FTTH Councils Global Alliance
Global Policy & Regulation Review

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ABOUT THE FCGA

The FTTH Council Global Alliance (FCGA) is the platform for cooperation of the six regional FTTH Councils active in North America, Latin America, Middle East and north Africa, Africa, Europe and Asia-Pacific:

- Digital Council Africa
- Fibre Broadband Association
- Fibre Broadband Association LATAM
- Fiber Network Council APAC
- FiberConnect Council MENA
- FTTH Council Europe

All FTTH Councils share a common goal: the acceleration of fibre to the home (FTTH) adoption. They all act as powerful and independent organisations in their respective geographies. This regional focus gives the FTTH Councils a special strength to adapt their activities to the particular market situation in their area.

The FTTH Council Global Alliance ensures that those regional efforts are combined with the strength of global cooperation. Within the FCGA, the FTTH Councils share studies, information, and the latest market developments.

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INTRODUCTION

In today's world, where digital connectivity is vital for global societies and economies, the deployment of FTTH networks plays a vital role. FCGA is proud to present its flagship initiative for 2023 - the "FCGA Global Policy & Regulation Review". This comprehensive review highlights the significance of global policies and regulations in shaping the trajectory of FTTH deployment across the world.

Scope of the Project

In an interconnected world, the importance of a comprehensive analysis of global regulatory and policy frameworks cannot be overstated. The FCGA's aim with this review is to provide a panoramic view of the current landscape, examining the multifaceted roles of policy and regulation in shaping the future of FTTH infrastructure deployment.

Why Policy and Regulation Matter?

The complex broadband landscape is heavily influenced by government policies and regulations, which serve as guiding principles shaping the growth of FTTH networks (in the context of the European Union, EU-level regulations play a pivotal role). The policies that are relevant for the FTTH are part and parcel of the wider telecommunication / information and communication technology (ICT) policies and regulations, and the impact of the policy and regulation is extending well beyond technical aspects:
1. Impact on Accessibility: Policies and regulations can either bridge the digital divide by ensuring equitable access to high-speed broadband, or they can exacerbate existing disparities.
2. Affordability: They dictate the cost structures, subsidies, and incentives that can make or break the affordability of broadband services for individuals and communities.
3. Quality: The standards, specifications, and oversight stipulated by policy and regulation directly affect the quality of broadband services available to users.
4. Fostering Adoption: Policies and regulations possess the capacity to either expedite or hinder the widespread adoption of FTTH technology, thereby impacting the digital transformation of societies.

Rationale Behind Comparing the Policy and Regulatory Frameworks

The FCGA undertakes this project to emphasize the need for a comprehensive understanding of global policies and regulations governing FTTH deployment. With this comparative analysis, we want not only to highlight the differences but also bring to light the commonalities, guiding principles, and best practices that transcend geographical boundaries.

What are the Challenges and Benefits of Comparative Analysis?

The FCGA boasts a membership and expert representation from diverse world regions. Our review is enriched by the multitude of perspectives and experiences brought to the table, making it a comprehensive and balanced analysis.

By juxtaposing different regulatory and policy landscapes, we aim to identify and disseminate best practices. These insights can serve as a foundation for refining and enhancing the existing regulatory frameworks, promoting a more efficient and effective approach to FTTH deployment.

Knowledge sharing is at the heart of our comparative analysis. We believe that by sharing expertise, experiences, and insights from across the globe, we can collectively contribute to more effective policy reforms.

Accelerating FTTH Adoption Worldwide

Ultimately, our goal is to accelerate FTTH adoption worldwide for the benefit of all. By fostering an environment of shared knowledge and best practices, we hope to contribute to a more connected, equitable, and prosperous world, where the benefits of FTTH connectivity are accessible to everyone.

We hope that you will find the FCGA Global Policy & Regulation Review to be a useful gateway to understanding the intricate web of policies and regulations that underpin the global FTTH landscape.

1. LEGAL AND REGULATORY FRAMEWORK

The legal and regulatory landscape for FTTH deployment across the globe is characterized by a combination of some common features and distinct regional differences. This chapter provides an overview of the complex set of regulations, frameworks, and policies that govern the deployment of FTTH networks.

