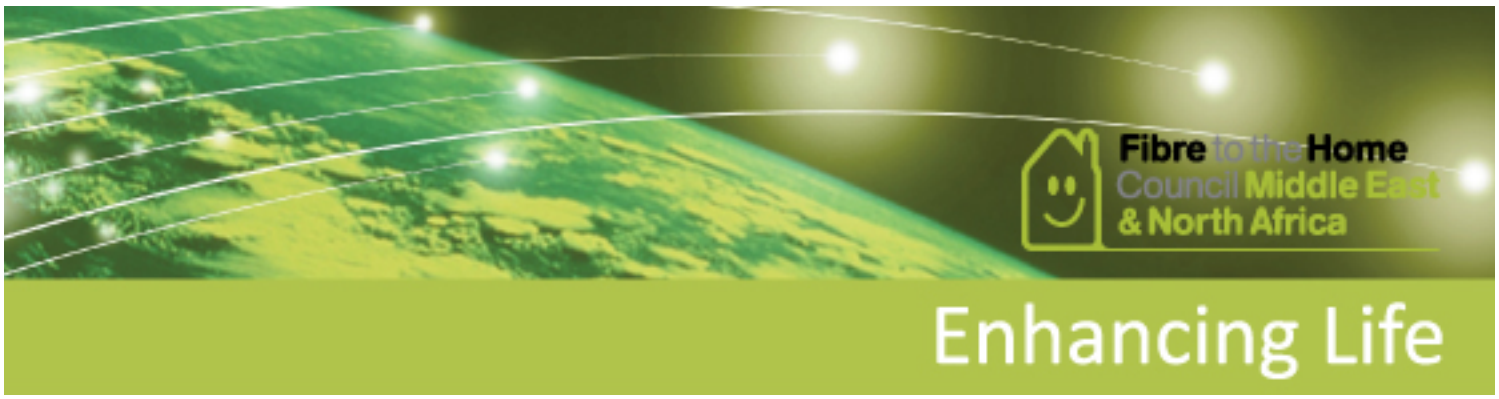


ALIGNING REGULATION WITH NATIONAL FIBRE ACCESS STRATEGY

A WHITE PAPER BY THE REGULATORY & POLICY COMMITTEE

October 2015

INTRODUCTION

This white paper explores the issues of regulatory and policy consistency required to facilitate next generation access strategies in MENA countries. The primary ambition of regulators in the period immediately following liberalisation of telecommunications markets has been on building the institutional basis for increasing competition. Although that institution-building phase is now more or less complete in the region, new broadband strategies challenge regulators to re-examine comprehensively their regime to ensure alignment with new strategic objectives.

Author: Erik Whitlock, (Salience) Regulatory & Policy Committee Member
Contributor: Stefan Stanislawski (Ventura Next) Regulatory & Policy Committee Member

EXECUTIVE SUMMARY

The focus of regulators in the period immediately following liberalisation of telecommunications markets has been on building the institutional basis for increasing competition. In the past few years, however, demands for promoting superfast broadband networks are requiring policy-makers and regulators to undertake in new and different initiatives. In exploring these issues, we come to two main conclusions:

1. To realize economic benefits of achievable through fibre access networks major investment in a long-term infrastructure is required while in the short-term demand is uncertain. This circumstance poses a number of challenges for which many nations have found it necessary to review existing policy and regulation and often tweak what had become the accepted regulatory "best practice". Because the state's role in promoting superfast broadband roll-out is more nuanced and complicated, regulators have little choice than to re-engage and re-assess elements of the regime that they have worked so hard to put in place. This regulatory consistency is vital for the success of the broadband strategy.

2. There are various components of the telecommunications regulatory regime that will have to be reviewed and potentially modified in order to comport with a nation's broadband strategy. These components may be grouped in terms of four major levers at the disposal of national telecommunications regulatory authorities:

    - Licensing policy, which may have to be reviewed and revised in order to improve the business case for fibre roll-out;

