

Policy Challenges in Embracing Mobile Technology to Promote Socioeconomic Development: The case of Myanmar*

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Introduction

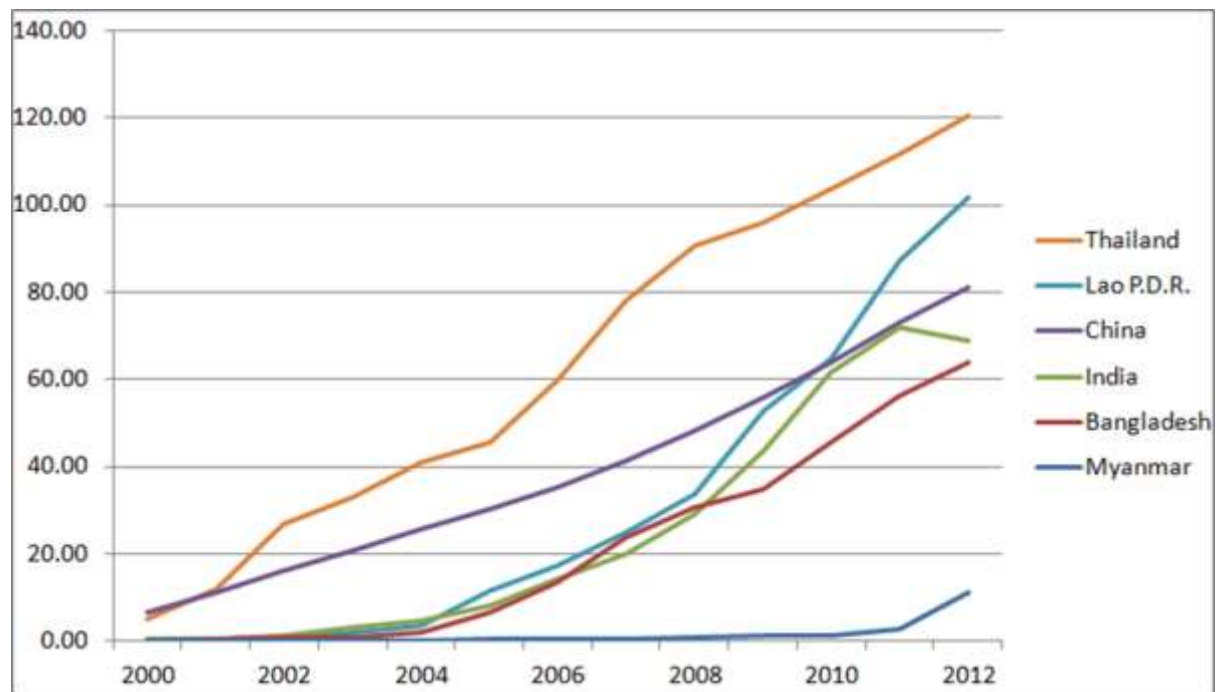
In 2011, Myanmar occupied the one-above-the-last place in the mobile SIMs/100 ranking according to the International Telecommunication Union (ITU). Below it was the South Atlantic territory of St Helena which had no mobile service.¹ By 2015, it had not only achieved the fastest growth of mobile connectivity, but had also made remarkable strides in Internet use, as recognized by the ITU's ICT Development Index.

This paper outlines the reforms of 2012-14 and analyzes in detail the primary and subsidiary legislation that enabled the reforms. The targets for the reforms have been set for five years from the issuance of the licenses. The concluding section discusses the interim achievements and some remaining implementation challenges.

The beginning, 2012-14

In 2012 even before the market opening, the ITU reported rapid growth, but it was still inadequate, as shown in Figure 1.

Figure 1: Mobile SIMs/100 in Myanmar & its neighbors, 2000-12



Source: ITU <http://www.itu.int/net4/itu-d/icteye/>

In 2013, the government of the Republic of the Union of Myanmar commenced reforms with the headline target of “from 10 (SIMS per 100 people) to 80 in five years.” There were other targets such as

¹ Fife, Elizabeth (ed.) (2014). *Myanmar: Telecoms' Last Frontier*. Pacific Telecommunications Council Broadband Reports, No. 2. Honolulu, HI: Pacific Telecommunications Council.

introducing mobile money, but the focus at that point was on mobile voice. The Ministry of Communication and Information Technology (MCIT) worked on parallel tracks to develop new legislation and to license two new foreign-owned operators.

The law was passed by both houses of Parliament and signed by President in October 2013.² The original draft was considerably modified, for example by stripping out exclusive rights for the incumbent to carry international traffic, removing a licensing category for content applications and inserting a provision that the regulatory agency would be created within two years. The law set out broad principles with details to be included in subsidiary legislation. The draft rules were published for consultation in November 2013, modified on the basis of comments received and promulgated.

