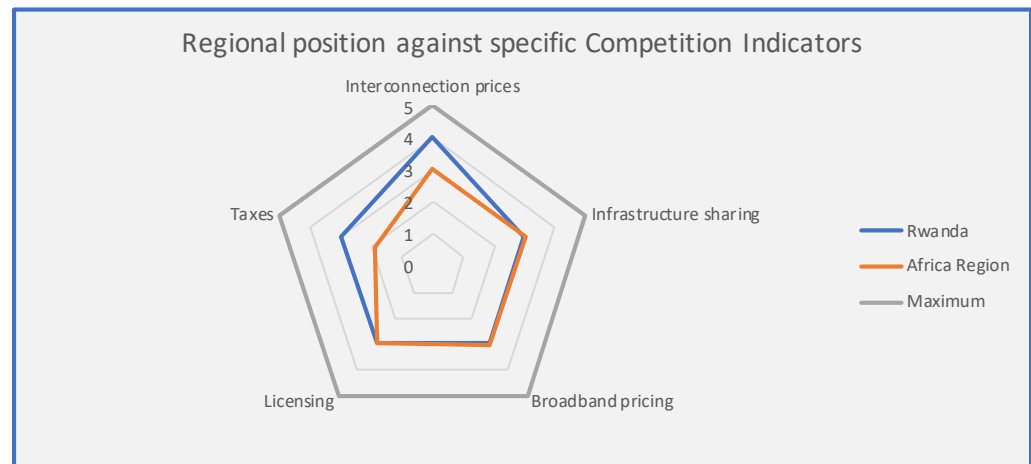
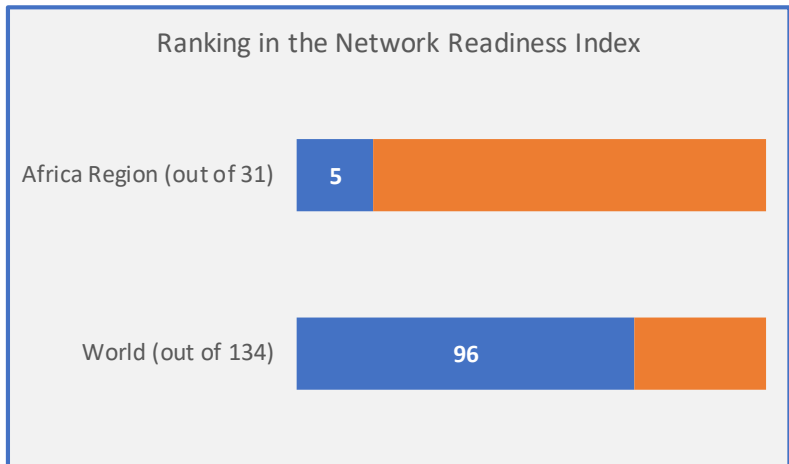
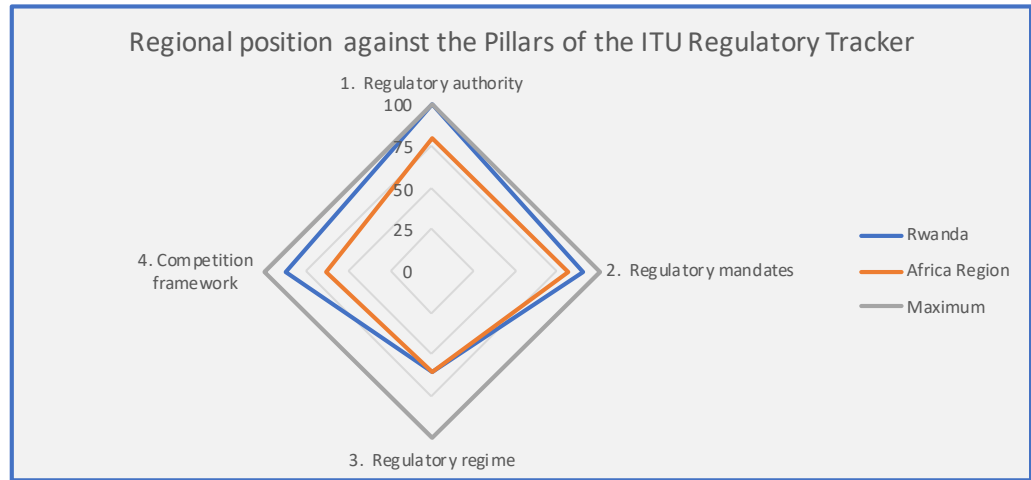
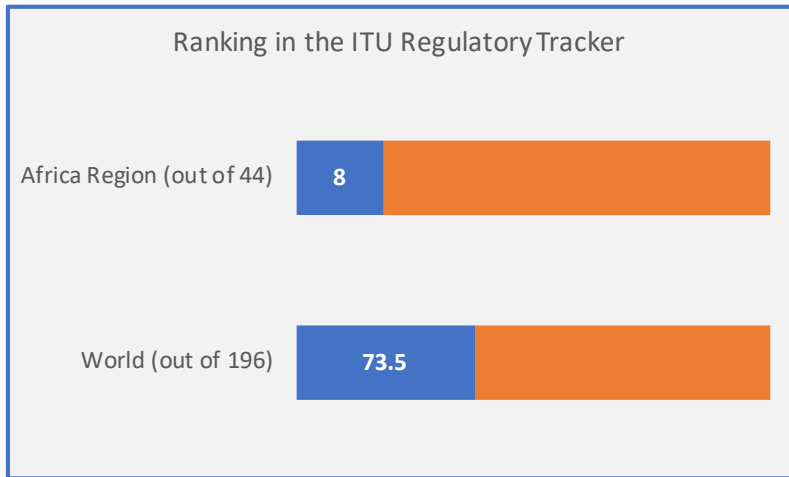
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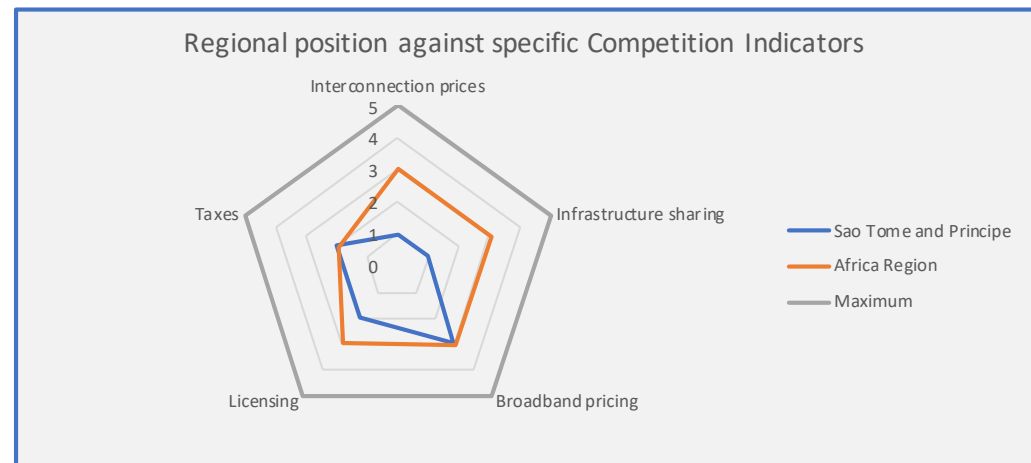
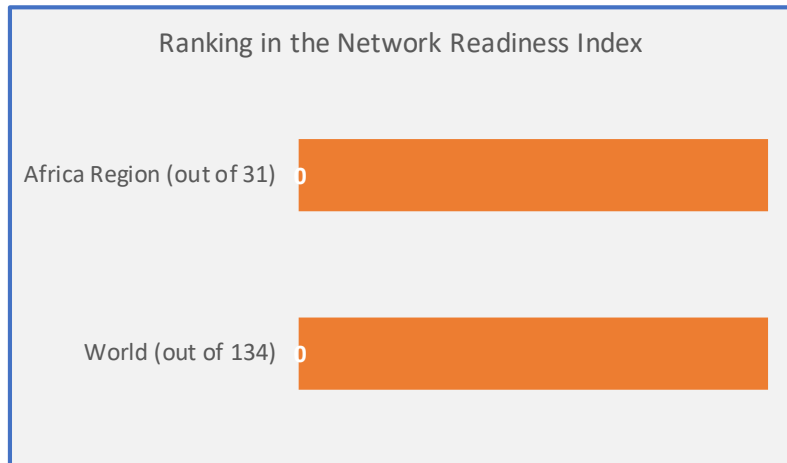
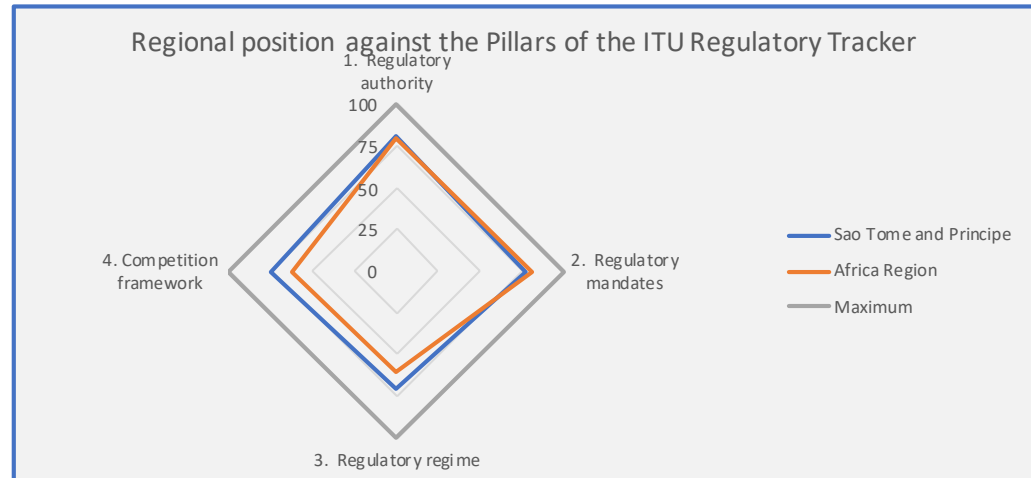
