



International Long Distance Telecommunications Service (ILDTS) Policy

A Report on the Public Consultation run by the
Bangladesh Telecommunications Regulatory Commission
(BTRC)

22 March 2018

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY	3
1.1 AIMS AND OBJECTIVES	3
1.2 CONSULTATION PROCESS	3
1.3 CONSULTATION RESPONSES.....	4
1.4 RECOMMENDATIONS	5
1.5 IMPLICATIONS OF THE PROPOSED ROADMAP	6
1.6 REGULATORY REQUIREMENTS	8
1.7 FURTHER CONSULTATION QUESTIONS	8
2 CURRENT MARKET AND REGULATORY SITUATION	10
2.1 THE CURRENT ILDTS POLICY	10
2.2 ANALYSIS OF MARKET IMPACTS AND INDUSTRY CONCERNS	12
2.3 LICENSING	14
3 RESPONSES TO THE CONSULTATION QUESTIONS	16
3.1 OVERALL VISION FOR THE ICT MARKET	16
3.2 SEPARATE LICENCES FOR VOICE AND DATA	18
3.3 SEPARATE LICENCES FOR DOMESTIC INTERCONNECTION	19
3.4 SEPARATE LICENCES FOR INTERNATIONAL INTERCONNECTION	20
3.5 FUTURE LICENSING FRAMEWORK	22
3.6 ROADMAP TO UNIFIED LICENSING	23
4 POLICY RECOMMENDATIONS	25
4.1 STAGE 1: CONSOLIDATION WITHIN EXISTING LICENCE CATEGORIES	25
4.2 STAGE 2: DEVELOPMENT OF STRONG COMPETITION RULES	26
4.3 STAGE 3: VOLUNTARY TRANSITION TO THREE NEW LICENCE CATEGORIES	27
4.4 STAGE 4: EXCLUSIVE USE OF THE NEW LICENCE CATEGORIES	30
4.5 TIMELINES.....	31
ANNEX A: OUTLINE COMPETITION MANAGEMENT REGIME	33
STEP 1: MARKET DEFINITION	34
STEP 2: SUSCEPTIBILITY OF CANDIDATE MARKETS TO EX-ANTE REGULATION	36
STEP 3: DOMINANCE ASSESSMENT	37
STEP 4: IMPOSING APPROPRIATE REMEDIES.....	39
ANNEX B: DETAILED CONSULTATION RESPONSES	43

1 EXECUTIVE SUMMARY

1.1 AIMS AND OBJECTIVES

This report is part of a technical assistance by ITU under the guidance of Senior Adviser, ITU Regional Office for Asia and Pacific, for BTRC to develop a new policy for International Long Distance Telecommunications Services (ILDTS) in Bangladesh. The current policy dates from 2010 and needs revision in light of both technical (e.g. the deployment of next generation networks using IP technology) and regulatory developments (e.g. emerging international best practice in unified licensing and general authorisations).

The aim of the assignment is to establish a robust regulatory framework for ILDTS that does not artificially constrain licensees and enables them to develop affordable and widely-available services to meet the needs of corporate customers and consumers throughout Bangladesh.

1.2 CONSULTATION PROCESS

An industry workshop was held in Dhaka on 30 November 2017 outlining the need for change in the ILDTS Policy and identifying three options for the future:

Option 1: General authorisation.

- Under this option any company would be entitled to provide any communications services and operate any communications network so long as they meet the general requirements of a class licence. The class licence would set out the basic rights and obligations and regulatory requirements associated with the provision of telecoms networks and services, which would apply equally to all providers.
- It might be possible to remove even the requirement for a class licence and simply allow open entry without any obligations beyond the general rules and regulations applicable to the sector.
- A middle ground would require registration or notification to BTRC.

Option 2: Network licences but general authorisation for services.

- This option is equivalent to Option 1 for service providers (e.g. of voice or internet services) but any company that owns and operates network facilities would be required to obtain a Network licence. The Network licence would be specific to the individual company, but would have a common set of rights, obligations and charges.

Option 3: Separate licences for ANS (Access Network Services) and NCS (National Carrier Services).

- This option is similar to Option 2, but with separately defined licences for ANS and NCS. The NCS licence would replace all the current individual licences other

than the ANS licences that would remain as they are. This would allow for different terms and conditions to apply to NCS as for ANS.

Stakeholders were invited to comment on the matters raised in the workshop and to answer the following specific questions:

1. What is your opinion on the overall vision of an open, converged, competitive market in Bangladesh?
2. Is there any good reason to maintain separation of licences for voice and data services?
3. Is there any good reason to maintain the separation of licences for domestic interconnection (ICX and NIX) from the licences for ANS and National Telecommunications Transmission Network (NTTN)?
4. Is there any good reason to maintain the separation of licences for international interconnection (IGW and IIG) from the licences for ANS and NTTN?
5. What are your views on the three options for licensing of telecommunications providers identified in this report:
 - General authorisation.
 - Network licences but general authorisation for services.
 - Separate licences for ANS and NCS.
6. What barriers do you see to the implementation of unified licences in Bangladesh?
 - How might they be overcome?
 - What timeframe would be required for the migration?

1.3 CONSULTATION RESPONSES

BTRC received 9 responses to its consultation on the future of ILDTS Policy in Bangladesh representing the views of individual licensees and associations of different licensee categories. BTRC appreciates the full engagement of the industry with this important exercise. A summary of the responses to each of the consultation questions is provided in Chapter 2. The full responses are provided in Annex A.

As is normal in this kind of exercise, opinions were submitted on both sides – supporting the status quo and supporting a move to unified licensing. The views that were expressed obviously served the commercial interests of the respondents, but some also provided justifications based on the overall economic and societal interests of Bangladesh.

Whilst all respondents share the overall vision of an open, converged and competitive market, concerns were expressed about the implications of moving too quickly from the current ILDTS Policy. Some respondents saw this transition as undermining investments that have been made as well as threatening jobs; however, others see the possibility of convergence bringing further investment, greater

efficiencies, and improved price/performance of services.

1.4 RECOMMENDATIONS

The current ILDTS Policy in Bangladesh has been successful in that, it has created competition in the provision of infrastructure and services and enabled the development of indigenous telecommunications companies. However, the policy has also created structural inefficiencies through the artificial limitations of each licence and, perhaps even more significantly, through the proliferation in the number of licences issued. As the country moves forward into a converged digital economy the need to adapt the current policy is becoming more evident, and all parties recognise the need to transition towards a more holistic licensing framework. The challenge for BTRC is to manage that transition so as to achieve incremental economic and societal gains.

A four-stage roadmap is recommended:

- Stage 1: consolidation within existing licence categories
- Stage 2: development of strong competition rules
- Stage 3: voluntary transition to three new licence categories
 - Class Licence (or possibly a General Authorisation¹) for Retail Service Provision;
 - A Class Licence (or possibly Individual Licences) for facilities-based International Network Services;
 - Individual Licences (or possibly a Class Licence) for facilities-based National Network Services.
- Stage 4: the three new licence categories become the only available options upon expiry of the licences issued under the current ILDTS regime.

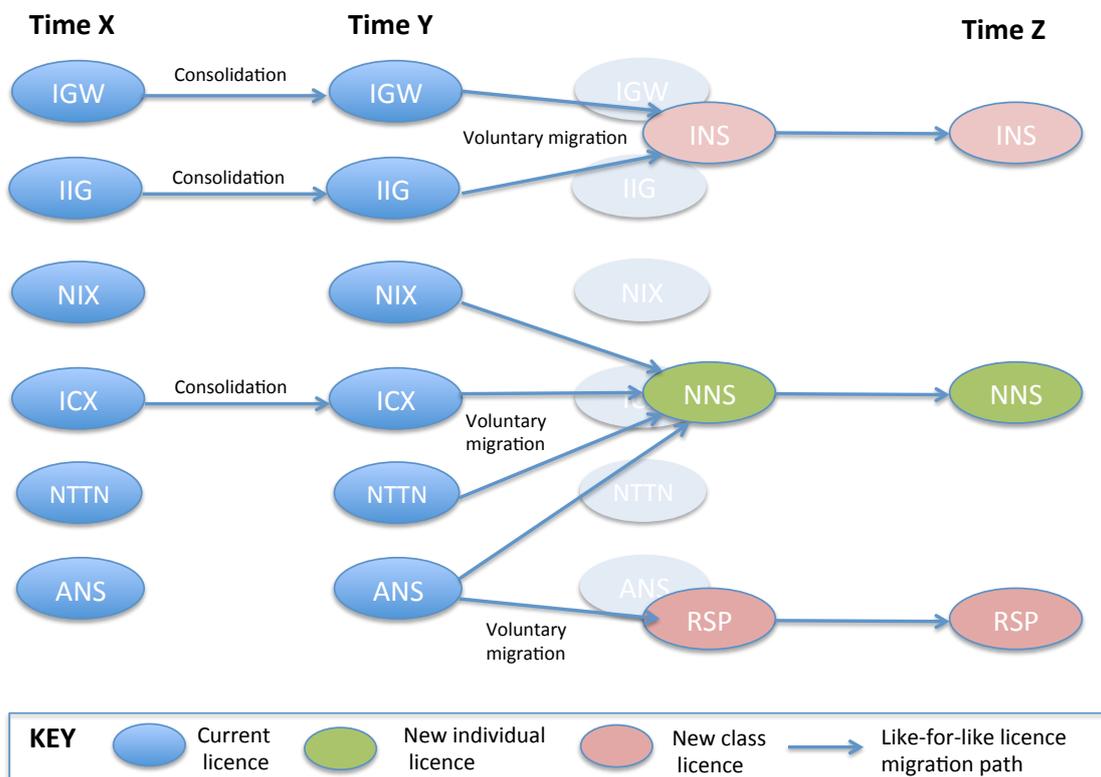
The proposed licensing roadmap for Bangladesh is shown in Figure 1.1. There are three key milestones to be observed, but the precise timing of each of them has yet to be determined.

- Time X effectively marks the start of the roadmap, and will be triggered by BTRC relaxing conditions on current ANS licensees to interconnect with all ICX, IGW and IIG licensees, and removing the segregation between voice and data in all layers except ANS. This is likely to start a period of consolidation within each of these licence categories. Time X could be as early as later this year (2018) following a period of consultation with industry stakeholders.