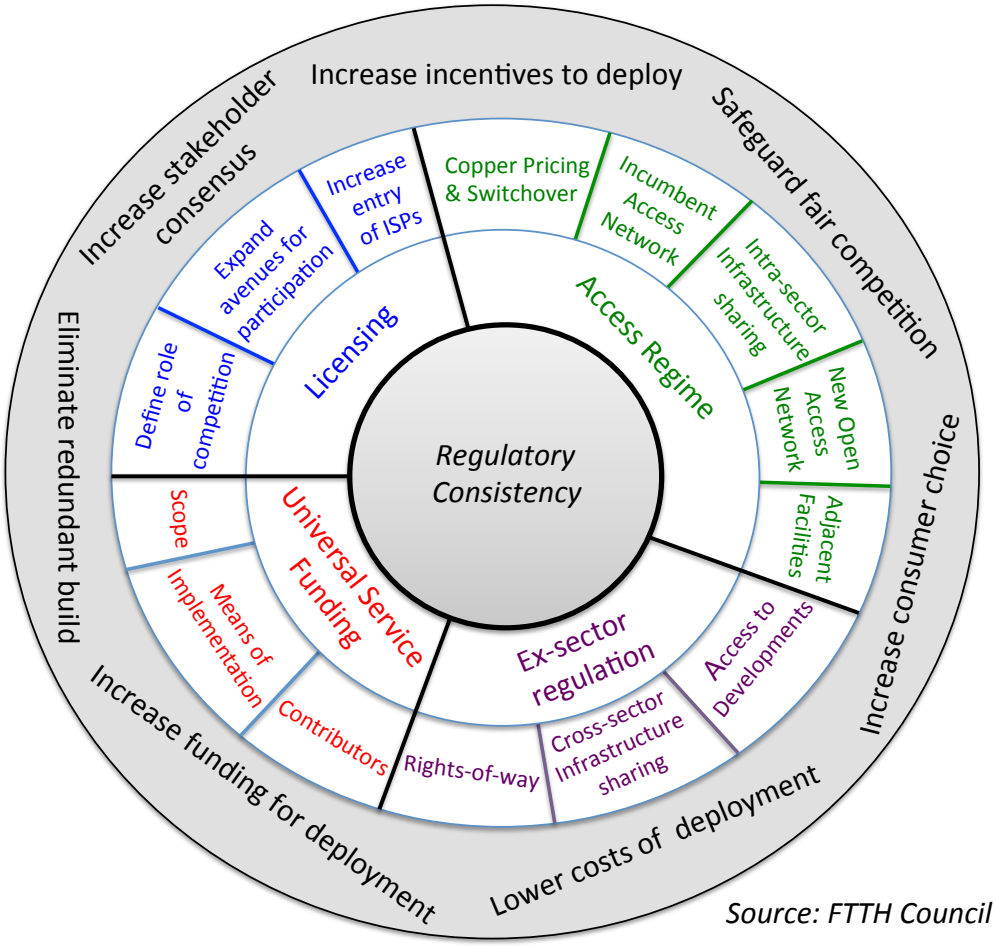
    - Access regime, which is key in determining the role for the incumbent national network in broadband strategy, but may need to be extended to include obligations on non-dominant players;

    - Universal service programs, which likely have to be re-purposed in line with broadband objectives; and

    - Initiatives that lie beyond the traditional confines of telecommunications sector regulation ("Ex-sector" regulation), but which nonetheless may now require the sector regulator's lead or active participation.

Figure 1 below summarizes these main regulatory levers that support the objectives of national broadband network deployment strategies and the positive outcomes expected if regulatory alignment is in fact achieved.

Figure 1: Regulatory Levers, Components and Outcomes for national fibre strategy



Source: FTTH Council MENA

THE EVOLVING ROLE OF THE GOVERNMENT IN THE TELECOMMUNICATIONS SECTOR

Last year, the FTTH Council MENA commissioned a report from Ventura Team to survey the current status of NBN policies in the MENA region in order to identify effective strategies to assist policy makers and regulators make the right decisions in matters of NBN policy and accelerate the FTTH deployment.

That report identified nine key dimensions of an NBN policy and, for each, selected recommended an approach among a spectrum of possible options. One of those dimensions was the consistency of regulation. In particular, the report noted:

> *An NBN is a new kind of (wholesale focused) telecom operator with a special place in the sector. Existing legislation and regulatory practice is unlikely to be ideally suited to this new environment and will need to evolve and change, preferably before significant construction begins…*

The report recommended that both the overall regulatory framework and specific measures should be consistent with, and supportive of, the chosen NBN policy. The report highlighted that such consistency would:

- *Speed up implementation of the NBN programme by removing uncertainty at multiple levels;*
- *Encourage greater private sector financial investment because the regulatory framework is clear and stable;*
- *Support growth and innovation in retail services that rely on the NBN for access to customers.*

Several years ago, many nations began to tweak what had become the accepted "best practice" approach of limited government intervention in the telecommunications sector. Indeed, many of those tweaks -- explicit or implicit in national broadband access strategies -- represented potential conflict with historically accepted best practice policy.