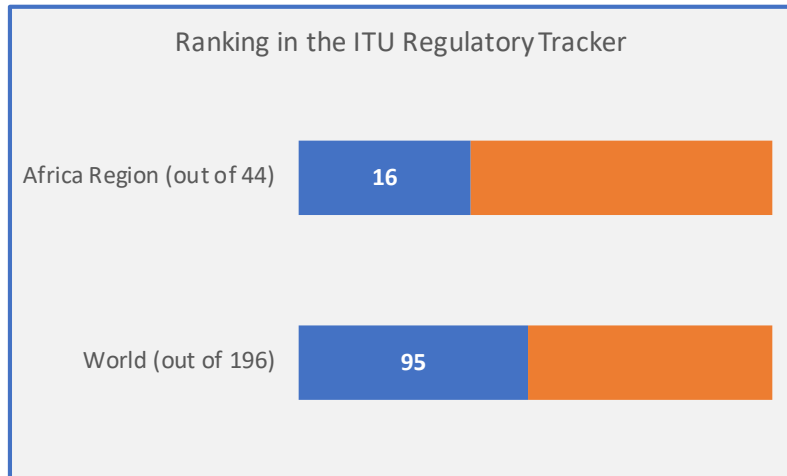
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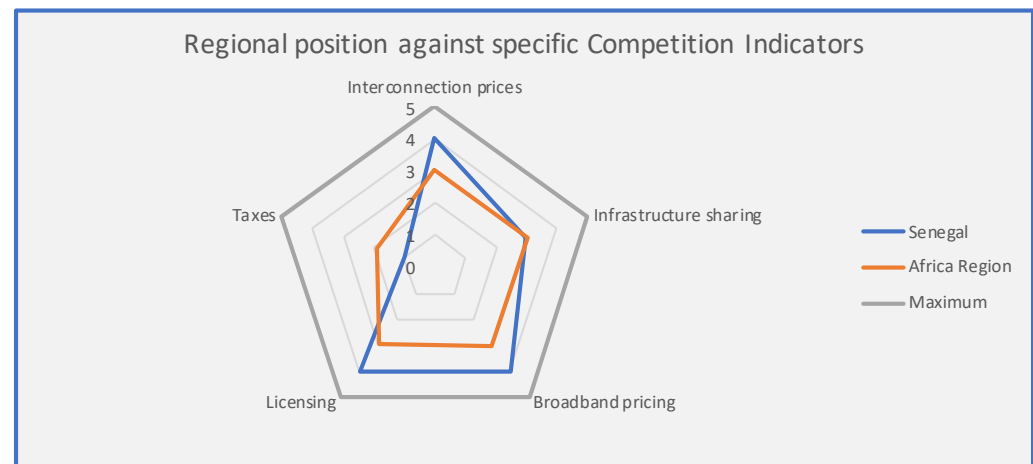
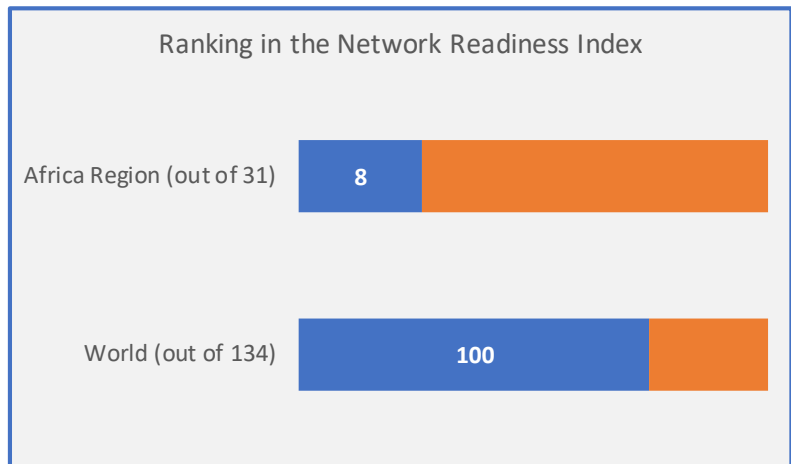
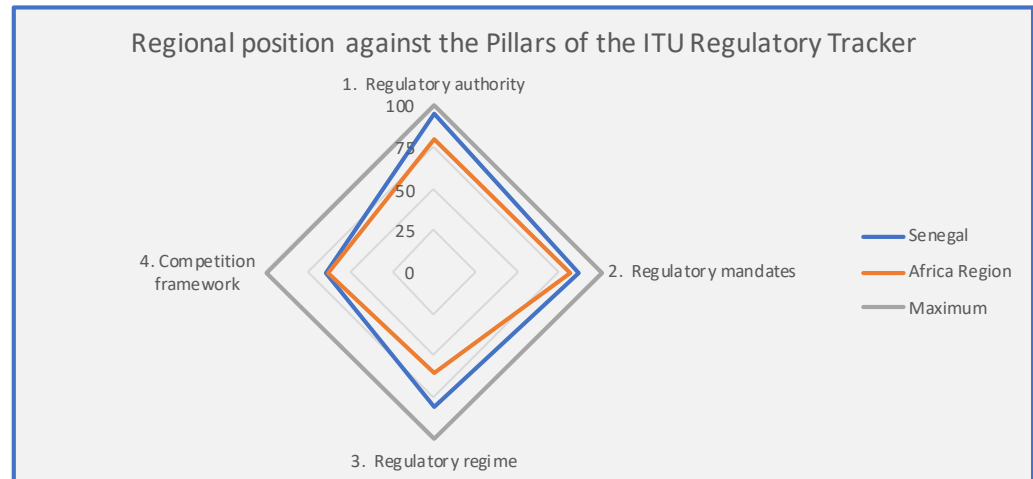
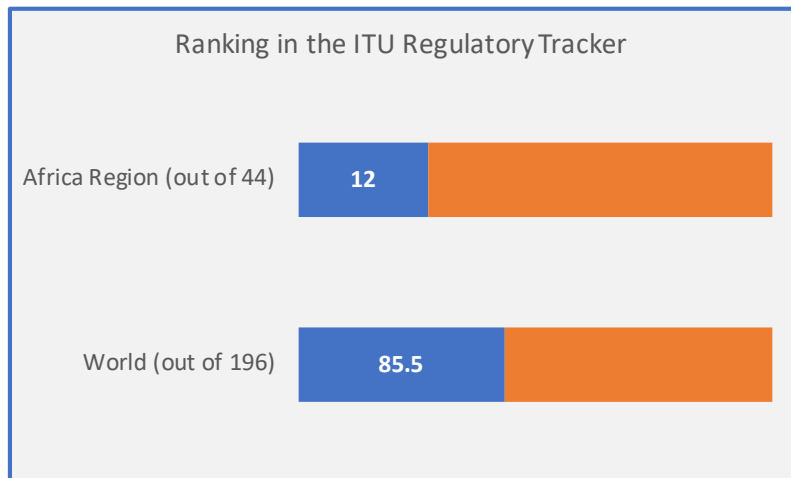
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**SAO TOME AND PRINCIPE**