¹ Section 36 of the Act may preclude the option of a General Authorisation.

- Time Y is when the three new licence categories are introduced. In order to provide an appropriate notice period and carry out the necessary preparatory work, it is suggested that Time Y should not be before mid-2019. Before Time Y BTRC must draft, consult upon and adopt a comprehensive competition management regime to enable effective regulation of potential SMP providers in relevant telecom markets. After Time Y all licensees will have the opportunity (but not the requirement) to migrate from their existing licences into the new licensing framework.
- Time Z is when all the current licences are withdrawn and all industry participants must then operate under one (or more) of the three new licence categories. Theoretically Time Z could be as late as 2027 (when the last of the existing licences expire) but, once most licensees have voluntarily migrated to the new framework, BTRC could impose an earlier cut-off date, after giving a suitable period of notice (e.g. 2-3 years).

Figure 1.1: Roadmap to a new ILDTS licensing framework



1.5 IMPLICATIONS OF THE PROPOSED ROADMAP

Strengthening the capacity of local entrepreneurs and safeguarding their business against abusive dominance of SMPs:

One of the successes of the current ILDTS policy is to encourage a number of local entrepreneurs to enter into the telecommunication market. The current policy proposal, following the same spirit, aims at strengthening the competency,

competitive capacity and business opportunity for these local companies. However there is a fear among some of the local entrepreneurs that the dominant players, supported by significant foreign direct investment, would abuse their market power and small operators will be phased out. This possible scenario has been particularly addressed in the proposed roadmap.

There are three different mechanisms through which such abusive business practice would be addressed:

1. In Stage 2 SMP regulation would build enough legal frameworks to protect the smaller operators against any abusive business practice of incumbent and bigger operators.
2. Separating of Time-X and Time-Y would give enough time duration for the local business to adjust business strategy and resource allocation through consolidation and business diversification. BTRC may also set a different Time-Y for operators that are found to have SMP as a result of the study in Stage 2. It will allow these small operators to become relevant and more dynamic to be accommodated into the upcoming era.
3. Opportunity of providing new range of services, across all the network and service layers would perfectly enable these entrepreneurs to move more efficiently with their smaller size and market knowledge. This way they can come into wholesale agreement with incumbent ANS operators and they can provide new voice and data service provisions to domestic and corporate customers.

Consolidation under current structure:

Irrespective of the connectivity provisions set in the 2010 ILDTS policy, the market observed huge difficulty in accommodating the large number of IGWs and ICXs. Eventually it was clear that these large numbers cannot be sustained even under the business protection guarantee of the licensing guidelines (for example: guaranteed call distribution for ICXs). Thus, IGW operators came together and formed a separate layer to consolidate the incoming and outgoing traffic, to maintain proper distribution of traffic and for proper distribution of revenue (at fixed rate). Compared to the large number of IGWs, very few are managing this additional layer and they have higher share in this revenue distribution agreement.

Though ICXs have not developed such additional layer, they are connected to a common point of interconnection with the ANSs. This points to the unofficial consolidation in this interconnection market and points to the viability and sustainability of future consolidation. The investment and employment attached with these markets will be mostly carried forward into the consolidated market and the emerging stronger entities will bring more opportunity to this sector.

Impact of OTT:

With the increase of OTT service usage, introduction of 4G and availability of cheaper smartphones, ICX and IGWs will become increasingly irrelevant. Bangladesh is observing a stronger trend of declining international incoming traffic

through IGWs and a significant portion of that is supposed to be attributed to OTTs. This trend will speed up in coming 3-4 years with the result that ICXs and IGWs will become redundant. For these companies to survive they need to have an opportunity, such as that afforded by the proposed roadmap, to expand their range of services.

1.6 REGULATORY REQUIREMENTS

For the Roadmap to succeed the following actions will be required of BTRC.

Stage 1:

- Promulgate regulations to remove all requirements restricting licensees from offering voice or data services and adapt licences as required (after due consultation and notice period).
- Promulgate regulations to remove the requirement for ANS to distribute traffic between all ICX and IGW, and adapt licences as required (after due consultation and notice period).

Stage 2:

- Issue a regulation on Competition Management that identifies relevant markets, determines dominance within those markets, and establishes remedies (i.e. rules of behaviour) to be applied to dominant suppliers.
- Establish a licence policy to determine for which facilities and services individual licences will apply and which will be offered under class licences, and establish a policy on licence fees.
- Prepare application forms and licence pro-forma.
- Prepare and issue licences for INS, NNS and RSP.

Stage 3:

- Issue orders (if necessary) to terminate licences issued under the current ILDTS Policy and require licensees to migrate to the new licensing framework.

1.7 FURTHER CONSULTATION QUESTIONS

BTRC would appreciate industry comments on anything that has been proposed in this report. However, comments are specifically requested on the following:

1. When should the roadmap begin (Time X)
2. How might consolidation of ICX, IGW and IIG best be achieved?
3. When should the new licence categories be introduced (Time Y)?
4. Is any BTRC action other than the development of competition rules required before time Y?

5. How might existing licensees best be incentivised to adopt the new licences?
6. When should the new licence regime become mandatory (Time Z)?

2 CURRENT MARKET AND REGULATORY SITUATION

2.1 THE CURRENT ILDTS POLICY

The Bangladesh Telecom Act 2001 (Amended in 2010) established the Ministry of Post and Telecom (MoPT) as the policy formulation body and Bangladesh Telecom Regulatory Authority (BTRC) as the Authority for the telecommunications sector responsible for regulatory administration.

In 2007 MoPT formulated its first ever International Long Distance Telecom Service (ILDTS) Policy. Under the ILDTS Policy 2007, Government deployed a layered structure of licensing regime segmenting voice and data (Internet) services. While implementing the policy, the Government also addressed the domestic network architecture by introducing mid-layer operators aligning with the top layer operators.

In brief, ILDTS Policy 2007 introduced three layers: Gateway layer, Interconnect layer and Access layer for both voice and data verticals. The network architecture of the current telecom sector in Bangladesh is therefore very complex as there are many operators in each layer of the network.

The ILDTS Policy was revised in 2010 because the “the 2007 policy did not fully succeed in achieving its laudable objectives”. The framework “fell short in delivering low-cost international calls and of choice in terms of price-quality configurations to residential and business customers”. Also, “illegal bypass continued, even in the context of greatly increased legal traffic, depriving the government of legitimate revenues from the traffic itself and from taxes levied from the licensed operators.”

The 2010 policy retained the same objectives as the 2007 policy, but modified the means by which they were to be achieved: “The new ILDTS Policy will help to transform the idea of Digital Bangladesh into a reality.”

2.1.1 Policy objectives

The current ILDTS Policy had eight objectives:

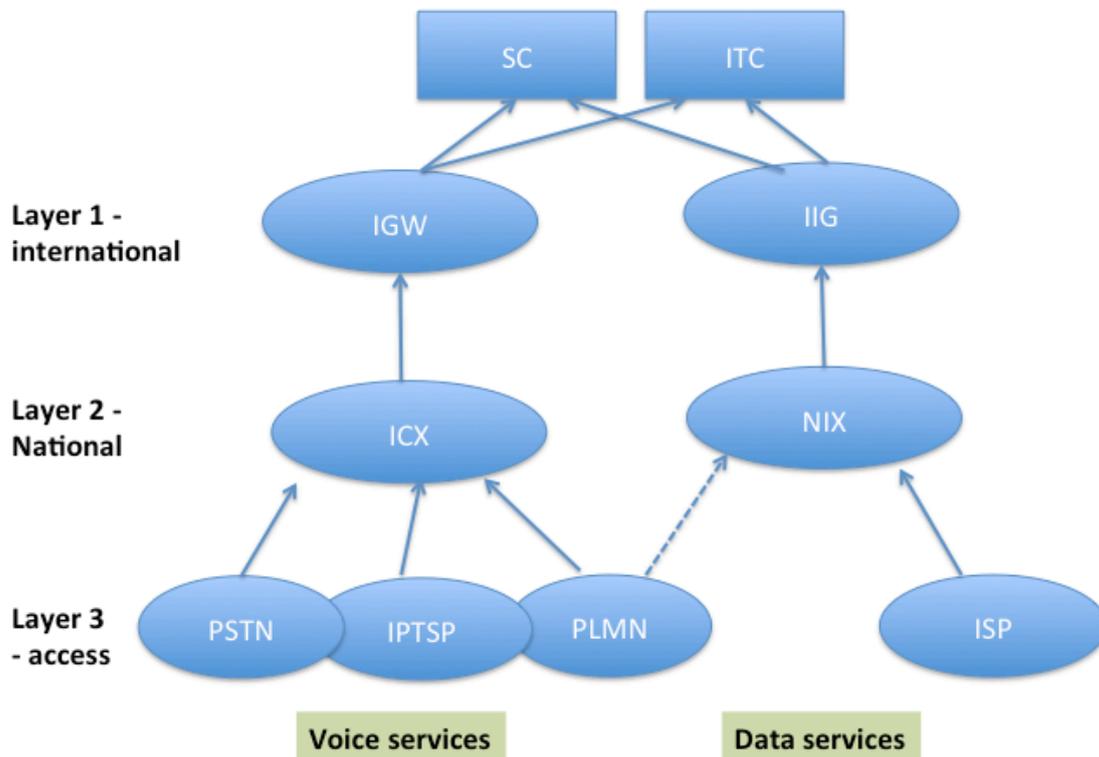
1. Uphold subscribers' interest, providing low cost international services using modern technologies.
2. Encourage local business and enterprises in the telecommunications sector
3. Ensure healthy and motivating revenue to all stakeholders, service providers and other related entities.
4. Stop foreign currency siphoning and money laundering.
5. Ensure proper revenue earning of the government
6. Ensure national security and protect national interest
7. Encourage NGN technology
8. Facilitate new employment opportunities.