Country-Specific Regulations

In nearly all regions, except the European Union (EU), regulations relevant to FTTH deployment are often tailored to individual countries rather than standardized across the entire region. This country-specific approach allows flexibility in addressing the unique needs and challenges within each country.

In the EU, a well-defined legal and regulatory framework is instrumental in facilitating FTTH networks, with policies emphasizing universal access, streamlined permitting, and competition. In the United States, the framework combines federal and state-level regulations, addressing issues like net neutrality and universal service, but states may differ in their approach. In Latin America, countries have their own laws and regulations, often focusing on licensing, spectrum management, and infrastructure sharing, resulting in a patchwork of rules across the region. Meanwhile, in the MENA region, regulatory styles adapt to factors like governance models, funding availability, and the stage of FTTH penetration, with a mix of public, public-private partnerships, and private sector-driven models. In Africa there is no overarching regulatory framework to either facilitate or govern the deployment of fibre infrastructure. Each of the 54 countries on the continent have their own rules and regulations governing the rollout of infrastructure.

These variations highlight the complexities of striking a balance between standardization and region-specific regulations when fostering FTTH infrastructure development.

Centralized vs. Decentralized Regulation

The contrast between centralized and decentralized regulatory approaches in FTTH infrastructure deployment is evident across diverse regions. In Europe, a centralized model prevails, with the European Union setting clear directives and regulations that emphasize universal access to FTTH networks and competition promotion. In the United States, regulatory authority is shared between the federal and state levels, creating a more decentralized system where states may have varying rules, reflecting their specific needs and priorities. In Latin America, there is a mix of centralized and decentralized regulatory models, with some countries relying on national laws and others granting autonomy to local governments in matters related to FTTH deployment. In the MENA region, the regulatory style varies per country, with a combination of central and local initiatives driven by factors like governance models, network ownership, and available funding. Africa, meanwhile, presents a primarily decentralized approach to regulation, as each of its 54 countries establishes its

own rules for infrastructure deployment. Often municipalities can have their own rules which adds to the complexity. In some cases, it is possible that there are not rules to comply with.

Regional Harmonization Efforts

Several regions have established organizations or assemblies, with the aim of harmonizing regulations and frameworks. However, the effectiveness and roles of these organizations can vary significantly from one region to another.

In the EU, harmonisation efforts are focused on creating a consistent and supportive regulatory environment for FTTH deployment. In Latin America, REGULATEL is a regional association that brings together telecommunications regulatory authorities from various Latin American countries. It promotes the exchange of information, best practices, and collaboration among regulatory agencies to foster the development and effective regulation of telecommunications in the region. In the MENA region, various countries follow diverse policy styles, reflecting their unique governance models, network ownership, and funding situations. Arab League Telecom Regulatory Council and ITU MENA Chapter play an important role in fostering regional cooperation. In Africa, the African Telecommunications Union is a body representing 51 of the 54 countries but it does not regulate any of the decision making across the continent. Regional bodies such as WATRA, EACO, and CRASA work towards harmonizing regulations within their respective areas, despite the absence of a continent-wide regulatory framework.

Consumer Protection

Consumer protection remains a common thread across all regions. Emphasis is placed on ensuring the quality of service, addressing consumer complaints, and safeguarding the rights and interests of broadband users.

2. DEPLOYMENT TARGETS

The expansion of FTTH networks across the globe is guided by a common thread of governmental involvement and recognition of the importance of high-speed internet access for economic development and digital inclusion. This chapter looks at the deployment targets that underpin the ambition to connect citizens to affordable, high-speed internet, while highlighting the nuances that differentiate regions in their objectives.

Ambitious Policy Goals

Governments worldwide have recognized the pivotal role of FTTH networks in ensuring digital inclusivity, especially in underserved or rural areas. In Africa, the ambitious Digital Economy for Africa (DE4A) initiative aims to digitally enable every business, individual, and government by 2030, translating into connecting over 1.1 billion people. The African Union has set the goal of ensuring all Africans have access to at least 6Mbps broadband connectivity at an affordable price by 2030. This price aspect can be seen more specifically at a national level – for instance, in Nigeria, the National Broadband Plan sets objectives for broadband penetration (70% by 2025) and data download speeds of a minimum 25Mbps in urban areas, and 10Mbps in rural areas, at a price not more than N390 per 1GB of data (i.e., 2% of median income or 1% of minimum wage).