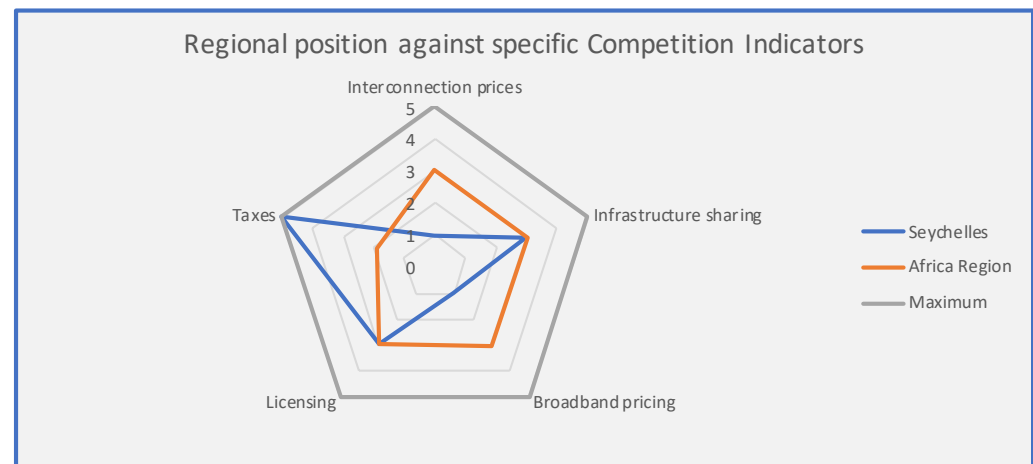
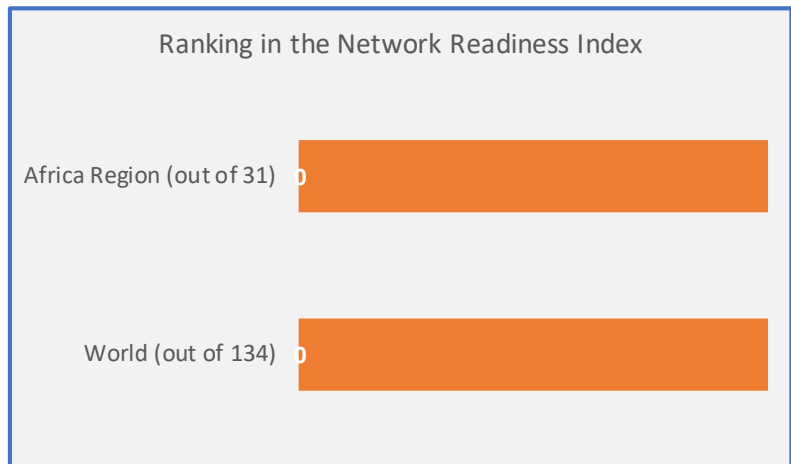
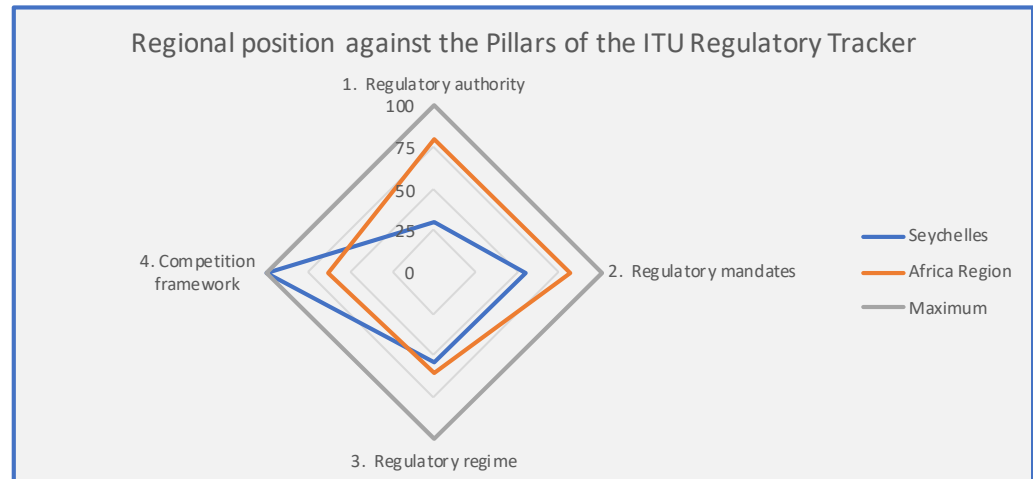
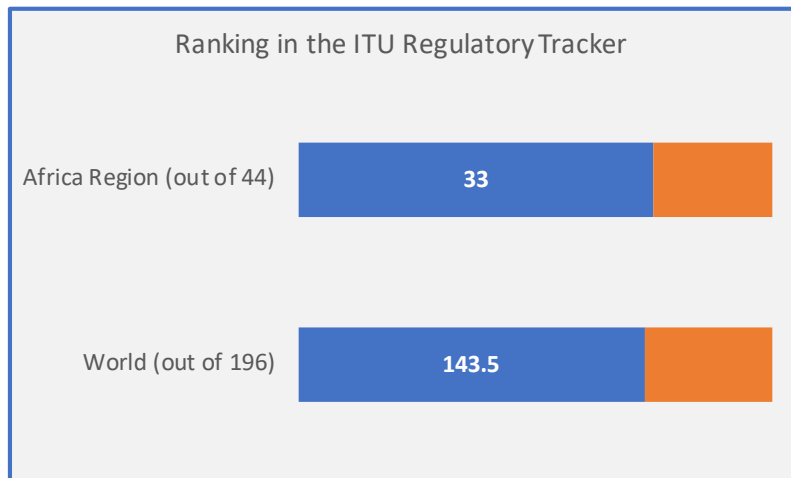


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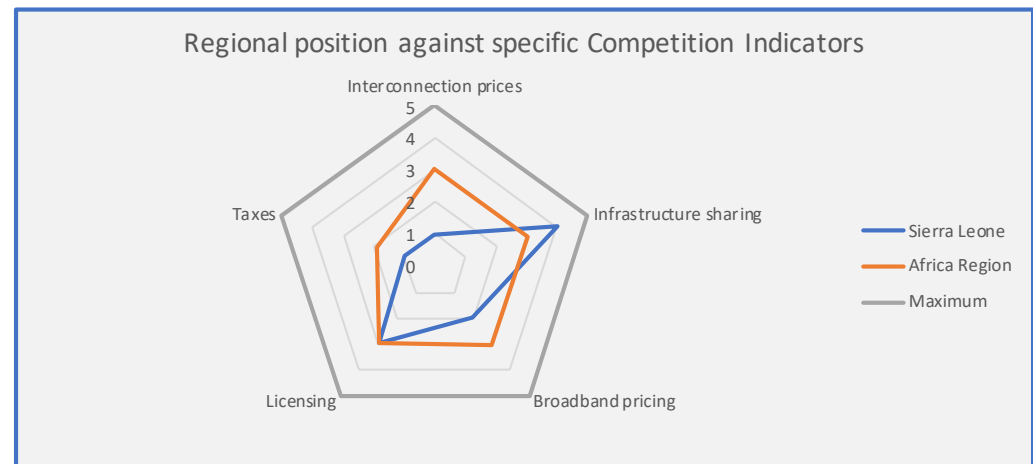
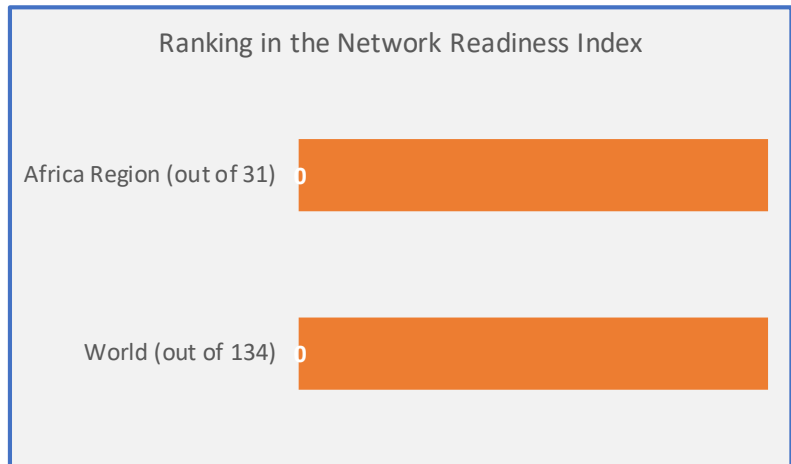