2.1.2 Framework for ILDTS

The current policy framework is constructed in three layers:

1. **International layer.** All international voice calls, including VoIP calls originating from Bangladesh, are routed through international gateways (IGWs). In a similar manner, all data traffic is routed through International Internet Gateways (IIGs) except for data that is handled by international private leased circuit (IPLC). The IGWs and IIGs operate primarily over International Long Distance Cable (IDLC), but with satellite back-up facilities. IGWs are primarily located in Dhaka, but IIGs have to operate points of presence (POPs) in at least two locations, as allocated by BTRC, so that POPs exist in at least 11 specified cities.
2. **National layer.** All national inter-operator voice calls, including VoIP calls, are routed through Interconnection Exchanges (ICXs). In the same manner, all national inter-operator data traffic is to be routed through National Internet Exchanges (NIXs). Each ICX / NIX has to operate points of presence (POPs) in at least two locations, as allocated by BTRC, so that POPs exist in at least 11 specified cities.
3. **Access layer.** Access Network Services (ANS) operators provide services to end-users. They use either fixed (Public Switched Telephone Network, PSTN) or mobile (Public land Mobile Network, PLMN) technology. They interconnect via the ICX (for voice) and the NIX (for data) traffic. ANS have to interconnect with a minimum of three ICX operators, whether it is efficient to do so or not.

Figure 2.1: The network topology constructed by the ILDTS 2010 Policy



2.1.3 Current Licensing Structure

Under the 2010 ILDTS Policy the following categories of licence are issued:

1. IGW Operator Licence (24 licensees are operational)
2. ICX Operator Licence (26)
3. IIG Licence (36)
4. IP Telephony Service Provider Licence (36)
5. NIX Operator Licence (2)
6. Submarine Cable Licence (2)
7. International Terrestrial Cable Licence (6)
8. International VoIP Call Termination Licence (881)
9. IPTV Services Licence.

All licensees have to be Bangladeshi entities. A business entity is allowed to have more than one licence.

Subsequent to the 2010 ILDTS Policy a number of changes have been made to these licence categories and a further category of licence was introduced: the National Telecommunications Transmission Network (NTTN) licence. NTTNs are designed to circumvent the problem of uneconomic duplication of facilities by ANS in Bangladesh. In particular NTTNs help to reduce clutter within the cities and, through network roll-out conditions within their licences, to ensure deployment of broadband infrastructure in rural Upazillas.

2.2 ANALYSIS OF MARKET IMPACTS AND INDUSTRY CONCERNS

The industry structure created as a result of the 2010 ILDTS Policy is complicated and fragmented, and adds avoidable costs that are ultimately borne by end-users. The aim of low-cost, high-quality and widely available communications services cannot be achieved when so many different parties are involved in the provision of each service. Operators and service providers in each part of the value chain complain of the high costs of interconnection services and also of the difficulty obtaining guaranteed service levels. Ultimately this results in poor price-performance for consumers, thus restricting the development of Digital Bangladesh.

The 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 fact, because of fragmentation operators are mostly sub-scale and contribute to Government revenue below optimal levels. As the next chapter demonstrates, international best practice is to simplify the licensing framework through unified licences and general authorisations. This approach will provide a better way forward in Bangladesh as well. Government revenue targets could still be achieved through alternative approaches such as taxes on profits and revenue-sharing arrangements (such as were included in the NTTN licences). Government revenue from this sector is best secured on the back of an industry that has policy and regulatory settings that encourage efficiency, investment, growth and innovation.

The focus of the 2010 policy was on voice traffic and, in particular, the prevention of revenue-leakage onto VoIP services. In this task it was seeking to hold back an irresistible tide that has swept through the industry over recent years. Inevitably it has not succeeded, but may have deferred more practical engagement with the issue in the meantime. Internationally there is now recognition that over-the-top services provide the way forward, bringing high functionality to consumers and doing so at low prices. Most traffic is therefore migrating to IP and it is possibly unnecessary to continue separating voice and data within the ILDTS policy. Such a separation will be untenable in a short time, in any case.

As traffic increasingly migrates to data (and even voice traffic is IP-based) the need for ICXs will disappear. It seems unnecessary now, and will be increasingly counter-productive to maintain the requirements of the 2010 policy: that ICXs are separately licensed; that they maintain a minimum of POPs in specified locations; and that all interconnection traffic has to go through the ICX. To some extent the uneconomic consequences of these requirements have been obviated by the advent of NTTNs that also operate as ICX, NIX, IGW, and IIG – but this very fact suggests strongly that it would be better to aggregate these various licence types and allow the integrated providers to determine the most cost-effective arrangements for transmission and interconnection.

The risk with this approach is to further concentrate market power within the industry. ISPs already complain about the market power of the NTTNs, in particular the two private NTTNs which are rapidly gaining economies of scale. While the mobile network operators dominate the retail market (Grameenphone, Robi and Banglalink together provide access to over 95% of subscribers), 60-75% of data traffic is generated by the ISPs and carried over the NTTNs. The large number of ISPs mitigates the effects of market power by ensuring competition at the retail level, but there are no such constraints at the wholesale level.

ISPs argue that regulation of the NTTNs is essential in order to obtain the open access to infrastructure that is the lifeblood of the digital economy. For the private NTTNs this would require BTRC to identify wholesale infrastructure access as a market, to determine which if any of the NTTNs is dominant in the market, and then to establish effective remedies such as: colocation, access to towers, ducts and fibres, and regulated wholesale prices. For the public NTTNs, where public money is being invested in new national infrastructure, open access should be one of the foundation principles for the use of public funds, as it is in other countries.

On the other hand, NTTNs have committed to major investment programmes, with the specific objective of providing broadband services in rural areas. That investment needs to be encouraged, so regulatory remedies have to be proportionate and focused on bottlenecks to effective competition in downstream retail markets. Just as the Government has offered relief from revenue sharing arrangements for 6 years while the NTTNs roll out their networks, so also regulatory requirements need to be sensitive to the requirement to fund innovation and cover investment risk. Short-term gains in terms of lower prices should not be allowed to jeopardise the longer-term goals of Digital Bangladesh, in particular the provision of universal broadband access.

Many of these concerns were addressed in the Bangladesh National Telecommunications Policy that was prepared, with ITU support, in 2013. However, it is understood that the policy was never formally adopted by the MoPT.

2.3 LICENSING

The current licensing regime has the major advantage of allowing the Government to control developments within the telecommunications sector. Individual licences confer rights and obligations on the licensee, in a service-specific and technology-specific manner. Conditions within those licences ensure that the Government can enforce industry developments, control prices and protect national security. The granting of individual licences also ensures that the Government obtains a continuous revenue stream from the sector.

Licensees are all, to a greater or lesser extent, restricted in what they can do. This creates a number of substantial and permanent barriers to growth within the sector, including barriers to efficiency, barriers to convergence and barriers to investment and economic development. It is to overcome these barriers that most countries have moved to a regime of general authorisation for almost all services and for most network facilities within the telecommunications sector (see Chapter 4). The risk for Bangladesh is that unless it follows suit the country is likely to fall further behind in the development of the digital economy and in international competitiveness.

A further concern with the current regime is that the separation of licences into categories defined by layers in the network hierarchy (i.e. IGW, ICX, IIG, NIX, NTTN, ANS) creates an artificial separation between companies. This adds substantial costs inefficiencies both technically (e.g. in the interconnection arrangements) and commercially (e.g. each company wants its own profit margin, and is not necessarily concerned with the end-user price).

A number of options for progress exist including:

- **Option 1: General authorisation.** Under this option any company would be entitled to provide any communications services and operate any communications network so long as they meet the general requirements of a class licence. The class licence would set out the basic rights and obligations and regulatory requirements associated with the provision of telecoms networks and services, which would apply equally to all providers².
- **Option 2: Network licences but general authorisation for services.** This option is equivalent to Option 1 for service providers (e.g. of voice or internet services) but any company that owns and operates network facilities would be required to obtain a Network licence. The Network licence would be specific to the individual company, but would have a common set of rights, obligations and

² It would be possible to remove even the requirement for a class licence and simply allow open entry without any obligations beyond the general rules and regulations applicable to the sector.

charges.

- **Option 3: Separate licences for ANS and NCS (National Carrier Services).**
This option is similar to Option 2, but with separately defined licences for ANS and NCS. The NCS licence would replace all the current individual licences other than the ANS licences that would remain as they are. This would allow for different terms and conditions to apply to NCS as for ANS.

It should be noted that in all cases companies that require access to radiofrequency spectrum would still need to obtain that through a separate spectrum licensing process.

3 RESPONSES TO THE CONSULTATION QUESTIONS

An industry workshop was held in Dhaka on 30 November 2017 outlining the need for change in the ILDTS Policy as described in Chapter 2 above. Stakeholders were invited to comment on the matters raised in the workshop and to answer the following specific questions:

1. What is your opinion on the overall vision of an open, converged, competitive market in Bangladesh?
2. Is there any good reason to maintain separation of licences for voice and data services?
3. Is there any good reason to maintain the separation of licences for domestic interconnection (ICX and NIX) from the licences for ANS and National Telecommunications Transmission Network (NTTN)?
4. Is there any good reason to maintain the separation of licences for international interconnection (IGW and IIG) from the licences for ANS and NTTN?
5. What are your views on the three options for licensing of telecommunications providers identified in this report:
 - General authorisation.
 - Network licences but general authorisation for services.
 - Separate licences for ANS and NCS.
6. What barriers do you see to the implementation of unified licences in Bangladesh?
 - How might they be overcome?
 - What timeframe would be required for the migration?

BTRC received 9 responses to the consultation. The full responses are provided in Annex B. In this chapter they are summarised and the main policy implications are identified. The suggested policy recommendations are given in Chapter 4.

3.1 OVERALL VISION FOR THE ICT MARKET

1. What is your opinion on the overall vision of an open, converged, competitive market in Bangladesh?

3.1.1 Respondents' comments

There was unanimous support amongst respondents for the vision of an open, converged and ICT competitive market in Bangladesh. But behind this unanimity lies a fundamental divergence of views.

- One group considers this vision as “good in theory but destructive in reality” or “not indispensable at this moment” and the industry should “should be

allowed to flourish without introduction of unhealthy regimes that may be imposed externally or be a result of inadequate study and consideration of consequences”. This group of respondents points to the fact that many of the current licences do not expire until 2027 and “changing the license regime only after 5-6 years of operation after issuance of license is preposterous” because “Bangladeshi investors who have invested in licenses will be facing a huge loss and also the job market that has been created will be destroyed; lot of people will lose their jobs and their families will be in total distress.”