For example, best practice telecommunications policy has traditionally called for government to limit financial support of operators, or, where necessary (for deployment of network in economically unviable service areas) allocate such support on the basis of competitive tenders. But we have seen new broadband strategies involving government budgetary support in the form of direct investment in economically viable, as well as unviable areas. Another example: best practice in licensing has been perceived as evolving towards open entry. But we find strategies limiting entry in favour of a single open access network for a given market.

The degree of divergence from previously accepted best practice varies significantly. In Europe, the Commission early on in its search of policies for promoting broadband set out a framework for public intervention in broadband deployment that did not sacrifice its principles of supporting free and fair competition.[1] Other countries opted for a more radical approach justifying a departure from traditional practice in light of persistent market failure. Australia and Singapore are examples.

In any case, the specificities of broadband policy that a nation pursues are often associated with (and if created wisely, appropriate to) its market characteristics. For example, in many countries with significant inter-platform (telco vs. cable) competition may succeed in achieving rapid fibre deployment at reasonable cost in many geographic areas without government intervention. In fact, in these cases such intervention may be counterproductive.

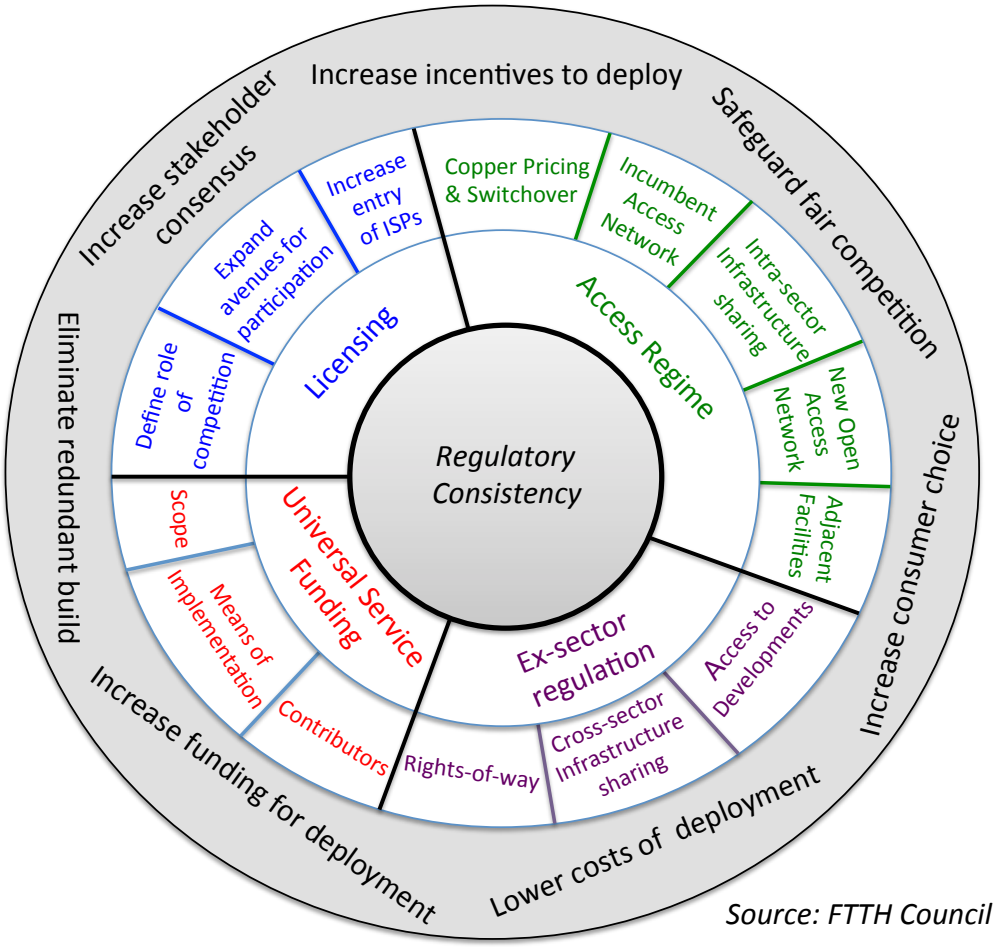
Where public intervention is appropriate, the targeting and timing may be important. Subsidizing or deployment through state-owned entities may be defensible where the expected rate of return on investment is inadequate to attract private capital. There may also be a role for the state in "test of concept" or applying competitive pressure. For example, many of the municipalities in Europe that have deployed fibre networks in the past found that these investments encouraged a private sector response, and now the need for public intervention in many areas is not as significant today.