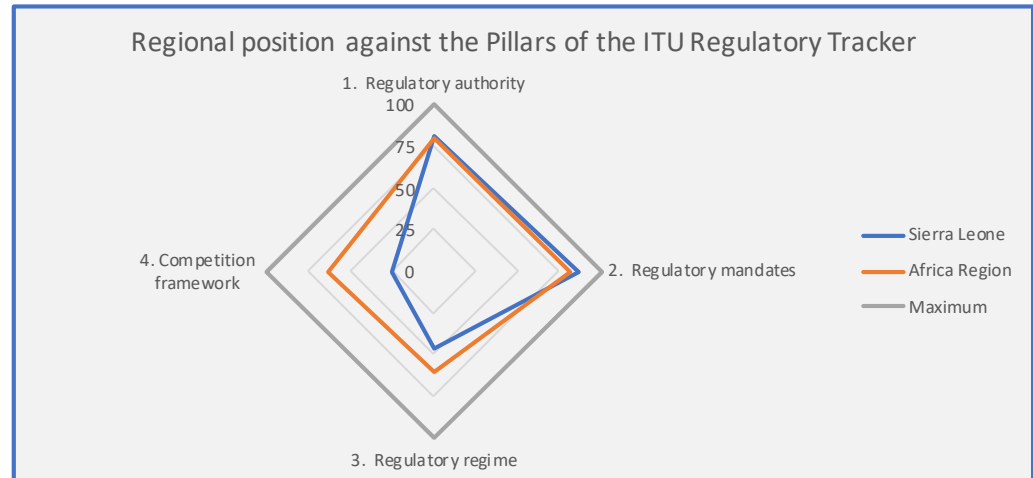
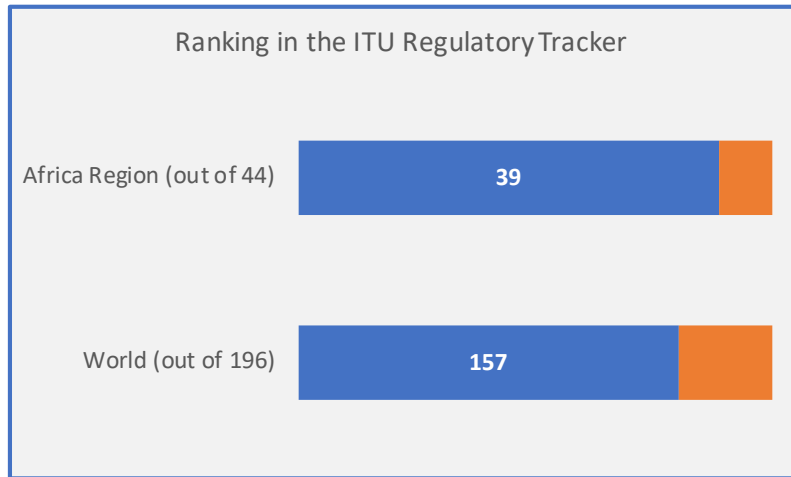




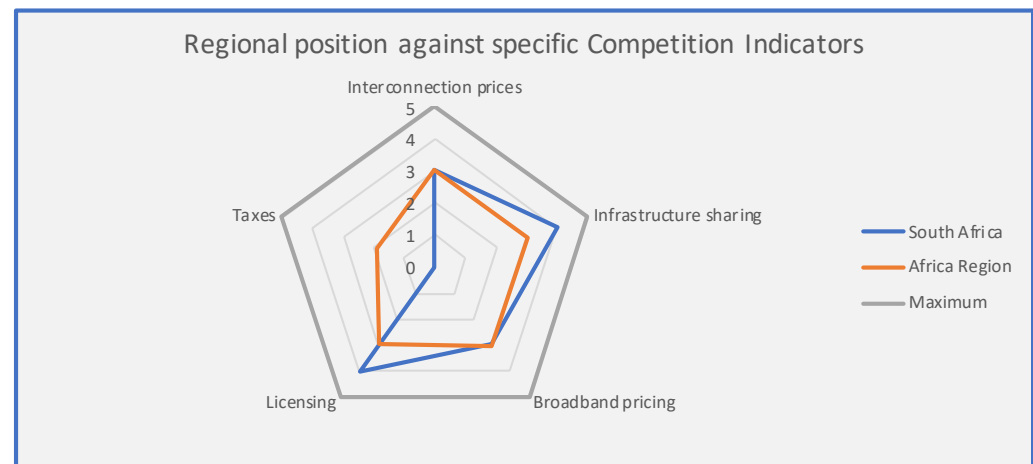
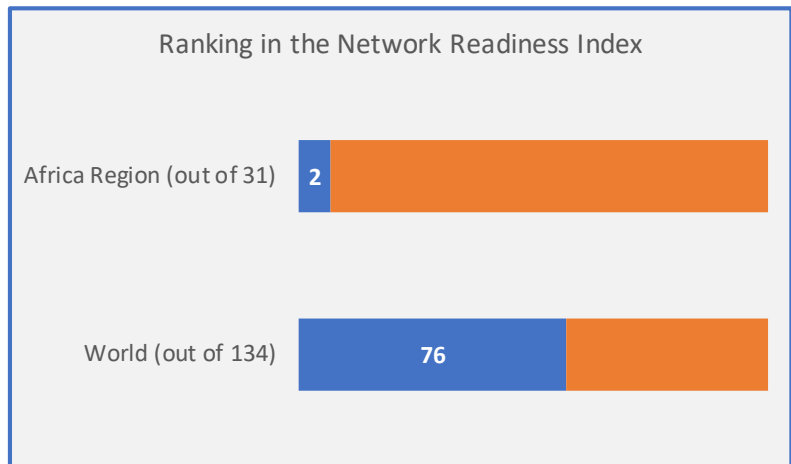
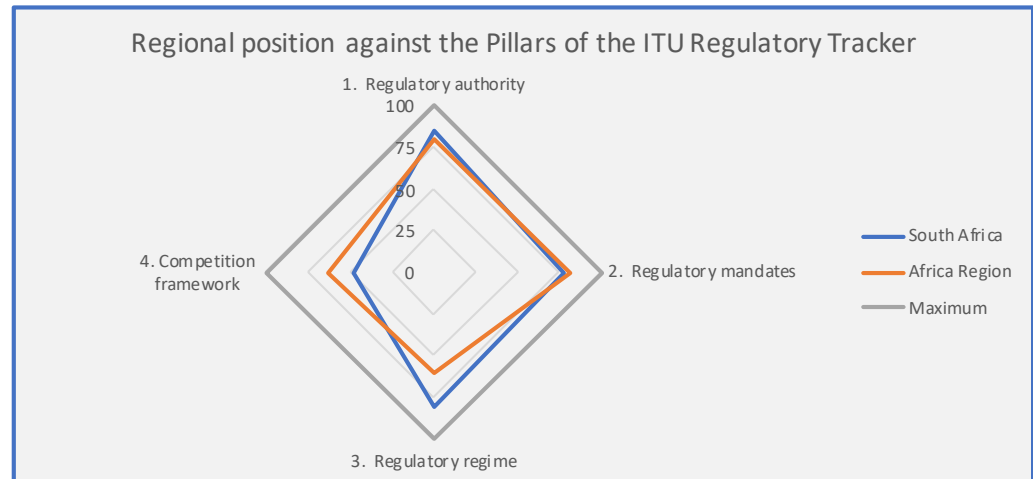
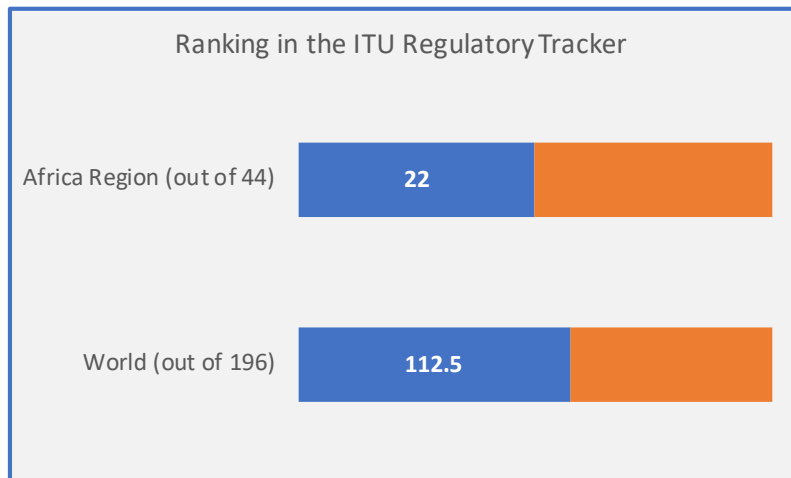
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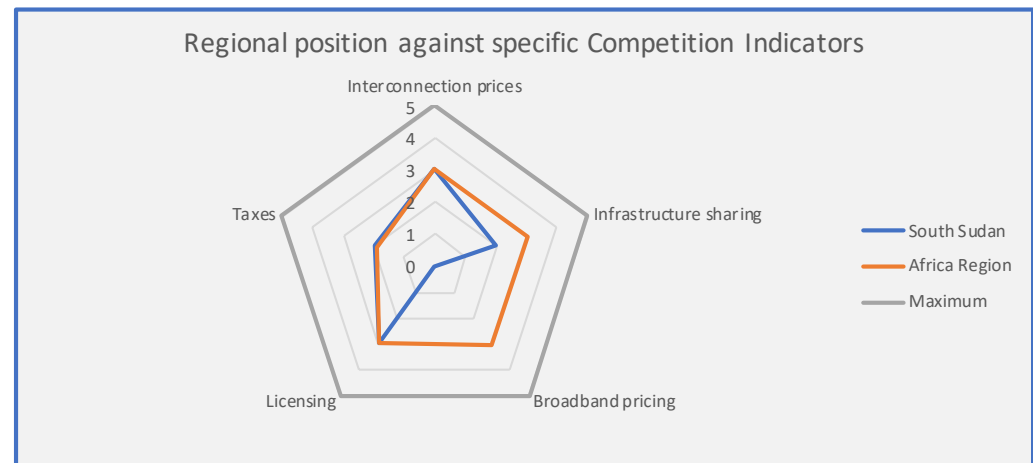