- Another group of respondents considers that radical change is urgently needed. They see that the “Bangladesh telecom licensing regime is right now very much complicated”, “is far from ideal scenario and needs an overhauling” and “the multi-layered telecom licensing structure hardly adds any value to the service standard while increasing the cost for the consumers”. As a result these respondents believe that a “move towards open and converged licensing regime is very much rational, justified and time demanded change for the further growth of telecom industry in Bangladesh”.

The reality behind these opinions is not in dispute: “Over the years after the liberalization of the sector in 1996 numerous categories of licenses have been created and issued”. “There are currently more than 2000 licensees in different categories.” “Many of these licensees are not successful and some licensees are struggling to be profitable.”

It is likely that the move to an open, converged and fully competitive market will result in many of the small licensees being squeezed out of the market. The dilemma is whether those who lose out in such a transition should be compensated; whether the moves to unified licences should be delayed until the expiry of the current licensing regime in 2027, or whether “the Government should not have any moral obligation to provide artificial life support to such licensees other than allowing sales of their assets in the secondary market”.

All may agree with one respondent, however, who pointed out that: “without proper planning and without proper road map, it could create unstable situation and could lower service quality ... [and] small investors who have already invested in market might incur losses.”

3.1.2 Policy implications

Undoubtedly, as with any policy change, there will be winners and losers if Bangladesh adopts a unified licensing regime. Care needs to be taken to ensure that there as few losers as possible, and consideration could be given to compensation in some circumstances, but none of this should stand in the way of adopting a policy that has widespread backing and is in the national economic

interests. If Bangladesh does not introduce a converged, open and competitive ICT market it risks losing out on economic development, whereas the focus should be to improve its ranking in the ITU's ICT Development Index³.

The relevant question is not therefore whether this vision should be implemented, but how it should be implemented so as to maximise the overall economic benefits and minimise any costs that may be unduly imposed on individual licensees.

3.2 SEPARATE LICENCES FOR VOICE AND DATA

2. Is there any good reason to maintain separation of licences for voice and data services?

3.2.1 Respondents' comments

All but two of the respondents believe that there is no good reason to maintain separation of licences for voice and data services. Their common view was summed up by one respondent thus: "As we have entered into an era of technology and service convergence, there is no reason to maintain separate licenses for voice and data service rather it should be converged."

The other two respondents⁴ question whether "those state of affairs which forced us to have separation of licenses for data and voice [in 2007], have already disappeared or still prevailing?" They answer in the negative arguing that:

- status quo has not been changed and illegal VoIP trends are still prevailing;
- unification of IGW and IIG will only help present ANSs; and
- the proposal in the Consultation document will take the telecom sector back to square one and with no check and balance [created through the additional layer of ICX] and with no way of ascertaining transparency [in payment of fees to Government, especially for call termination].

3.2.2 Policy implications

The resolution of this argument depends on the whether there have been substantial and significant changes since 2007 that justify a change in policy. In the consultation document it was noted that the 2007 policy was drafted at a time when the key regulatory concerns were:

- Breaking up the international monopoly
- Building local telecom entity

³ Bangladesh ranked 147th in 2017.

⁴ Their submissions are in many sections identically worded.

- Curbing illegal VoIP traffic
- Encouraging moves to next generation network (NGN).

By 2010 when the policy was amended it was noted that: “the 2007 policy ... fell short in delivering low-cost international calls and of choice in terms of price-quality configurations to residential and business customers” and that “illegal bypass continued, even in the context of greatly increased legal traffic, depriving the government of legitimate revenues from the traffic itself and from taxes levied from the licensed operators.” As some respondents noted these same statements could still be made today, which leads to either one of two conclusions:

- the policy needs to be maintained because the landscape hasn’t changed, or
- the policy needs to change because it hasn’t achieved the objectives that were set.

The policy has achieved some of the goals it set: competition has been created in international services (voice and data); new local entities (NTTNs, IIGs, ISPs) have been successfully established and they are deploying NGNs. The only objective that hasn’t been fully achieved is the curbing of VoIP traffic, but the reality is that regulators around the world have discovered that VoIP and other OTT services cannot readily be curbed, bring considerable economic advantages and so are now an accepted part of the ICT market.

Thus, like it or not, “currently, both voice and data traffic are delivered through IP technology, so, there is no need to differentiate between voice and data communication layers.” A revised ILDTS policy needs to accept this reality whilst ensuring that the other achievements from the 2007/10 policy do not unravel.

3.3 SEPARATE LICENCES FOR DOMESTIC INTERCONNECTION

3. Is there any good reason to maintain the separation of licences for domestic interconnection (ICX and NIX) from the licences for ANS and NTTN?

3.3.1 Respondents’ comments

Many respondents are wary of removing the separate interconnection layer within the Bangladesh telecommunications environment. They recognise that this is unusual by international standards but “we must not try to blindly copy other developed / developing countries.” The licensing of ICXs is seen as having overcome earlier problems of “denying adequate bi-lateral connectivity with smaller operators” and helping “BTRC/Government to keep track of off-net calls, with a view to ensuring its revenue share.”

Perhaps unsurprisingly, the larger ANS (which have not been granted ICX licences) disagree. They consider the ICX as “as middle man and unnecessary increasing the cost of service delivery without even adding any value.”

Both sides marshal arguments of efficiency to support their case. On the one hand, a star topology with an ICX allows six ANS to interconnect using just six interconnection links, whereas with bilateral interconnection a total of 15 links would be required. On the other hand, ANS argue that their costs are increased by having to build an excessive number of links “as the number of ICX is very high”. They also argue that the charges of the ICX are high (BDT 0.04 per minute) “which is ultimately passed to the consumer”.

Most respondents are less exercised about the role of National Internet Exchanges (NIXs), which are widely admired for “reducing costly international bandwidth from IIGs if the destination or content is locally hosted.”

With regard to NTTNs several respondents pointed out that there isn’t “any relevance of NTTN license, in ‘domestic interconnection’ issue”. However, one respondent argued that it “is practically impossible [for mobile operators] to deliver a high speed broadband internet service in 4G/5G era without the mandate of laying fiber transmission network”, and believes that “building own transmission network for the purpose of carrying the traffic should be the integral part of ANS license.”

3.3.2 Policy implications

The risk of removing the separate layer of ICX / NIX is that the interconnection problems that were previously experienced will simply return. Respondents mentioned problems such as: a refusal to provide service, unfair deterioration in service quality and a lack of transparency in reporting of interconnection traffic. These are classic example of abuse of dominance and, as one respondent pointed out, could be addressed directly through strong provisions banning anti-competitive behaviour from dominant providers. However, such provisions will take time to implement effectively, which probably means that separation of ICX / NIX will continue to be required for some years. As one respondent concluded “the prevailing separation of licensing can be maintained for at least another five years.”

Maintaining the separate licensing of interconnection providers does not mean maintaining the status quo. The inefficiencies created by the ICX /NIX layer increase exponentially with the number of licensees, especially if the ANS are required to interconnect with all of them. Some rationalisation is surely necessary, both to lower the industry cost burden and to ensure that those ICX that do continue are able to make profits without charging excessive prices: 26 ICX licences is far too many, and would not be the outcome in a competitive market environment.

3.4 SEPARATE LICENCES FOR INTERNATIONAL INTERCONNECTION

<p>4. Is there any good reason to maintain the separation of licences for international interconnection (IGW and IIG) from the licences for ANS and NTTN?</p>
--

3.4.1 Respondents' comments

The arguments for and against separate IGW and IIG licences are in many ways similar to those for and against separate ICX and NIX licences. Accordingly, several respondents simply re-iterated their answer to question 3.

However, some aspects of the international services act to heighten the arguments both for and against separate licensing. Thus regulation of international services, both voice and data, is critical “with a view to (i) ensuring maximum direct-earning by the government, and (ii) ensuring strict monitoring/control on usage/content, for national security/interest.” And, on the other side, “Over the last 5 years, we have observed significant growth in OTT services ... Under the circumstances, international gateway (IGW) license will not be relevant in next 5 to 7 years as by this time country will adopt 4G and 5G technology and only few traffic will be exchanged through these traditional telecommunication voice gateway.”

So some respondents see that “unified license would create more havoc situation” while others see an “unorthodox dependency of ANS on other parties” and allowing ANS to “operate its own IIG and IGW as converged licensee, will make the service even more affordable.” But, if ANS are granted such an opportunity, another respondent points out that: “existing IGW and IIG will have no utility existence and combined license holders' monopoly will be obvious in the market beyond any doubt.”

3.4.2 Policy implications

Clearly there are risks in removing the separate layer of IGW / IIG, parallel to those risks already identified for ICX / NIX. Indeed, the risks may be greater for international services, which are generally of a higher value and may involve issue of national security. As with domestic interconnection, to some extent these risks could be addressed through strong provisions banning anti-competitive behaviour from dominant providers. However, such provisions will take time to implement effectively, which probably means that separation of IGW / IIG will continue to be required for some years. It is notable also that, whereas virtually no other country in the world separates ICX layer as in Bangladesh, several other countries have separated the IGW layer.

Maintaining the separate licensing of interconnection providers does not mean maintaining the status quo. There are at least 24 licensed IGWs and 36 licensed IIGs which is far too many for the purposes of efficiency. It appears very much as if these licences are too cheap and licensees are simply rent-seeking rather than adding value to consumers. Some rationalisation is surely necessary, both to lower the industry cost burden and to ensure that those IGW and IIG that do continue are able to make profits without charging excessive prices.

3.5 FUTURE LICENSING FRAMEWORK

5. What are your views on the three options for licensing of telecommunications providers identified in this report:

- **General authorisation.**
- **Network licences but general authorisation for services.**
- **Separate licences for ANS and NCS?**

3.5.1 Respondents' comments

Some respondents recognise that General Authorisation “can eliminate individual differences in the treatment of service providers and create a level playing field which is consistent with technological neutrality principles” and “has gained acceptance in developed economies as 'best practices' for permitting the provision of a wide range of telecom services”. However, the prevailing view is that Bangladesh “General authorization for services will not safeguard the interest of the consumer,” that the market “is not matured enough to adopt General authorization framework at this moment,” that “General authorization will lead to natural death of all existing operators except ANSs” and that “Bangladesh is unlikely to introduce general authorizations for all services” as the Government “would like to exercise move control over the market.”