In the Asia Pacific, Japan is striving to reduce disparities in broadband development by setting targets for household coverage rates, with a goal of 99.90% coverage by the end of FY2027. China, having already achieved widespread FTTH network access (over 94% of population has been connected through FTTH networks of at least 100Mbps by the end of June 2023), is emphasizing the installation of 5G networks and access network improvement.

The European Union, under the European Commission's Digital Decade targets, places a significant emphasis on connectivity, including the establishment of Gigabit connectivity for everyone by 2030.

Latin American countries are recognizing the importance of FTTH network. The Brazil 2023-2027 National Broadband plan entails expanding fibre optic backhaul connectivity to cover 100% of Brazilian municipalities by 2027, up from the current 83.97%. Chile aims for 100% coverage of fibre optic networks by 2025, while Colombia and Argentina have specific targets for broadband access and FTTH penetration.

In the United States, comprehensive federal, state, and local subsidies, along with private capital investment from Internet Service Providers, are expected to connect nearly every American home with Fiber by the end of the decade. The Fiber Broadband Association forecasts significant growth in FTTH network deployment.

In the MENA region, government targets for FTTH deployment vary based on governance models and financial capabilities, with countries like UAE, Qatar (both have already exceeded 98%), Oman (target of 75% coverage of buildings by 2025), and Saudi Arabia (at least 70% to have FTTH connectivity) leading the way with their respective objectives.

3. FUNDING AND INCENTIVES

Governments and stakeholders across various regions have recognized the necessity of substantial investment to achieve their ambitious connectivity targets. In Africa, for instance, the Digital Economy for Africa (DE4A) initiative requires an estimated $100 billion USD investment between now and 2030, primarily directed toward building 250,000 new 4G base stations and at least 250,000 kilometres of fibre infrastructure. Similarly, in Asia Pacific, countries like Japan and China are actively promoting the expansion of fixed broadband, with clear targets for household coverage rates and the installation of advanced networks. Europe emphasizes the importance of resilient and secure digital infrastructure, focusing on Very High-Capacity Networks, with the overall investment needs estimated €174 billion. In Latin America, governments have set specific goals to deploy FTTH networks and expand connectivity, often supported by regulatory measures and incentives. The United States is witnessing a surge in investment, both from the public and private sectors, to ensure fibre connectivity for nearly every American home. In the MENA region, countries are setting deployment targets based on their financial capabilities, highlighting the crucial role of investment in realizing their connectivity objectives.

The deployment of FTTH networks hinges on a multifaceted approach to funding and incentives that

reflects both common global characteristics and region-specific nuances. This chapter uncovers the diverse funding sources and strategies that underpin FTTH deployment.

Private Investment

In most regions, private investment is a common source of funding for FTTH deployment. Private telecom operators and companies often lead initiatives to expand fibre networks. Their financial contributions and technical expertise are pivotal in infrastructure growth.

For instance, across Africa, private investment takes centre stage, with the majority of FTTH projects being completed through the commitment of private enterprises, both existing Fiber Network Operators and Mobile Network Operators. The support from Development Financial Institutions (DFIs) like the Development Bank of South Africa further encourages private investment by providing loans, guarantees, and technical assistance.

Government Support

Governments worldwide are increasingly recognizing the pivotal role of broadband access and, consequently, are providing various forms of support. This support takes the form of subsidies aimed at enhancing access, affordability, and accessibility, tax incentives to stimulate private sector investment, and direct funding for FTTH projects.

In Africa, over 30 countries have instituted Universal Service Funds (USF) aimed at narrowing the digital divide, but their effectiveness has been hampered by management and transparency issues. In the Asia Pacific, countries like Japan and China provide subsidies for optical fibre installation in disadvantaged areas through government funding. Europe, on the other hand, leverages the European Regional Development Fund (ERDF) and member state-specific programs to indirectly support broadband projects, albeit not explicitly targeting FTTH networks. Latin America benefits from development banks, public-private partnerships, Universal Service Funds financed through telecom levies, and spectrum auctions, all serving as government-supported mechanisms for FTTH expansion. The United States, in response to the pressing need for high-speed broadband, has introduced a multitude of funding programs such as the CAREs Act and the Infrastructure Investment and Jobs Act (IIJA) among others, allocating substantial financial resources to support FTTH initiatives. Meanwhile, the Middle East and North Africa (MENA) region, governments have allocated funds to supplement private investment and cover rural areas. These varied forms of government support underline the global commitment to enhancing FTTH networks and bridging the digital gap.