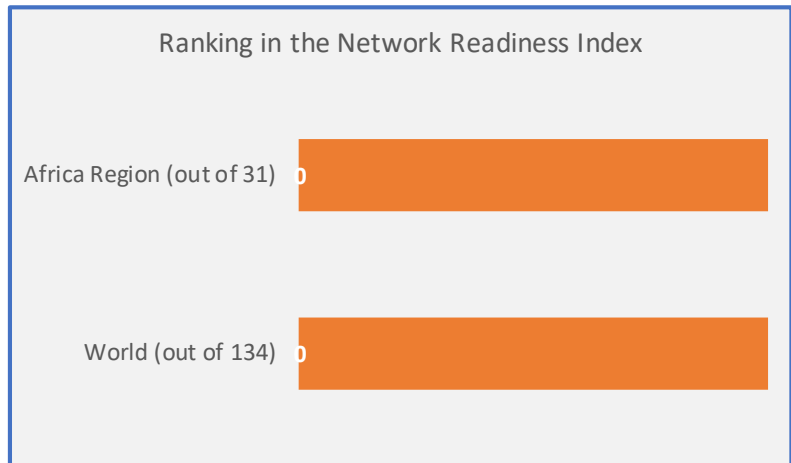
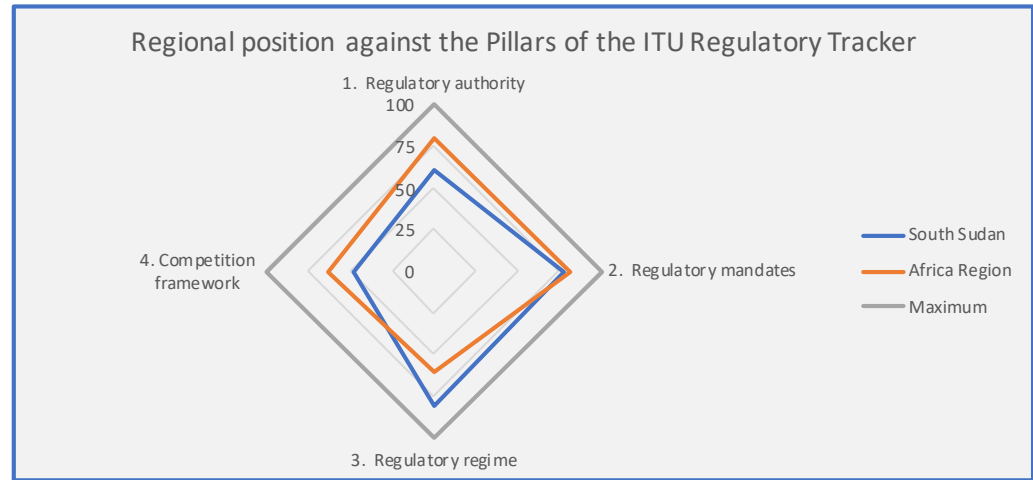
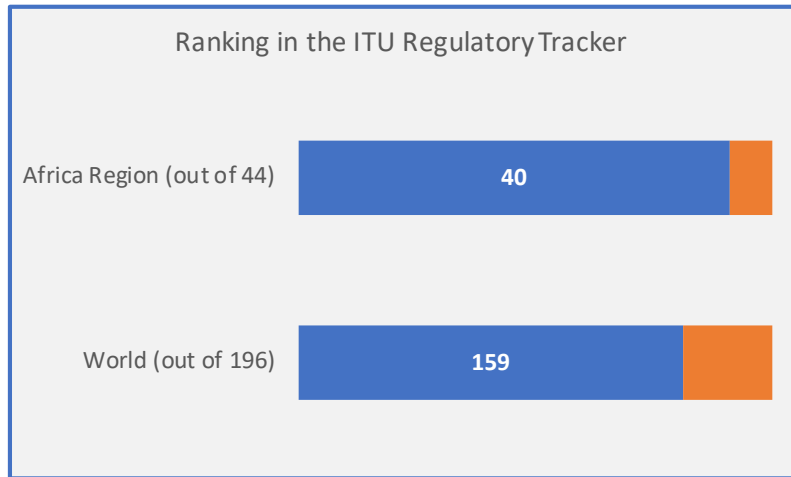
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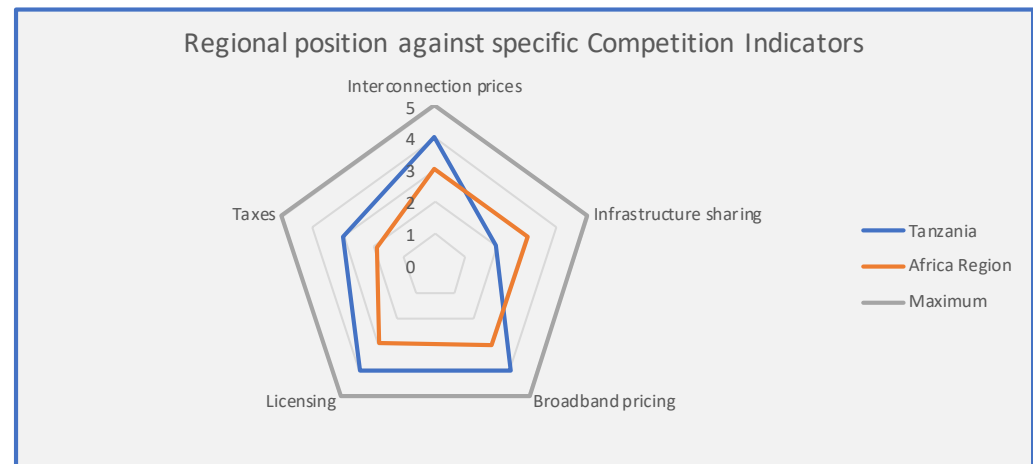
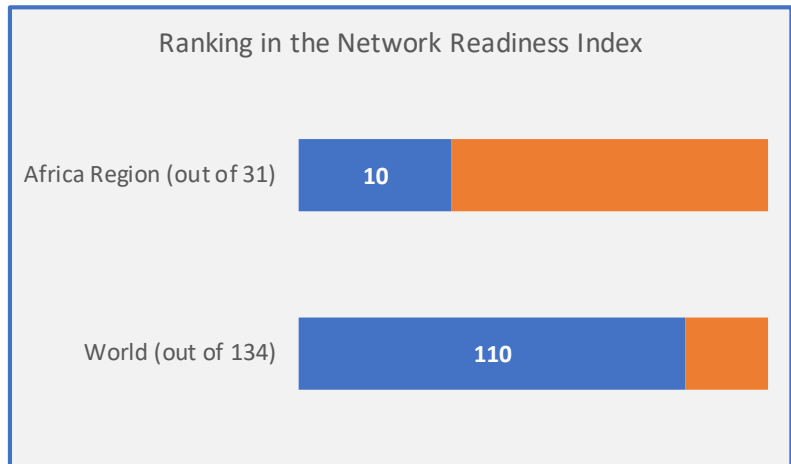
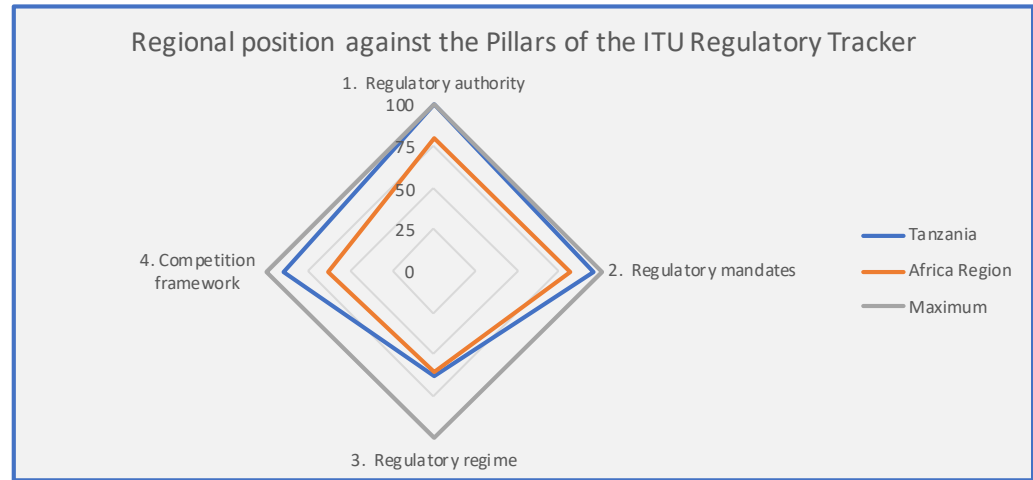
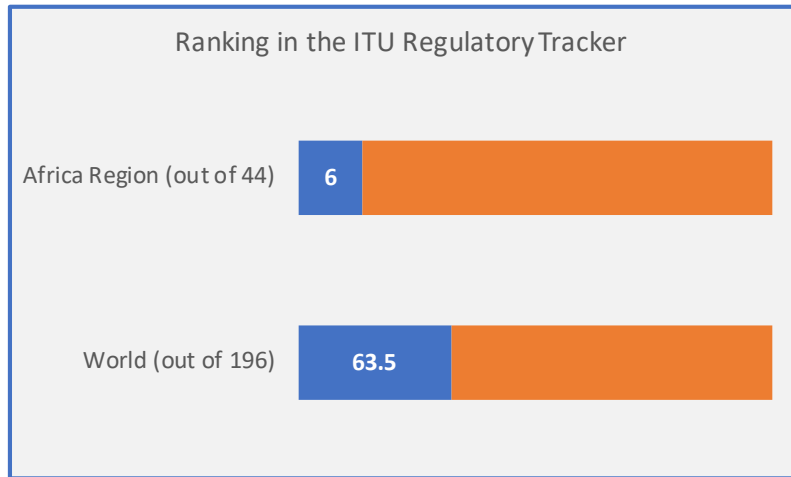