The legislation stated the government’s intention to establish a regulatory agency within two years, i.e., by October 2015. In the interim, the Department of Post and Telecom functions as the regulator and is seeking to build up its capacity through partnerships with regional regulatory authorities and participation in training programs.

In parallel with the legislative process the government selected Ooredoo (owned by the Government of Qatar) and Telenor (majority-owned by the Government of Norway) from among 91 companies that expressed interest. The licenses were issued in early January 2014, though the actual texts have not been made public. The commitments made by the winning companies indicate the priorities of the government.

Table 1: Commitments made by the successful bidders for Myanmar mobile licenses

Ooredoo	Telenor
84% voice & data coverage by five years	83% voice coverage & 78% data coverage by five years
240,000 SIM sales points	70,000 SIM sales points
720,000 sales points for prepaid top-ups	95,000 sales points for prepaid top-ups
Peak prepaid voice < 35 MMK/mt (on-net) & 45 MMK (off-net)	Peak prepaid voice < 25 MMK/mt
SIM < 1500 MMK	SIM < 1500 MMK
10,000 telecenters + schools & hospitals	200 community centers with Internet
99.9% employees Myanmarese by five years	Free central government SMS channel

Source:

http://www.mcit.gov.mm/sites/default/files/press_conference_with_successful_applicants_20130710.pdf

Note: At the time of writing, MMK 1 = USD 0.00085

The government issued a mobile license to MPT, the incumbent, which entered into a partnership with KDDI and Sumitomo of Japan in May 2014.

² 2013 Union Parliament Law No. 31, enacted 8 October 2013.

Principal and subsidiary legislation

Myanmar's new telecommunications law was long in the making and went through substantial revisions prior to adoption in October 2013. There is no question that a new law was needed. Significant efforts have been made to improve the framework set out in the Law through the Rules that were promulgated subsequently. What follows is an analysis of the most important aspects of the Law and the Rules, with emphasis on the areas that will require monitoring and amendment.

Legislation that governed the government-owned integrated monopoly, enacted in the colonial era, was quite simple. The powers of the government department (which was the monopoly) to take various actions were defined in detail. There were few checks and balances other than the general administrative-law remedies. In contrast, modern legislation has multiple functions as required by the more complex environment. It has to define who is permitted to do what, for example who can supply services, who can issue the licenses and renew them, and so on. Unlike in the government-monopoly era, a primary purpose of the legislation is that of giving comfort to private investors. Where discretion was mostly untrammelled in the old legislation, the new has to include checks on discretionary power.

In keeping with the Law's second objective of "bring[ing] about communications services that are of high quality and that can give the customers the services they deserve, with equal and transparent competitions among the local and foreign service providers in the developing telecommunications sectors" (section 4), the licensing provisions have been given prominence in the Law, being placed in the first substantive chapter.

Necessary conditions for improved sector performance

Opening up a market by allowing market entry to competitors is a necessary condition of effective sector performance.³ In rare instances, the liberalization of entry has, by itself, yielded good outcomes even in the absence of the sufficient condition of effective regulation.⁴ Therefore, the key topics of licensing framework, licensing procedure and spectrum assignment are discussed in this section.

Licensing framework

The licensing framework is central to the Law. It is based on that used in Singapore and Malaysia. Three categories of licenses are specified in the Law: (a) Network facility business; (b) Network service business; (c) Application service business. The Rules that were adopted in early 2014 expand and elaborate on the provisions set out in the Law.

The stated objectives of the Rules are to:

- Promote competition and liberalization;
- Ensure regulatory certainty and transparency in licensing application, award, and administration processes;

³ Devkar, Ganesh A.; Mahalingam Ashwin; Deep, Akash; Thillairajan, A. (2013). Impact of Private Sector Participation on access and quality in provision of electricity, telecom and water services in developing countries: A systematic review, *Utilities Policy*, 27: 65-81.

⁴ Skouby, K-E; Tadayoni, R. (2004). A case study on Somaliland in the framework of the WDR project. http://users.dec.uwi.edu/smarshall/itira/proceedings_online/2003/non-ref_papers/skouby_tadayoni.pdf

- Establish a technology- and service-neutral approach to licensing, to the greatest extent possible; and
- Ensure non-discriminatory treatment of similarly situated licensees.

Technology-neutral rules allow licensees to offer or use any type of approved network technologies within their respective license categories. Service-neutral rules allow licensees to offer or use any type of approved telecommunications service authorized within their respective license categories.