Focus on Underserved Areas

A shared emphasis exists across regions on extending FTTH coverage to rural, remote, and underserved areas. This commitment underscores the drive to bridge the digital divide and ensure that high-speed internet is accessible to all, regardless of their geographical location.

International Organizations

Many regions benefit from funding and support offered by international organizations, such as the World Bank, the European Union, the Inter-American Development Bank, and more. These organizations contribute to bridging the digital divide by providing financial resources, technical expertise, and policy

guidance.

Fror instance, in Africa, international organizations like The Infrastructure Consortium for Africa (ICA) have dedicated a significant portion of their commitments to the ICT sector. DFIs, like the Development Bank of South Africa, offer loans, guarantees, and technical support for infrastructure projects throughout Sub-Saharan Africa, reinforcing private investments. In the Asia Pacific, multilateral development banks such as the Inter-American Development Bank and the World Bank are instrumental in providing loans, grants, and technical assistance for FTTH initiatives in Latin America. International organizations like the International Telecommunication Union (ITU) offer grants and assistance to bridge the digital divide. These efforts international organizations and financial institutions play a pivotal role in bolstering the development of FTTH networks and promoting equitable global connectivity.

Universal Service Funds (USF)

Several regions have established Universal Service Funds to subsidize the deployment of broadband services, especially in underserved areas. These funds aim to ensure equitable access to high-speed internet, although their effectiveness can vary depending on their management and governance structures.

Public-Private Partnerships (PPPs)

There is a growing global trend towards forming Public-Private Partnerships between governments and private sector entities to share the costs and risks associated with FTTH infrastructure investments. These partnerships facilitate collaboration in deploying networks and harness the strengths of both sectors. An example of this is the current pilot in South Africa of the Broadband Infrastructure Initiative. Governments in Latin America have also embraced PPP models to facilitate FTTH deployment to share the costs and risks associated with infrastructure investments.

Involvement of big global corporations

The involvement of big global corporations like Google, Meta, and Microsoft varies across regions. In Africa, these companies are actively engaged in funding projects and supporting infrastructure development, while their level of involvement may differ in other regions.

4. COMPETITION POLICY, INFRASTRUCTURE SHARING

The landscape of competition policy and infrastructure sharing plays a pivotal role in shaping the deployment and expansion of FTTH networks globally. Market dynamics, including the level of competition and market concentration, vary significantly between regions. In some areas, competition may be fierce, with multiple service providers vying for market share, while in others, the market may be dominated by a few major players. These differences influence the application and effectiveness of competition policies. In general, infrastructure sharing is a widely recognized strategy aimed at reducing costs and accelerating FTTH deployment. It involves network operators sharing physical assets, including ducts, conduits, and optical fibre cables.

Regulatory Framework and Oversight

The regulatory framework and oversight for competition policy and infrastructure sharing vary across regions, each tailored to the unique economic and market conditions.

In Africa, where many economies are with low GDPs per capita and rural populations are predominant, there has been little competition and high prices due to low returns on investment in infrastructure. However, there has been a shift towards liberalisation in the broadband market. Some countries like South Africa, Rwanda, Kenya, Tanzania, Nigeria, and Ghana have embraced policies that encourage infrastructure sharing among network operators, which has stimulated unprecedented growth and increased competition.

In the Asia Pacific, Japan enforces regulations for interconnection between telecommunications carriers to ensure fair competition and has issued guidelines aimed to facilitate infrastructure sharing, while in China, measures have been put in place to prevent obstacles to network deployment by property owners and to promote infrastructure sharing.

The European Union relies on the European Commission and National Regulatory Authorities (NRAs) to identify and regulate dominant network operators, promoting non-discriminatory access and pricing, and encouraging infrastructure sharing. The EU promotes open access and wholesale regulation to enable competition among network operators. This includes ensuring that dominant operators offer wholesale access to their infrastructure, allowing other operators to enter the market and offer services to end-users. In Latin America, competition policy focuses on promoting competition, breaking up monopolies, and ensuring fair interconnection and access. Regulators in Latin America enforce regulations to ensure that dominant telecommunications operators provide non-discriminatory access to their networks and infrastructure. Regulators also target anti-competitive practices and assess mergers to prevent market concentration. They also emphasize universal service obligations and cross-border cooperation to extend connectivity.