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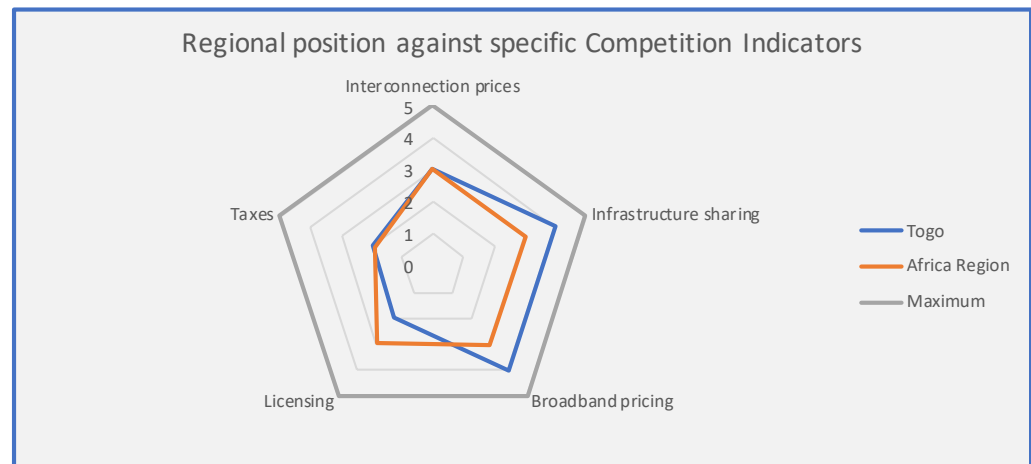
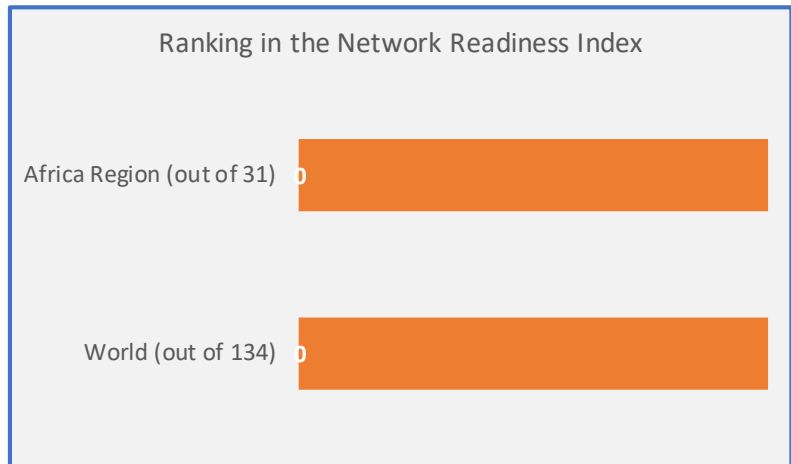
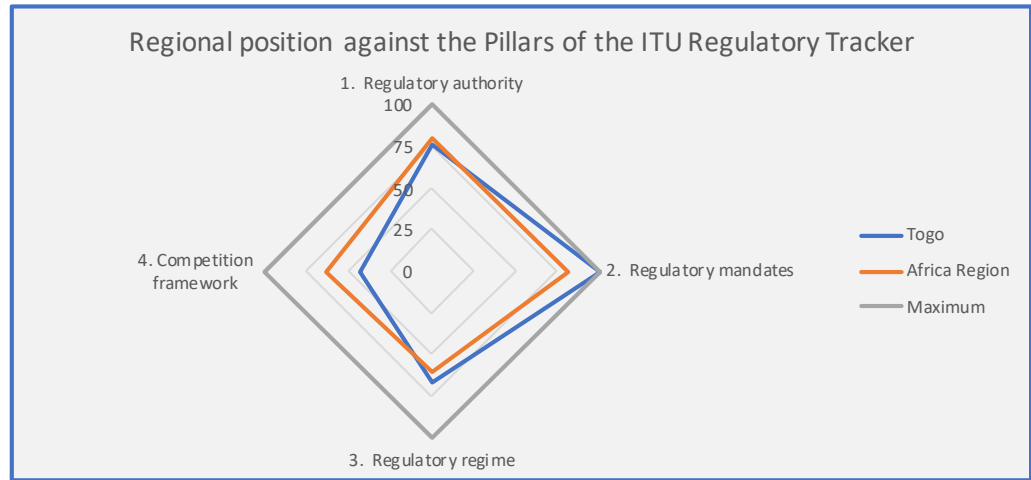
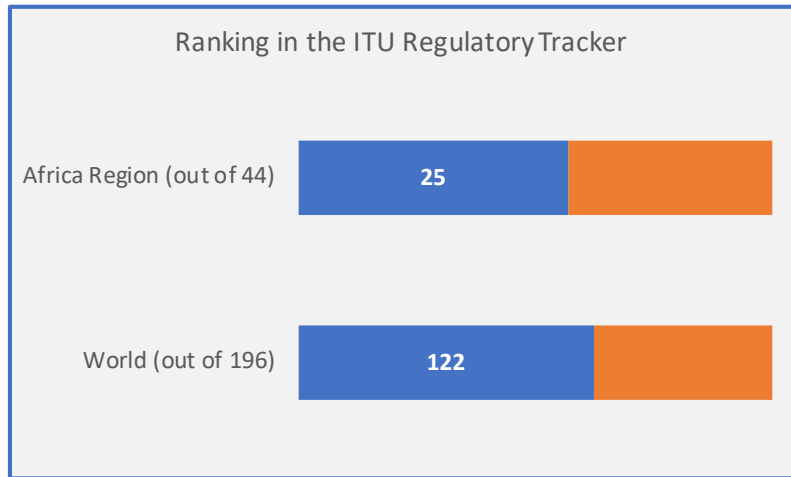
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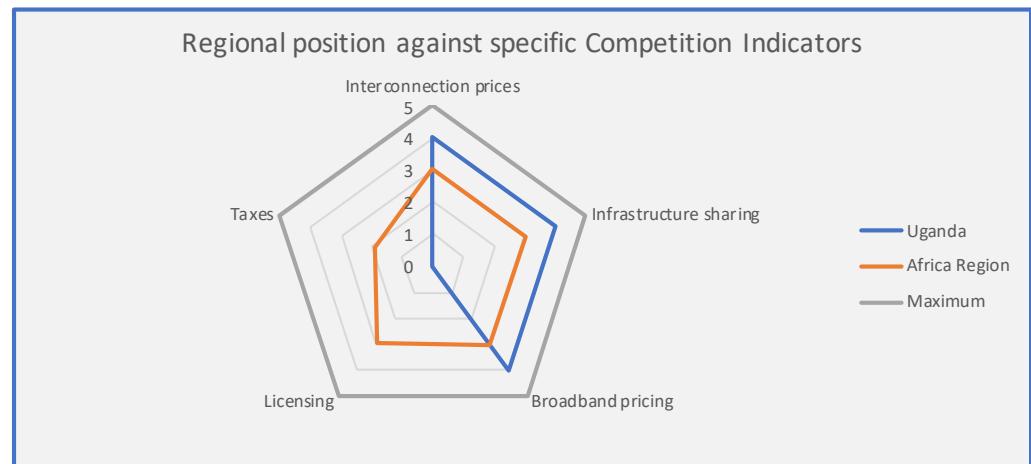