Beyond the need for consistency between policy and market environment, there is the need for achieving consistency between broadband policy and the existing regulatory regime. This may seem obvious, but this prerequisite for success is often neglected or belatedly recognized. There is a particular risk if different government agencies are deciding broadband strategy independently from those deciding regulatory policy. It is also important to have consensus and ensure that the regulatory implications of a shift in policy are fully understand and acted upon in a timely manner.

In what follows, we have identified the four main regulatory levers that must be aligned with national fibre strategies to ensure that the promise of these strategies is realized. The four main levers—licensing, the access regime, universal service funding and ex-sector regulation—and the component elements of those levers as well as the desired outcomes are capture in Figure 1. The rest of the paper discusses these elements in detail.

[1] See for example, the EC's "Community guidelines for the application of State aid rules in relation to rapid deployment" from 2009 and Commission recommendation on regulated access to next generation access networks from 2010.

Figure 1: Regulatory Levers, Components and Outcomes for national fibre strategy



Source: FTTH Council MENA

1- LICENSING

Traditional best practice licensing policy is open. The policy assumes that the best judge for the number and type of market participants is the market itself, and the market participants themselves decide where and how to deploy network and provide services. As markets develop, policy-makers tend to introduce increasingly liberal regimes, e.g., softening the criteria for gaining licenses, replacing individual licenses with general authorisations.

NBN strategy may require nuance to this general pattern. For network build undertaken by a new entity specifically created for next generation access deployment, licensing policy must accommodate the particular niche chosen for the entity. In the Ventura Team paper this issue was framed in terms of "competitive" or "complementary" footprints. That is, the licensing regime will have to specify whether and how the entity will be complementary or competitive with existing service providers.

Clearly, the more complementary the entry, the greater likelihood that the broadband strategy will achieve stakeholder consensus as the threat to existing commercial interests is minimised. The risk of redundant or duplicative network build is also reduced in a complementary approach. However, it may prove to be financially problematic not to license new build in more economically attractive areas. Further, it may be that opening the possibility for competitive build can be the threat that tips the incumbent into replacing those legacy assets that it was previously willing to sweat.

Individual licensing is one of the more sophisticated levers the regulator has for dealing with each market participant, which means that in terms of review of provisions of existing licenses and thinking creatively about new licenses[2], a good deal of consideration must be given to alignment with broadband strategy.

Policy-makers may well have to implement changes in other aspects of licensing policy as well in order to increase the ways in which a broader spectrum of stakeholders can participate in infrastructure roll-out. For example, non-telecoms infrastructure players, who heretofore were not qualified to acquire licenses, may be ideally placed to lease dark fibre and other passive infrastructure to support broadband deployment. Municipalities or other local public agencies may have a key role to play in providing open access facilities in areas.

Another significant area in which licensing policy can impact broadband strategy is increasing the number of service providers utilising the broadband network. Liberalising the terms and conditions for those licenses paying for the usage of new broadband network should improve the business case for investment for both incumbent and new entry networks.

Finally, although not strictly speaking related to licensing policy, fibre strategy may require changes in existing licenses of incumbents to introduce new rights or obligations. For example, it is often

[2] For example, the Ventura Team paper speaks of the possibility of "collaborative" entry where the incumbent agrees to become an anchor tenant of new network in exchange for being relieved of the burden of loss-making network. These structural decision can be facilitated through individual licenses.

the case that access rights and obligations (discussed next) are set out in licenses. Thus, regulators will have to ensure that such license provisions are modified or added in a manner consistent with the strategy.

2- ACCESS REGIME

There are numerous components to the access regime that define how network facilities may be utilized in the interests of implementing broadband strategy.