The United States uses a combination of regulations and initiatives to encourage competition, with the FCC playing a pivotal role in shaping policy. Net neutrality (the principle that all internet traffic should be treated equally, without discrimination or favouritism by internet service providers), merger and acquisition reviews, mapping and data collection are among key components of the strategy.

In the MENA region, countries employ different approaches to anti-trust regulations, depending on their unique policies and market dynamics. Saudi Arabia has open access network policy, UAE has two fixed network service providers with network sharing policy (bit stream), while Jordan and Qatar have multiple network providers openly competing. In Egypt, there is one infrastructure provider for FTTH, and in Oman, open competition is enforced, and prices are published transparently.

These diverse approaches reflect the nuanced regulatory

landscapes in each region, all with the ultimate aim of promoting competition and ensuring consumers have access to a variety of broadband services at competitive prices. The mechanisms described above, while common in principle, adapt to the specific market dynamics and regulatory structures of each region, underscoring the need for a flexible and region-specific approach to FTTH deployment.

5. ACCESS TO PUBLIC ASSETS AND STREAMLINING OF PERMITTING

Access to public assets and the streamlining of permitting processes are pivotal factors that influence the efficiency and effectiveness of FTTH deployment on a global scale. This chapter delves into the commonalities and variations in these aspects, highlighting their significance in facilitating network expansion.

Access to public assets, including rights-of-way, utility poles, and conduits, is universally recognized as critical for the deployment and expansion of FTTH networks. Telecommunication companies rely on these assets to efficiently lay down fibre infrastructure and expand their networks to reach more users.

In general, governments and regulatory bodies across the world acknowledge the need to regulate access to public assets. Their aim is to create a fair and non-discriminatory environment for network operators, ensuring that these valuable resources are accessible for the common good. However, the degree of progress in implementing such regulations varies significantly across regions.

A global trend exists toward streamlining permitting processes. This involves simplifying administrative procedures, reducing bureaucratic delays, and promoting efficient deployment. The objective is to make it easier for network operators to access public assets and deploy FTTH infrastructure.

In practice, regulatory approaches differ substantially by region. In some regions, centralized and standardized procedures are adopted to facilitate access to public assets. For example, in Europe, the European Union encourages standardised procedures and regulatory harmonisation to streamline the process. In the United States, local, state, and federal governments typically regulate and manage the use of these rights-of-way. In Africa, apart from South Africa, facilitation and easier processes for broadband infrastructure deployment have been limited. For Africa to meet their broadband penetration targets for 2030 there will have to be a massive effort to address the rights-of-way fees in every country for the rollout of broadband to be accelerated. In the MENA region, governments tend to facilitate the process through local governance or even central governance coordination with various utilities providers and network operators.

6. CONCLUSION

This review has covered various aspects of FTTH deployment worldwide. The various chapters highlighted that different regions share many similarities but also have their own unique approaches to bringing high-speed internet to their populations.

Throughout various chapters, we have highlighted the fact that there is a universal acknowledgment that high-speed internet is crucial for economic growth and inclusion, and governments around the world recognize its importance. Across regions, there is a shared commitment to ensuring equitable access to affordable, high-speed internet for all citizens, with specific deployment targets reflecting the unique challenges and priorities of each nation.

Yet, the richness of this global narrative emerges from its diversity. Market dynamics, regulatory structures, and cross-border cooperation differ significantly. The nature and scale of government initiatives, the level of corporate involvement, and the sources of international funding vary greatly. Regulatory bodies, infrastructure sharing, and streamlining permitting processes also exhibit a wide spectrum of approaches, reflecting the various governance models that underpin FTTH expansion. The sources of funding of financing, like government support and private investment, also differ depending on the region. The review has also showed how regulations and infrastructure sharing can affect FTTH deployment and how this varies across the regions.

The road to getting high-speed fibre connectivity everywhere is a varied and complex one. It involves understanding the similarities and differences in various regions. By working together, learning from one another, and adapting to the specific needs of each place, FTTH rollout can be significantly accelerated. The FCGA hopes that in this way a more connected and inclusive world for all can be achieved.

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