Several respondents support the second option: “It would be a simplified approach if services can be offered only under general authorisation” and “de-fragmentation into broader categories of licenses should be encouraged”. But others, point out that “network licenses is a very wide term unless the category of network is mentioned clearly” and the current niche network providers (ICX, NIX, IIG, IGW) see broader network licence categories as a threat to the viability of their business and “it will create monopoly in the telecom sector of Bangladesh; and we know - monopoly encourages indiscipline, higher price and violation of regulatory policies by the major players”.

Although one respondent explicitly preferred the third option with separate licences for ANS and NCS, several expressed concerns including that “a separate licensee of National Carrier will add additional time and cost in the delivery value chain only,” and “it will be very difficult for the new entrants as network licensees to compete with the existing ANSs and NTTNs” and in Bangladesh “where fresh investment is required in significant amount to cope with the demand of the ANS operators, separate licensee for NCS may not be able to cope with such demand of coverage and quality resulting in hindrance in telecom experience of the consumers.”

3.5.2 Policy implications

No licensing system is perfect; trade-offs are inevitable between the inefficiencies and risks of market concentration and market fragmentation. Whilst many would agree that the current arrangements are too fragmented, the fear remains that any attempt at consolidation will result in “monopoly” or (more likely) a small number of

SMP providers that dominate the market.

BTRC needs to decide when those fears are irrational or overstated, and how best to achieve the economies of scale and scope that are increasingly important in a converged digital economy. A step-by-step process will be required, with each step helping to build confidence in the direction of travel and prepare the industry for the next step. The goal of unified licences should be retained and prepared for, but it should not be implemented in the immediate future.

3.6 ROADMAP TO UNIFIED LICENSING

- 6. What barriers do you see to the implementation of unified licences in Bangladesh?**
- **How might they be overcome?**
 - **What timeframe would be required for the migration?**

3.6.1 Respondents' comments

Respondents perceive a large number of barriers to unified licensing:

- The categories of authorization of services.
- The licensing procedures.
- How to ensure transition of the existing licensees to the new licensing regime.
- Government's direct earning would be stopped. Moreover, Government would not be able to monitor and control the market effectively. So, it may not want the unified licenses to be implemented.
- Scarcity and high-cost of infrastructure would not allow the operators without infrastructure compete in the market. Restrictive infrastructure policy, if prevails, would monopolize the market further.
- Existing Operators, especially those who are in a stable and profitable situation (i.e. IGW, ICX) will be strongly against it.
- Changes in the interconnection architecture,
- Adjusting the resources from the IGWs, ICXs and others.
- Existing licensees' fees and license adjustments.
- Need for more capitalisation
- Possibility of service degradation and service price will be more

As one respondent points out many of these barriers have been artificially created by the current ILDTS policy: "Given the fact that most of the licensees have a business based on the restrictive nature of the current licensing regime, unified licensing liberating some other licensees to avoid the artificial layers they play in may push them out of business." To be fair to these licensees, three main solutions are

proposed by respondents:

- “We cannot go for implementing any and such modifications/unifications before [the expiry of existing licences in] 2027”
- “Refunds to holders of existing licenses that will be cancelled and opportunity for existing license holders to migrate to a new regime at no charge”.
- “To ensure that this move does not become counterproductive by further monopolizing the market (revenue and profitability), a futuristic competition regulation should be implemented before starting the process of unification”.

Other respondents conclude that “introduction of a unified license is not a time worthy call for Bangladesh telecom market right now; it may bring disaster to this sector” or at least that “reforming the licensing regime is a complicated exercise that contains a number of difficult and complex issues ... we encourage a much more detail study and consultations to be undertaken”.

Even if these doomsayers are ultimately proved to be wrong, the presence of such voices today cautions against proceeding too fast. The appropriate timeline for the transition to unified licensing was variously suggested by respondents as: 2 years, 5 years, 5-7 years, 10 years and 25-30 years.

3.6.2 Policy implications

While the international trend has been towards unifying licences the ILDTS Policy has, since 2010, led Bangladesh into a proliferation of licences and a fragmentation of the market. There is no reason to believe that general authorisations and unified licences will not have the beneficial economic and social impacts as has been experienced in other countries, but there is a strong argument (as picked up by most respondents to this consultation) that it will take time and careful planning to turn the ship around and chart a safe course in the opposite direction. The barriers are genuine and significant, but they can be overcome if BTRC establishes a road-map that allows each licensee a fair and reasonable way forward.

4 POLICY RECOMMENDATIONS

The current ILDTS Policy in Bangladesh has been successful in that it has created competition in the provision of infrastructure and services and enabled the development of indigenous telecommunications companies. However, these developments have come at the expense of growing structural inefficiencies created by the artificial limitations of each licence and the proliferation in the number of licences issued. As the country moves forward into a converged digital economy the need to adapt the current policy is becoming more evident, and all parties recognise the need to transition towards a more holistic licensing framework. The challenge of BTRC is to manage that transition so as to achieve incremental economic and societal gains.

A four-stage roadmap is recommended:

- Stage 1: consolidation within existing licence categories
- Stage 2: development of strong competition rules
- Stage 3: voluntary transition to three new licence categories
 - Class Licence (or possibly a General Authorisation⁵) for Retail Service Provision;
 - A Class Licence (or possibly Individual Licences) for facilities-based International Network Services;
 - Individual Licences for facilities-based National Network Services.
- Stage 4: the three new licence categories become the only available options upon expiry of the licences issued under the current ILDTS regime.

Each of these stages is described in more detail below.

4.1 STAGE 1: CONSOLIDATION WITHIN EXISTING LICENCE CATEGORIES

The first step to a streamlined licensing regime is to stop proliferation within the existing licence categories and enable some rationalisation within the industry. In particular there are currently too many licences for ICX, IGW and IIG.

The simplest way to encourage (but not force) consolidation would be to remove the requirement for ANS to interconnect with all the ICX, IGW and IIG licensees. This requirement could lead to wasteful duplication and inefficient utilisation of transmission links. It would be sufficient that each ANS interconnects with just a few ICX, IGW and IIG licensees, either nationally or within defined regions.

Such a policy will create a degree of competition between the licensees and will

⁵ Section 36 of the Act may preclude the option of a General Authorisation.

naturally lead to consolidation and/or the weakest licensees exiting the market. Those licensees which have invested in their ICX, IGW and IIG facilities will tend to prosper in these circumstances, and it will be of little cost to the overall economy if those that have not invested were to close: there is little danger of substantial stranded assets.

The major arguments put forward by these licensees for the retention of the current ILDTS Policy is that their investments would be wasted and jobs would be lost. However, these arguments are irrelevant where licensees have invested very little, and in other circumstances at least some of the investment and jobs will be transferable to the consolidated entity.

Importantly, this first stage of the roadmap precludes other licensees, in particular the larger ANS and NTTNs, acquiring the locally-owned licensees that have sprung up as a consequence of the 2007/10 ILDTS policy. Instead it enables stronger local competitors to emerge who have at least a chance of operating in the more converged environment that will follow in later stages of the roadmap.

4.2 STAGE 2: DEVELOPMENT OF STRONG COMPETITION RULES

Stage 1 will help to put the brakes on the fragmentation that has occurred in Bangladeshi telecoms over the past few years. But it will not be possible to converge the various different licence types until an effective regime for competition management is in place.

As many respondents pointed out, the ring-fencing of different licence categories was necessary in order to break-up the erstwhile model of monopoly supply. There remains a considerable risk of a similar outcome – although probably one or more dominant licensees rather than a single monopoly – unless strong competition rules are put in place beforehand. As evidence by experience in other countries these rules need to include:

- The means of identifying licensees with significant market power (SMP) and constraining their activities to avoid anti-competitive behaviour.
- The imposition of ex-ante rules on SMP providers to ensure open access to bottleneck facilities which other licensees cannot replicate (e.g. interconnection and access to facilities such as towers, ducts and poles).

BTRC will need time to develop these rules and make determinations, both on relevant markets and on which companies have SMP in those markets. This work should be done before opening up competition between the different licence categories, as otherwise the smaller companies under the existing licensing structure (ICX, IGW, NIX, IIG and NTTN) could find themselves squeezed out of the market by unfair practices such as predatory pricing or a refusal to deal. It would be helpful, but not essential, to have competition guidelines during Stage 1 as the ICX/IIG/IGW operators do not have much competitive expertise in an open market setting.

A proposed framework for these Competition Rules is provided in Annex A.

4.3 STAGE 3: VOLUNTARY TRANSITION TO THREE NEW LICENCE CATEGORIES

Three new licence types are proposed as follows:

- A Class Licence for Retail Service Provision (“RSP licence”);
- A Class Licence for provision of facilities-based International Network Services (“INS licence”)
- Individual Licences for provision of facilities-based National Network Services (“NNS licence”).

It should be noted that, while these three categories are central to the proposed overall structure for the new licensing regime, there remain a range of more detailed issues remain open, to be resolved after detailed study following BTRC adoption of the overall roadmap. Such issues include:

- The names of the different licence categories – e.g. other countries tend to use the terms “facilities licence”, “services licence” and “applications licence”, without distinction between national and international facilities or services;
- Which licences are individual and which are class licences – individual licences are required only where there are materially different services are to be supplied;
- The detailed definition and scope of each licence to be offered under each category – e.g. rights and obligations, application procedures, licence fees;
- Whether a separate unified licence (incorporating RSP, INS and NNS licences) should also be offered.

4.3.1 Retail Service Provision

The RSP licence should be open to any company. A Class Licence establishes a common set of rights and obligations (including a standard licence fee) so that any company can participate in the provision of retail services subject to meeting the licence conditions. In the case of a General Authorisation there is no need to apply for a licence at all and no licence fees would be payable, although BTRC may retain a register of service providers.