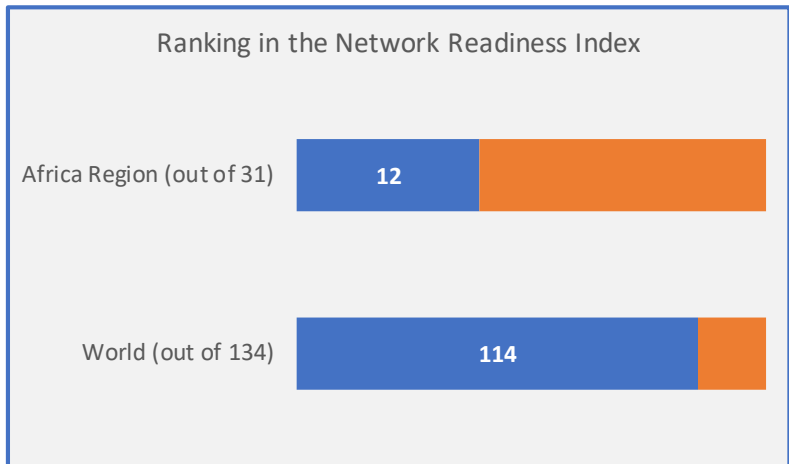
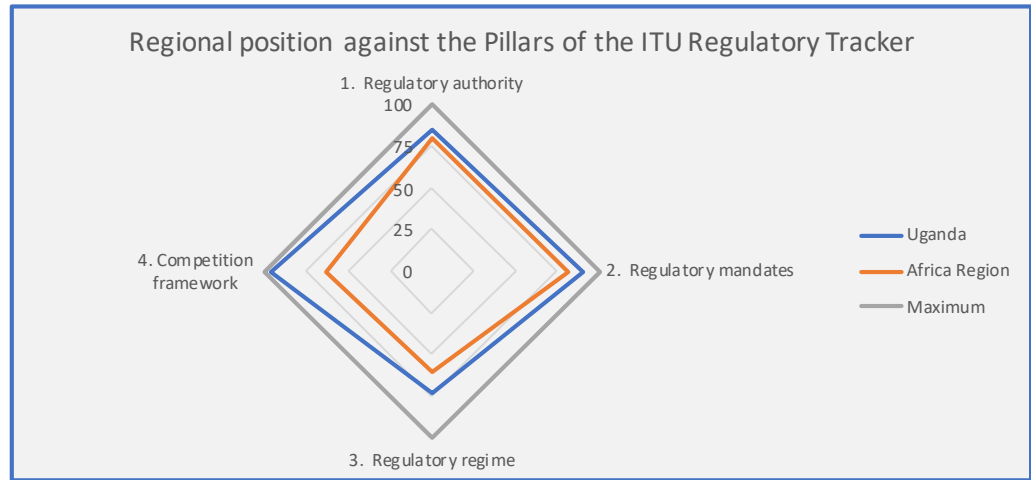
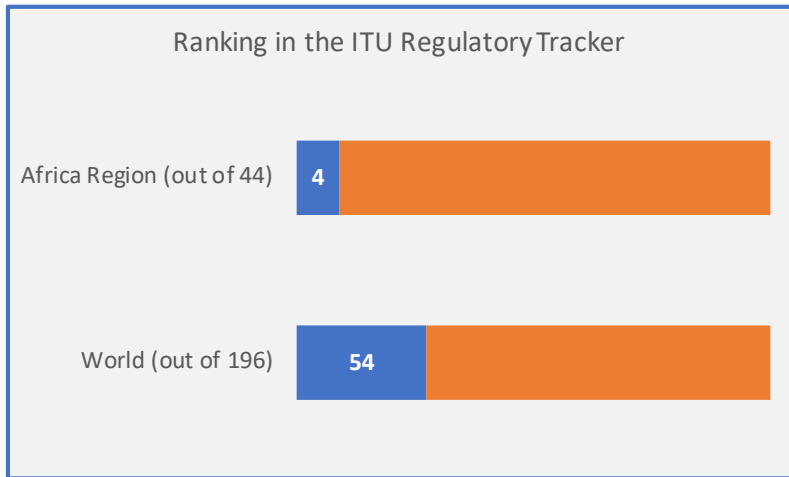
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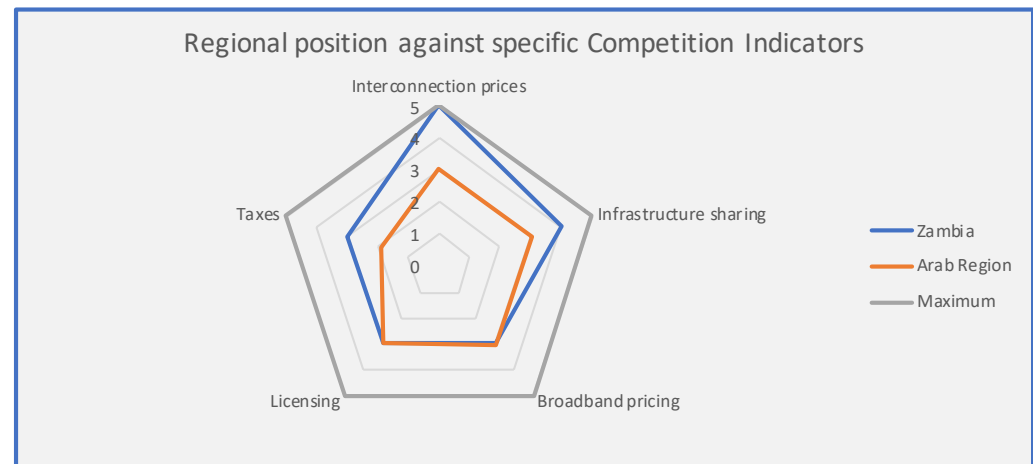
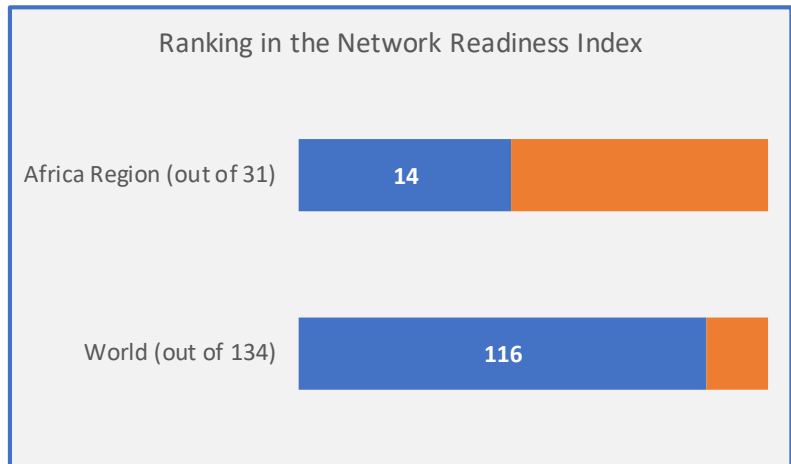
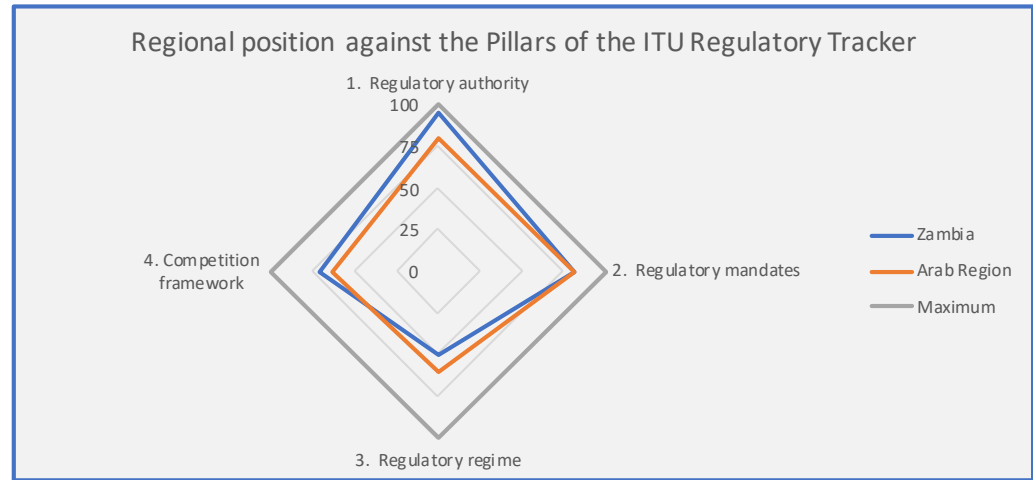
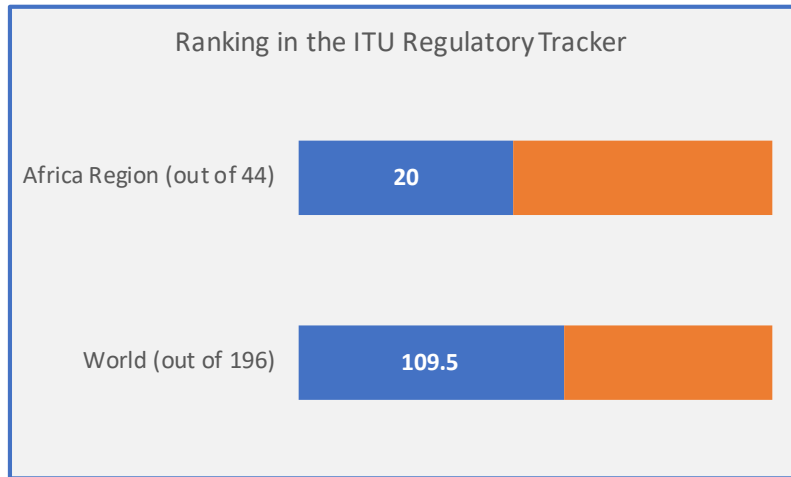