Access to incumbent local network. The role the broadband strategy envisages for the incumbent will fundamentally determine the required terms and conditions of access to its network. If the incumbent's network is to act as the principal vehicle for broadband deployment, regulation will have to reflect how fair competition will be implemented across that network. One particularly radical form of access regulation of existing dominant access infrastructure provider is functional or structural separation of the infrastructure from the dominant entity. A policy choice to transfer effectively the access network from the incumbent would require significant regulatory and institutional development.

A less radical form of regulatory intervention avoids separation but mandates open access on the incumbent's fibre network. Although likely to be more quickly implementable than functional or structural separation, fibre loop availability will require the an extensive set of open access provisions, including service descriptions, network demarcation points – service access points, SLAs (provision time, repair time, availability), operational processes (order, provisioning and fulfilment, repair, billing), pricing, legal terms (insurance & liabilities, contract duration, disputes), etc.

Access to incumbents legacy access network is discussed below under "Copper pricing and switchover".

Open access to network of new entities. To the degree that the broadband strategy relies on network build of new entities, open access provisions can be made part of the original business model. With respect to next generation access deployment, the appropriate approach to access will have to be carefully chosen on the basis of existing and anticipating market conditions. Where operators are given exclusive rights or otherwise non-competitive conditions prevail, an open access regime is likely to be required. The basic elements of an open access regime for a new entity may include:

- Allowing end-user to choose any retail service provider available through the open access network;
- Allowing any appropriately authorised service provider to deliver services over the open access network;
- Allowing any appropriately authorized service provide to add access points, subject to technical feasibility;
- Offering access on fair and non-discriminatory terms and conditions; and
- Prohibiting the network operator from competing with its customers by offering retail services.

Also, the means of implementing open access to these new entities will need to be ascertained. For example, existing regulatory regime in some nations may only allow for such obligations be undertaken through access regulations if a market player is declared dominant. So, at an initial stage, commitments may have to be implemented through the licensing regime.

Copper pricing & Switchover. Irrespective of whether incumbent, new entrant or combination of both drive new fibre deployment, the role of the legacy broadband access networks will have to be assessed and necessary measures undertaken. Pricing of existing copper loops may be highly influential on the willingness of incumbents and the ability of new entrants to sell fibre services. A policy of copper-to-fibre switchover may be an essential feature of broadband strategy. Switchover has the benefits of a) neutralizing the incentive to sweat outdated technology and b) lower overall costs of maintaining access infrastructure. At the same time, competitors may rely on these legacy networks. Should this switchover be part of the broadband strategy, the phase out of legacy access will need to be reflected in regulation.

Intra-sector infrastructure-sharing. The regulator must consider whether the broadband roll-out requires additional regulation to facilitate or mandate infrastructure sharing among existing and new participants. Typically, this sharing is confined to passive infrastructure. Implementation is usually in the form a new specifically designed regulation through which the specificities of what is mandated and safeguards against anti-competitive behaviour of infrastructure sharers are detailed.

In many countries, while many areas still lack fibre coverage, others enjoy a proliferation of optic fibre cable facilities. Infrastructure sharing could eliminate this duplication and lower costs for deployment in less attractive areas.

Adjacent facilities. The success of any broadband strategy may be handicapped by gaps in addressing bottlenecks in the supply chain for broadband access services. Regulators will have to determine if there is any "unfinished business" in regulating bottleneck facilities in markets adjacent to broadband access networks, e.g., domestic backbone or international subsea cables.

3- UNIVERSAL SERVICE PROGRAMS

A typical focus of national broadband strategies is bridging the digital divide by bringing high-speed communications to rural areas. The modalities of that deployment may be influenced by existing universal service programs. The scope of what constitutes essential services to be considered for inclusion in such programs is evolving. As broadband become increasingly viewed as necessary for inclusion in a modern economy and society, universal service programs should play a role in national broadband strategy.

The means through which universal service or access programs are implemented are diverse. Often there is no explicit universal service program but rather a set of complementary price regulation and license obligations on one or more service providers that constitute the state's attempt to

ensure service to economically unviable or low income users.

More typically, explicit universal service programs have been put in place. In some countries, the universal service obligation may be saddled on a single provider (on a non-competitive basis) but the obligation, costing and funding basis is more or less transparent. Best international practice, however, suggests that some form of competitive tender, e.g., reverse auction or minimum-subsidy auction where the qualified bidder with the lowest subsidy offer wins, is introduced.