Examples of retail services that may be included in this licence category are:

- Cellular mobile services
- PSTN telephony
- IP telephony
- Internet access services

- Wireless broadband services
- Wi-Fi Services
- Fixed broadband service
- DTH services/Broadcasting distribution services (TV/Radio)
- Public payphone services
- Messaging services
- Value added services
- Content and application services
- Online distribution of music, movies, applications etc.

The idea of a Class Licence is that it minimises barriers to entry and maximises competition in the provision of retail services, while still allowing BTRC to keep track of who is operating in the market and to raise some licence fees. However, it is important that the licence fee and other licence conditions are sufficiently minimal as to ensure easy entry (and exit) from the market. This is likely to stimulate economic activity and help fulfil the vision of Digital Bangladesh.

4.3.2 International Network Services

The INS Class Licence will establish a common set of rights and obligations (including a standard licence fee) that must be followed by any company wishing to own and operate international network facilities and participate in the wholesale provision of international network services.

Examples of services that may be included in the INS licence category are:

- International Data Gateway Services
- International Voice Gateway services
- International transmission service (submarine/terrestrial)
- International Carrier Service
- Satellite Earth stations
- Submarine cable landing stations
- VSAT service

This new licence category will incorporate the services currently supplied by IGW and IIG licensees. Given the large number of such licences already issued, it is clear that a class licensing system is appropriate and will streamline the process. Given the broader range of services that may be supplied under the INS licence compared with either the current IIG or IGW licences, it may be appropriate to charge a slightly higher licence fee. However, the fee should not be set too high so as to encourage competition. Some discounts could also be offered to IGW/IIG licensees that migrate

to the INS licence within a short period of time (e.g. 1 year).

4.3.3 National Network Services

NNS licences will establish the rights and obligations that must be followed by any company wishing to own and operate national network facilities and participate in the wholesale provision of national network services in Bangladesh.

Examples of services that may be included in the NNS licence category are:

- Access to passive facilities such as towers, poles and ducts
- Access to active facilities such as fibre optic cables or microwave transmission
- National transmission capacity services
- Interconnection services, including call origination, transit and termination.

This new licence category will incorporate the services currently supplied by NTTN and ICX licensees as well as the network facilities operated by ISP, PSTN and PLMN licensees.

A number of individual NNS licences are likely need to be issued, since the prevalence of economies of scale and differences in geographical scope suggest that there is likely to be a small number of licensees and each may provide a different set of facilities and services. With individual licences it would also be possible to apply different rights and responsibilities to each licensee. However, there should be as much standardisation as possible.

It may even be possible to offer a Class Licence in some situations. This will give all participants an equal opportunity, subject to a common set of licensing constraints, while the risks of anti-competitive behaviour by dominant providers can be addressed through a well-constructed regime of competition management.

Two implications of the NNS class licence need to be considered further:

1. Access to an NNS licence will enable the mobile network operators (current PLMN licensees) to build their own new network facilities rather than purchasing from the NTTNs. This will have positive effects in speeding up and simplifying investment decisions, and should propel investment in fibre and 4G/5G mobile services. However, the mobile network operators are the biggest customers for the NTTNs, so some consolidation amongst the NTTNs is likely. From an economic standpoint this is actually desirable as it will increase efficiency across the sector, and the vast majority of the assets of the NTTNs are likely to continue in use. Furthermore, should a dominant provider emerge as a result of this process, the competition management regime will enable open access to this infrastructure and thus ensure fair competition in downstream markets.
2. Although the NNS licence will provide the same or similar rights to all network providers, there will be additional requirements for those licensees that want

access to radio spectrum. The NNS licence will only provide the right to bid for radio spectrum relevant to the services that are being provided (e.g. mobile communications). The licensee will have to pay extra to secure whatever spectrum it requires.

4.3.4 Transition plan

The transition from the current licensing regime to the new one needs to be handled carefully. Current licences are of variable durations, but many will not expire before BTRC is likely to want to introduce the three new licence categories. There could be legal challenges if BTRC attempts to terminate the old licences early or if the introduction of the new licences undermines the viability of the existing licensees. To avoid this outcome it will be necessary to:

- Allow an overlap period on which existing licences continue to be valid. This period might need to extend as far as the expiry dates of the current licences.
- Ensure that the granting of licences in the new categories does not foreclose the market opportunities of licensees under the current ILDTS policy. The current licensees do not have any guarantees of revenue or profitability or the extent of competition within their market, so BTRC is perfectly entitled to introduce new licensees and new categories of licensees. However, such actions should not unreasonably curtail the chances of existing licensees making a return on their investment.
- Offer a fair and reasonable migration path for existing licensees to trade in their licences for a new licence in one or more of the new licence categories. They should be given attractive terms to upgrade their licences to provide additional facilities or services.

The aim is to establish a scheme whereby the existing licensees want to migrate to the new licences and such migration happens quickly and smoothly. In certain situations BTRC might offer financial incentives to persuade licensees to migrate into the new framework (e.g. in order to encourage a swift migration and thus simplify the process). In exceptional circumstances BTRC might offer recompense for the early termination of a licence, but care must be taken to avoid setting legal precedent.

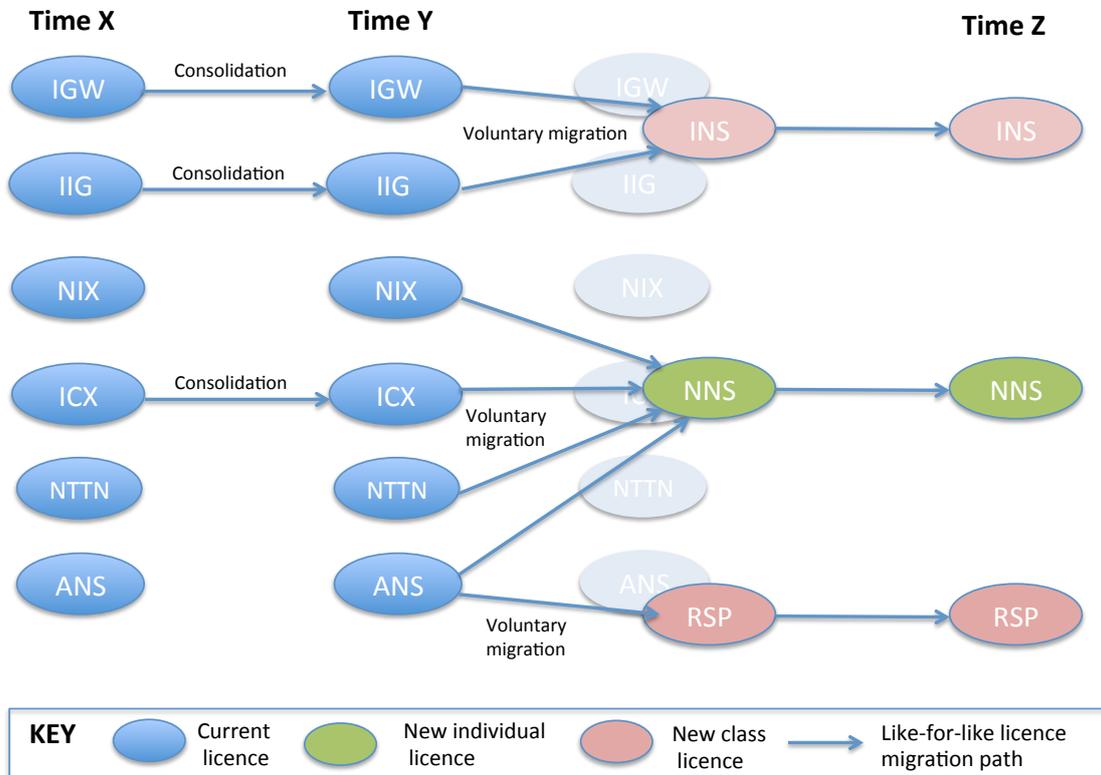
4.4 STAGE 4: EXCLUSIVE USE OF THE NEW LICENCE CATEGORIES

The final stage in the roadmap is when all the existing licensees have migrated to the new licence categories. Ideally, if the incentives are right for voluntary transition, this can happen within a year or two of the new licensing framework being introduced. There is, however, a possibility that the overlap period will continue until the expiry date of the last of the existing licences, which may be as late as 2027.

4.5 TIMELINES

The proposed licensing roadmap for Bangladesh is shown in Figure 3.1 below. It should be noted that all of the new licence categories will be open to all existing and new players (subject to meeting licensing conditions) but the arrows show the like-for-like migration path for existing licensees under the current ILDTS policy.

Figure 3.1: Roadmap to a new ILDTS licensing framework



There are three key milestones to be observed, but the precise timing of each of them has yet to be determined.

- Time X effectively marks the start of the roadmap, and will be triggered by BTRC relaxing conditions on ANS to connect with all ICX, IGW and IIG licensees, and removing the segregation between voice and data in all layers except ANS. This is likely to start a period of consolidation within each of these licence categories. Time X could be as early as later this year (2018) following a period of consultation with industry stakeholders.
- Time Y is when the three new licence categories are introduced. In order to provide an appropriate notice period and carry out the necessary preparatory work, it is suggested that Time Y should not be before mid-2019. Before Time Y BTRC must draft, consult upon and adopt a comprehensive competition management regime to enable effective regulation of potential SMP providers in relevant telecom markets. After Time Y all licensees will have the opportunity (but not the obligation) to migrate from their existing licences into the new licensing framework.

- Time Z is when all the current licences are withdrawn and all industry participants must then operate under one (or more) of the three new licence categories. Theoretically Time Z could be as late as 2027 (when the last of the existing licences expire) but, once most licensees have voluntarily migrated to the new framework, BTRC could impose an earlier cut-off date, after giving a suitable period of notice (e.g. 2-3 years).