**TOGO**



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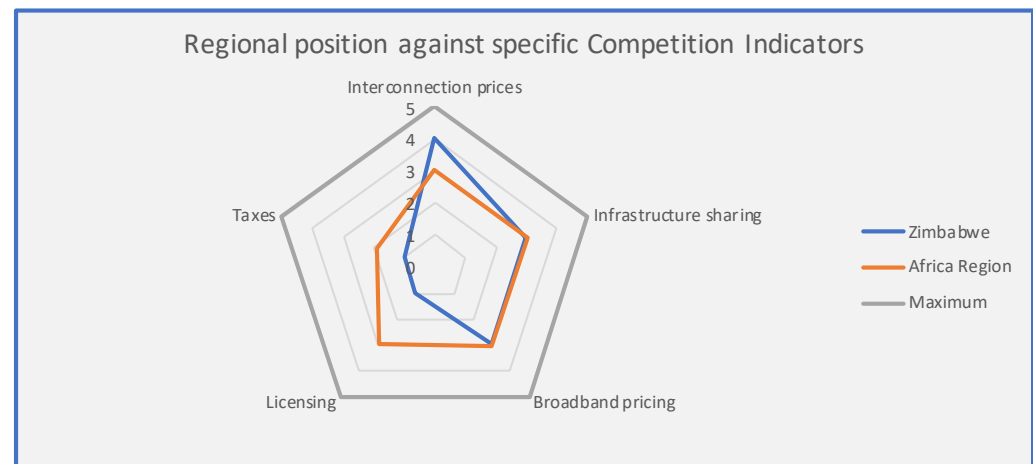
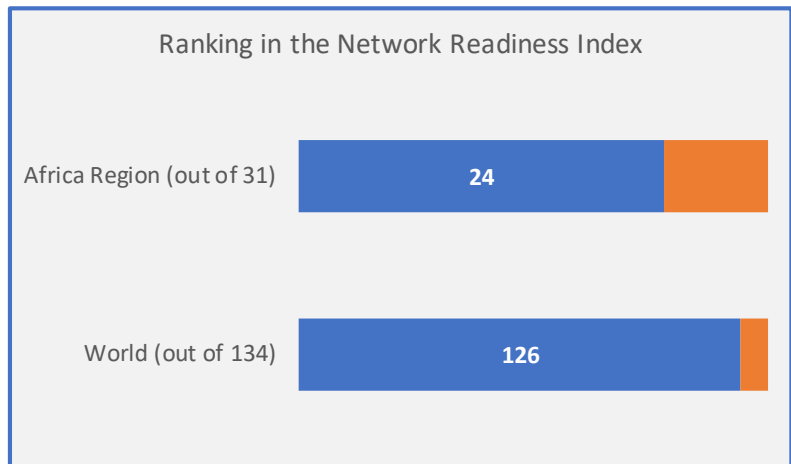
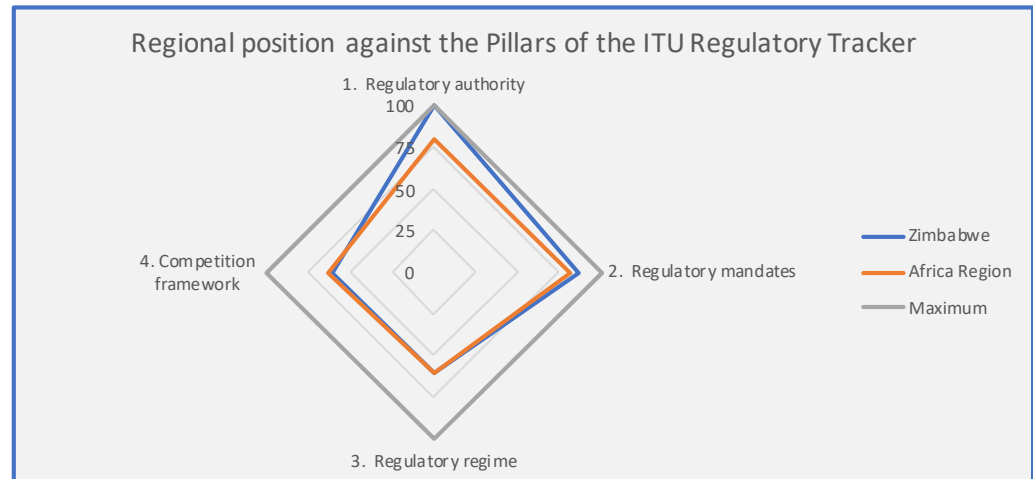
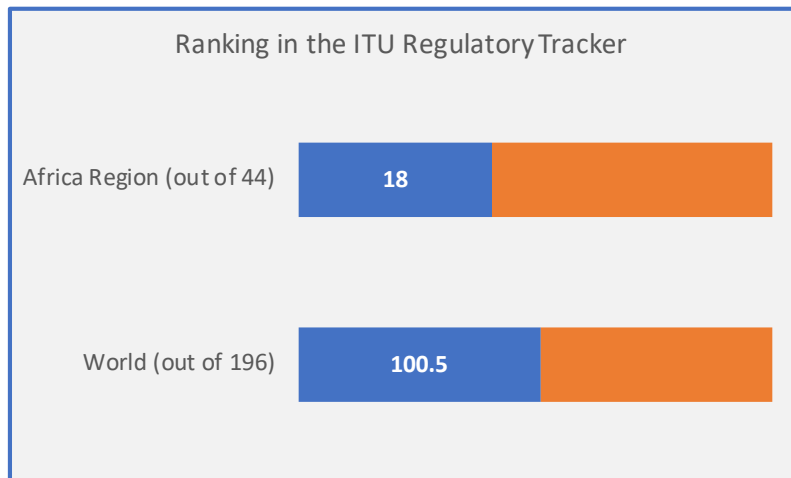


**ZAMBIA**





**ZIMBABWE**



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