The scope and implementation of the universal service program and broadband strategy should be jointly and comprehensively reviewed so that they are aligned. For example, while the universal service programs have played an important role in the expansion and maintenance of voice service to various uneconomic areas and consumer segments, they often have not been designed to support broadband directly, other than for schools and libraries and rural medical facilities, etc. A reform program that shifted the objectives from primarily supporting voice communications to supporting high capacity broadband networks would be consistent with the transformation in the way consumers uses communications.

The universal service regime may also be altered to provide additional funding for the broadband deployment strategy in the sense of strengthening the contribution mechanism. Universal service programs are usually funded from contributions from certain licensees, but may also come from government general budget, and other regulatory sources such as the proceeds of license competitions, frequency spectrum auctions and fees. These sources, in principle, could be utilised to assist in achieving the objectives of national broadband strategy.

Indeed, the way universal service programs are funded are in some cases counterproductive to broadband deployment in the sense that the deprive the industry of investible funds that could be used to provide any households with some minimal level of broadband service or middle-mile infrastructure transporting voice and data traffic to internet access points.

4- EX-SECTOR REGULATIONS

The existing licensing framework, the access regime and universal service programs are among the telecommunications sector policies to which a new national broadband strategy will have to initiate change. There are several areas that fall outside of the sector regulator's typical remit, but where initiatives should be undertaken nonetheless to facilitate deployment. We refer to these as ex-sector regulations, and they include the following.

Easing access to rights of way – eliminating or reducing the costs and prolonged, complex and unnecessary processes for obtaining permits for accessing streets and other public land for network deployment. This is particularly relevant for new entrant-led network build, as incumbents can often use their existing ducts for fibre. New entrants often need to acquire new rights of way to construct their own assets. Part of the problem is that a number of different public agencies—municipalities, ministries, utilities--may have overlapping jurisdiction over relevant rights of way. In many countries, licensees do not necessarily have the right to public land for network deployment.

In others, although such rights are in principle protected, the process and costs of exercising these rights are exorbitant.

The sector regulator can play a key role in resolving some of these issues whether by taking the lead coordinating action to provide new entrants with improved access and to facilitate investment in municipal rights of way through authorization reform or public-private partnerships and pushing for change in existing legislation to improve access rights.

Mandating access to property developments – ensuring that large residential and business property developers cannot obstruct, raise costs or deny choice in service provision to their residence and tenants. In many instances large property developments are a private undertaking of a single company. These developers often select one telecommunication service provider or deploy telecommunications infrastructure themselves and in so doing exclude other service providers from deploying infrastructure, and/or rendering retail services across the monopoly infrastructure. The sector regulator can champion regulation to ensure that community ducting and other passive infrastructure between and within buildings is available to more than one service provider.

Cross-sector infrastructure deployment – there are numerous opportunities where non-telecom investment may give rise to cross-sectoral infrastructure sharing:

- where infrastructure elements are being deployed by the non-telecom network for its own use (e.g. towers for power transmission and poles for distribution, fibre optic for railway signalling or for control systems on gas or electricity transmission networks);
- where such elements are added on to planned or on-going construction or rehabilitation (e.g. ducts for utilities alongside highways); and
- where rights of way might exist (e.g. alongside water or sewage pipes, roads) and need to be developed, either by the infrastructure owner or the user of the right of way

However, these are opportunities are often not exploited for reasons ranging from regulation of the utilities themselves, lack of awareness of network synergies, etc. The sector regulator here too can play a role in clearing obstacles and encourage utilities to lease or co-deploy infrastructure of utility or transport companies in a manner that is competitively neutral.

Sector regulators are naturally well placed to take the lead in lowering the costs of infrastructure through active consultation among all levels of government will be needed to put in place pro-deployment policies such as joint trenching, conduit construction and placement of broadband facilities on public property.

They can also play a key role in

- developing guidelines for joint use and public rights-of-way policies that will ensure that best practices.
- resolving disputes among utilities, public agencies and telecommunications providers in the area of infrastructure sharing and access to rights of way multiple jurisdictions.
- extending rights of access to infrastructure that, while not telecommunications per se are bottleneck facilities for telecommunications service provision.

- promoting “dig once” regulation or legislation applying to infrastructure projects along rights-of-way that would facilitate the construction of conduits for use by a wide variety of infrastructure providers.