ANNEX A: Outline Competition Management Regime

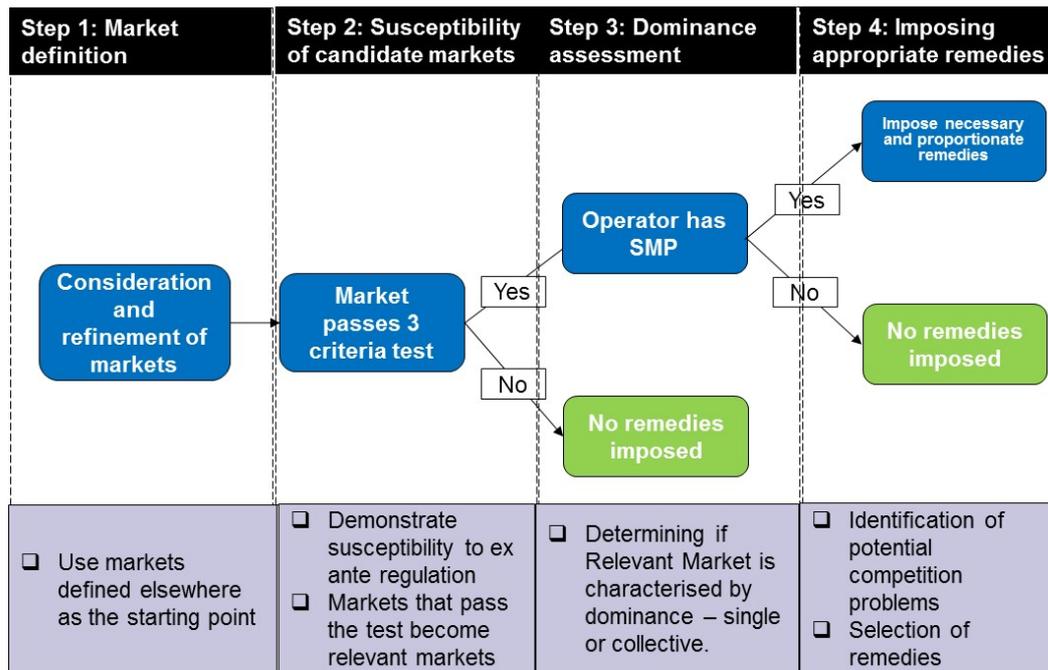
One effect of the current licensing regime in Bangladesh is that it limits and controls competition in each layer of the telecommunications market. This is generally a bad thing, because competition drives down costs and prices, and enables innovation and investment. On the positive side, the current ILDTS policy ensures that no operator establishes a position of excessive market power nor, in consequence, is able to act in a manner that is unduly detrimental to the interests of end users. But it does that at a substantial cost. Control of dominant operators can be achieved much more effectively, and without distorting development, by other means, as in most other countries.

Each of the licensing options identified in this report runs the risk of destabilising the equilibrium reached as part of the current ILDTS policy, with the result that some companies may establish a position of dominance and then exploit that position to harm competitors, customers and consumers. This is a risk has been faced down in other jurisdictions through the development of a clear regulatory process for market analysis, determination of dominance and the application of well-understood and effective remedies to control dominance.

It is important that lessons are learned from this experience and a streamlined approach is adopted for Bangladesh along the lines shown in Figure A1. The figure shows that the regulatory market analysis process generally involves the following four tasks, each of which is explained in more detail in the sections that follow:

- Define the telecommunication product/service markets under consideration
- Decide which of these markets are suitable for ex-ante regulation (“relevant markets”)
- Determine which (if any) service providers may be dominant in these relevant markets
- Apply appropriate remedies to the dominant service providers to ensure that they do not engage in anti-competitive practices.

Figure A1: Proposed approach to a Competition Management Regime



STEP 1: MARKET DEFINITION

Market definition is not an end in itself. For the regulator, market definition should be regarded as a necessary precursor to the subsequent assessment of market power. Put another way, the way in which markets are defined should be appropriate to the task of determining dominance in those markets.

In this context relevant markets are defined by assessing two different dimensions: the product market and the geographic market. The process of market definition consists in identifying all products/services that are sufficiently interchangeable or substitutable, not only in terms of their objective characteristics by virtue of which they are particularly suitable for satisfying the needs of consumers, but also in terms of their prices or their intended use.

The starting point for the definition of a relevant product market is an assessment of demand-side substitutability. However substitutability may also exist on the supply side, and may then be relevant in the definition of the relevant market. The products and services are part of the same relevant market where the behaviour of the producers or service providers are subject to the same type of competitive constraints as far as the price-setting is concerned. Supply-side substitutability exists when providers of other (non-substitutable) products, as a response to a marginal price change in the short term, can quickly change their production or distribution and offer substitutable products without incurring significant additional costs or substantial risk.

In summary there are two main competitive constraints: (i) demand-side substitution; and (ii) supply-side substitution. These competitive constraints, alternatively or together, may represent grounds for defining the same product market.

The full process of market definition requires detailed market data and surveys of customer behaviour, some of which is unlikely to exist and may be hard for BTRC to obtain. It is therefore recommended (and other countries have found it quite acceptable) to start from a list of candidate markets based on analysis done elsewhere, most notably the exhaustive work carried out by the European Commission (EC) in establishing seven relevant markets for detailed analysis⁶.

We propose that these seven markets are taken as the starting point for Bangladesh for the purposes of market analysis:

- Market 1 (retail): Access to the public telephone network at a fixed location for residential and non-residential customers.
- Market 2 (wholesale): Call origination on the public telephone network provided at a fixed location.
- Market 3 (wholesale): Call termination on individual public telephone networks provided at a fixed location.
- Market 4 (wholesale): Physical infrastructure access at a fixed location.
- Market 5 (wholesale): Broadband access at a fixed location.
- Market 6 (wholesale): Terminating segments of leased lines, irrespective of the technology used to provide leased or dedicated capacity.
- Market 7 (wholesale): Voice call termination on individual mobile networks.

Note that the above is a starting point only. Adjustment of the starting list of candidate markets may be justified by local market conditions. Bangladesh is in a very different position from the European Union (EU), particularly in terms of demographics, economics and the development of network competition. This means that potentially some of the EU markets are not relevant while some additional markets may need to be defined. In particular, while the current licensing framework remains in place, separate markets may be identified for ICX, IGW, IIG, NIX and NTTN functionality. In all cases, the relevance of the markets for ex-ante regulation in Bangladesh needs to be demonstrated.

Only one retail market is included in the initial list. Other retail markets could be added, most obviously retail mobile services, but this should be done after consideration of the upstream wholesale markets listed. The emphasis of modern telecommunications regulation to facilitate competition is to concentrate on the wholesale market level and to ensure that through appropriate regulation at this level,

⁶ In fact, the EU began with 18 relevant markets (in 2002) and has subsequently moved to just 4 relevant markets (in 2014) as a result of a deepening and broadening role of competition in telecoms markets. However, the list of seven markets identified in 2007 may provide a better starting point for market analysis in Bangladesh.

together with appropriate liberalisation at the retail market level, a sustainable and competitive structure will emerge.

STEP 2: SUSCEPTIBILITY OF CANDIDATE MARKETS TO EX-ANTE REGULATION

Once product/geographic markets are defined, and before the existence of dominance in those markets is assessed, the EU regulatory framework for electronic communications services recommends distinguishing between markets that are susceptible to ex-ante regulation (known as the “relevant markets”), and those that are subject to competition law alone.

Identifying the relevant markets involves two issues: firstly, how to test a given market for susceptibility to ex-ante regulation, and secondly how to sequence the tests of markets in order to optimize the amount of ex-ante regulation, for example considering the relation between retail and wholesale markets. The first issue, how to test a given market for susceptibility to ex-ante regulation, was addressed when the new EU regulatory framework came into effect in July 2003. The Recommendation on relevant markets⁷ issued at that time determined that ex-ante regulation in a particular market should only be applied when the so-called “Three Criteria Test” is fulfilled in a cumulative way – the criteria being:

- The presence of high and non-transitory structural, legal or regulatory barriers to entry,
- The market structure does not tend towards effective competition within the relevant time horizon, having regard to the state of infrastructure-based and other competition behind the barriers to entry and
- Competition law alone is insufficient to adequately address the identified market failure

The explanatory note accompanying the EC Recommendation on relevant product and service markets within the electronic communications sector⁸ explains in greater detail the meaning of the criteria.

⁷ Commission Recommendation 2003/311/EC of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC on a common regulatory framework for electronic communication networks and services, [2003] OJ C 114/45.

⁸ Explanatory note accompanying the Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services

STEP 3: DOMINANCE ASSESSMENT

Having defined the relevant market, the next step in considering ex-ante regulatory obligations is to assess whether any particular operator or service provider holds a position of dominance or significant market power (SMP) in the relevant market. The concept of SMP is synonymous with the notion of dominance⁹ and is related to the capacity of a firm to behave in ways that can harm consumer's interests either by setting excessive prices, delivering low quality services, not introducing innovation or foreclosing the market to more intense competition.¹⁰ SMP or dominance, though defined in different ways in different countries, involves "a position of economic strength" which enables a firm to "prevent effective competition" in the market because it can "behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers."¹¹ Dominant firms are capable of profitably increasing prices above the competitive level for a significant period of time without fearing any threatening reactions from competitors.

The way market power is assessed in different jurisdictions determines which firms can be designated as having SMP or dominance. For example, a number of countries in Africa, the Arab States, Asia-Pacific and Latin America rely exclusively on market share figures to determine SMP, albeit with widely varying thresholds. For example, in Japan any operator holding 25 per cent or more of the market is considered to have SMP, whereas in Singapore a market share above 40 per cent is required, and in the Republic of Korea the threshold stands at a 50 per cent share of the market.¹²

Some countries have moved away from pre-determined market share thresholds, to focus on case-by-case assessments as a better way to identify SMP. Those countries recognise that market share is at best an indicator, not a guarantee, that an operator is dominant in a market. Besides market share these countries rely on a combination of several different measures and analysis when determining SMP. In the results of the ITU Regulatory Survey of SMP assessment criteria in different parts of the world several of those measures are described and may include, but are not

⁹ The term dominance is used in the context of ex-post competition law, whereas the term SMP is preferred in many jurisdictions when dealing with ex-ante regulation.

¹⁰ Market power may be exercised unilaterally or by several firms behaving in a co-ordinated way (joint dominance). A firm without market power will only harm itself if, for example, it tries to charge an excessive price or to drive out other firms by a policy of predation. However several firms without market power may act in a co-ordinated way and harm consumers and foreclose competition (e.g. a cartel). In some jurisdictions actions only count as abuse if they are performed by a firm, or firms, whose market power exceeds a certain threshold. In investigating a possible abuse and designing a remedy where appropriate, a competition authority will wish to make an assessment of how much power the firm or firms in question exercise.

¹¹ Case *United Brands v Commission* [1978] ECR 207.

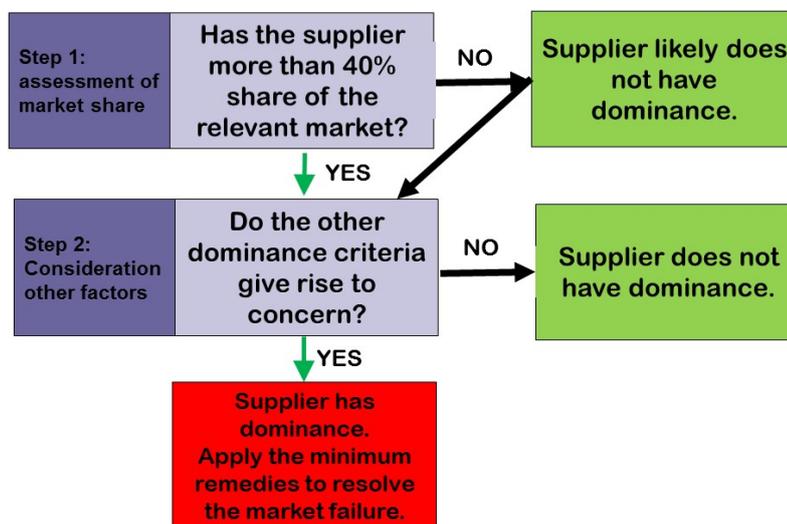
¹² All the data in this section comes from the ITU World Telecommunication/ICT Regulatory database 2017, www.itu.int/icteye

limited to, factors such as control of essential facilities, strength of consumers' countervailing power, entry barriers and potential competition. For example, in Asia:

- Myanmar and Mongolia look only at market share;
- Indonesia and Viet Nam acknowledge market shares and barriers to entry only;
- Pakistan takes account of market shares, barriers to entry, control of financial resources and potential competition;
- Japan considers market shares (over 25%) and the control of an essential facility;
- Fiji focuses control of essential facilities;
- Malaysia considers market shares, economies of scale and scope and potential competition;
- Singapore includes market share (40%), control of essential facilities, countervailing power of consumers, barriers to entry, potential competition;
- Thailand includes market share, control of essential facilities, easy access to financial resources, countervailing power of consumers, economies of scale and scope, barriers to entry and potential;
- South Korea includes market share (50%), control of essential facilities, easy access to financial resources, countervailing power of consumers, economies of scale and scope, barriers to entry, potential competition and various non-price competition factors such as the level of innovation, investment and consumer satisfaction.

Although international practice varies significantly, it is clear that the best practice is based on a set of criteria considered to be relevant to the market in question that includes but is not limited to market share. A two-step approach is proposed for Bangladesh as shown in Figure B2.

Figure B2: Proposed approach on designating SMP



Market share

The typical threshold for SMP is around 40% market share and may or may not be established in legislation. Equally the threshold may be taken as determinative (i.e. above it a supplier has SMP; below it a supplier does not have SMP) or it may create a rebuttable assumption (to be tested in relation to other relevant factors), although there are no such provisions in the Bangladesh Telecommunications Act, 2001. Nevertheless market share levels will need to be given serious consideration because of the way in which they may very well summarise the relative power relations in a market. In addition, however the share was accumulated, large discrepancies in market share may reflect different economies of scale that afford larger operators a position of economic strength. So, in line with international norms, Figure B2 proposes that a market share of less than 40% creates a rebuttable assumption of non-dominance and a market share of over 40% creates a rebuttable assumption of dominance. But in all cases the other factors should be considered as well, as listed below.

Other relevant factors that have the potential to create market power.

Factors that are typically considered (based on EU best practice) include:

- Control of essential facilities
- Pricing trends and pricing behaviour
- Overall size of the undertaking
- Technological advantages or superiority
- Absence of or low countervailing buyer power
- Ease of privileged access to capital markets / financial resources
- Product/service diversification (e.g. bundling)
- Economies of scale
- Economies of scope
- Vertical integration
- A highly developed distribution and sales network
- Barriers to expansion
- Absence of potential competition.

STEP 4: IMPOSING APPROPRIATE REMEDIES

When BTRC determines that one or more supplier has SMP within a defined market it may classify the situation as one of “market failure”. In this context market failure means that the market, left to its own devices and without any regulatory intervention, has been or will be unable to sustain a level of effective competition or to deliver the consumer welfare benefits of cost-reflective prices, innovation, and improved productivity, that are sought through the mechanism of competition. If the market was fully competitive, no operator would be dominant – there would be a more or less equal distribution of market power between all licensees providing services within the designated market.

The finding of SMP/dominance and consequent conclusion that there has been market failure requires some action to be taken. This action takes the form of remedies – sometimes called “safeguards” to prevent abuse of dominance or other forms of anti-competitive behaviour. These are known as “ex ante” remedies – remedies imposed before the anti-competitive conduct or abusive behaviour can take place or before it is alleged to have occurred. Remedies may be applied separately or in combination, as the circumstances of the relevant market and of the nature and source of dominance requires.

Once BTRC determines that a licensee is dominant in a relevant market it should assess the nature of the potential harm that the position of dominance might entail for competition and for consumer interests. In making this assessment BTRC should consider:

- The types of harm that could reasonably be associated with dominance in the circumstances of the relevant market;
- The specific orders or remedies that would directly address the harm that might result; and
- How the orders and remedies might best be shaped to be the least intrusive as possible while still being effective in reducing the risk of harm to an acceptable level.

Where a remedy is capable of being shaped or varied in intensity BTRC will consider how best to shape and specify the remedy having regard to:

- The potential harm from the dominance revealed on analysis;
- The likelihood of the dominance being reduced or neutralised by impending market development; and
- The risk of the remedy inadvertently reducing genuine competition in the relevant market.

Potential remedies

In order to illustrate existing remedies we use the EU regulatory framework¹³ that systematizes the most common obligations/remedies for ex-ante regulation. The framework sets out a number of obligations that might apply in either or both of wholesale and retail markets. These are, in ascending order of rigour:

- A transparency obligation requiring publication of specified information (accounting information, technical specification, network characteristics, prices etc.); it normally is a measure related to the right of access and/or interconnection which is imposed by means of the publication of reference

¹³ Consultation Document on a Draft joint ERG/EC approach on appropriate remedies in the new regulatory framework, as of 21/11/2003, available at http://www.anacom.pt/streaming/erg0330.pdf?categoryId=85233&contentId=144356&field=ATTACHED_FILE

interconnection offers (RIOs) and reference unbundling offers (RUOs) which require the official publication of prices and other important terms of supply;

- A non-discrimination obligation, that is to apply equivalent conditions in equivalent circumstances, and not to discriminate in favour of the regulated firm's own subsidiaries or partners;
- An accounting separation obligation to make transparent the internal transfer prices to the regulated firm's own downstream operation in order to ensure compliance with a non-discrimination obligation or to prevent unfair cross-subsidies;
- An access obligation that consists of obligations to meet reasonable requests for access or interconnection or use specific network elements. These may include a range of obligations, including an obligation to negotiate in good faith over terms and conditions of providing access; and/or
- A price control and cost accounting obligation which can require operators to set cost-oriented access charges, or the imposition of a price control on the regulated firm.

Within each of these options there are numerous variations on the type of remedy and way that remedies can be imposed. In addition, regulatory authorities may impose remedies outside this list. The choice of remedies has to be market-specific because circumstances vary substantially (e.g. how remedies may interact and may be mutually dependant and the practical issues regarding implementation). There is no static recipe for any given situation and certainly no unique linking of competition problems and obligations in order to solve market failures.

Principles in selecting remedies

The appropriate obligation/remedy will at all times be dictated by the specific problems identified in any given market. In defining appropriate and proportionate remedies the best practice is to treat wholesale and retail markets collectively based on identified links between them. However, there is no universal agreement as to whether remedies should be applied at the wholesale level, the retail level or both together. If effective action is taken upstream at the wholesale level there may be no need for regulation of downstream retail markets, for example if barriers to entry are sufficiently lowered to make markets prospectively competitive. This has been the general approach in Europe. However, in other countries where markets may be of lesser scale and the prospects of retail competition poorer, remedies in upstream (wholesale) markets may not be cost-effective, so that preference may need to be given to action at the downstream (retail) level.

Bearing this in mind and other considerations, a set of principles can be defined in terms of best practice. The following principles may apply to remedies as far as the circumstances of dominance and the relevant market permit:

- a) First consider appropriate remedies for dominance in wholesale markets.

Only if those remedies are considered to be ineffective or disproportionate to the scale of the identified market problem, should remedies to dominance in related retail markets be considered.

- b)** Impose the least intrusive remedy that will be sufficient to address the market failure from dominance in the relevant market and to protect competition and consumer interests associated with that market.
- c)** Shape remedies and determine the intensity of application to ensure that the remedy is appropriate, reasonable and proportionate to the risk of harm from the dominance found to exist in the relevant market.
- d)** As a general principle the remedies applied to dominant licensees in similar markets (such as the market for call termination in which each network constitutes a separate market) should be similar, taking account of the burden that the obligation represents for each dominant licensee.

ANNEX B: Detailed consultation responses

BTRC received 9 responses to its consultation on the future of ILDTS Policy in Bangladesh. These responses have been listed anonymously using the letters A-I in the tables presented in this section. Answers have been grouped for each of the 6 consultation questions, viz:

1. What is your opinion on the overall vision of an open, converged, competitive market in Bangladesh?
2. Is there any good reason to maintain separation of licences for voice and data services?
3. Is there any good reason to maintain the separation of licences for domestic interconnection (ICX and NIX) from the licences for ANS and NTTN?
4. Is there any good reason to maintain the separation of licences for international interconnection (IGW and IIG) from the licences for ANS and NTTN?
5. What are your views on the three options for licensing of telecommunications providers identified in this report:
 - General authorisation.
 - Network licences but general authorisation for services.
 - Separate licences for ANS and NCS (National Carrier Services).
6. What barriers do you see to the implementation of unified licences in Bangladesh?
 - How might they be overcome?