The Rules expanded on, and improved, the structure set out in the Law:

- Network Facilities Service (NFS) license is sub-divided as
 - NFS Individual, referred to hereafter as NFS(I);
 - NFS Class, referred to as NFS(C);
- Network Service (NS) license; and
- Application Service (AS) license.

NFS(I) is a foundational license needed by every major customer-facing telecom operator. These licenses are limited in number and must therefore be given out using auctions or similar means of assignment, according to the Rules. It is at the highest hierarchical level and permits Licensees to engage in all activities authorized by the NFS(I), NFS (C), NS and the AS licenses.

The NSF(I) license authorizes the licensee to provide any type of public or private telecommunications service internationally and/or nationally. It authorizes the construction, maintenance and operation of telecommunications network facilities and infrastructure and/or lease of all or part of the licensee's network. The types of activities authorized by the NFS(I) license include, but are not limited to, the construction, maintenance, and operation of and the provision of telecommunications services over:

- terrestrial fixed line transmission facilities;
- terrestrial radio transmission facilities;
- mobile base station facilities;
- submarine cable facilities;
- international gateway service facilities;
- satellite earth station facilities; and
- other satellite facilities located in Myanmar providing capabilities for transmission of telecommunications services.

By sub-dividing the single category given in the law into two, the Rules commendably simplified authorizations for non-customer facing infrastructure provision and allowed many more players to participate in the sector. The NFS(C) license may be obtained by registration. There is no numerical limit on how many may be issued. Discretion is limited to whether the registration requirements have been satisfied.

The NFS(C) license authorizes licensees to construct, deploy and maintain passive telecommunications network infrastructure and to lease such infrastructure to an NFS(I) licensee and/or to construct, deploy and maintain telecommunications networks solely for the self-provision of telecommunications services. The activities authorized by the NFS(C) license relating to the deployment and maintenance of any type of passive network infrastructure for civil engineering and non-electronic elements, include but are not limited to:

- towers;

- masts;
- ducts;
- trenches;
- poles;
- dark fiber; and
- radio equipment installed to send, receive and route communications, provided that the NFS(C) Licensee does not offer Telecommunications Services other than self-provided Telecommunications Services.

The spectrum necessary for provision of services under NFS(I) and NFS(C) licenses must be obtained separately. The provisions pertaining to spectrum are discussed below.

The Network Service (NS) license is also limited in number and its issuance is by some form of administrative assignment, including auction. This services-based license authorizes the licensee to lease transmission capacity directly from an NFS(I) licensee and/or connectivity services from another licensee in order to provide any public or private telecommunications service, whether on an international or national basis. Virtual private networks are examples.

The NS license does not authorize the construction, maintenance, and operation of telecommunications network facilities and infrastructure, except for switches, routers, and processing equipment necessary to provide the licensed service(s). The NS license does not permit the licensee access to spectrum resources. The types of activities authorized by the NS license generally include telecommunications services that require leasing international transmission capacity and/or access to numbers pursuant to the Numbering Rules, and include, but are not limited to, the provision of the following telecommunications services:

- resale of wireline connectivity services;
- resale of terrestrial wireless connectivity services;
- international and domestic network transport and switching services; and
- resale of international gateway services.

Similar to the NS license, the Application Service (AS) license is services-based and does not authorize the construction, maintenance, and operation of telecommunications network facilities and infrastructure, except for switches, routers, and processing equipment necessary to provide the licensed service(s), nor does the AS license permit access to scarce spectrum resources. The AS license authorizes the licensee to lease transmission capacity directly from an NFS(I) licensee and/or connectivity services from another licensee in order to provide public and private telecommunications services on a national basis, to the public, and/or to another Licensee. Unlike an NS license, an AS license does not authorize the offering of telecommunications services on an international basis or to offer telecommunications services requiring numbers. The activities authorized by the AS license include, but are not limited to, the provision of the following telecommunications services:

- public payphone services;
- public switched data services;
- audiotext hosting services provided on an opt-in basis;
- directory services;
- Internet service provider services;
- public access center services;

- messaging services;
- private line voice and/or data services; and
- value-added services.

The Interpretation section of the Rules contain a footnote stating that “the term “Application Service” does not refer to Internet Content Applications, which are not regulated or licensed under the Licensing Rules.” This removes an ambiguity that existed in previous drafts that was pointed out by commenters. It indicates that the framers of the law and regulations are responsive to comments and criticism and are not committed to an overly controlling legal framework.

Licensing procedure

Multiple layers of government are involved in the issuance of licenses, according to the Law. The Department publishes procedures, receives applications and submits comments to the Ministry. The Ministry issues the license when the applicant is from within Myanmar. It issues the license with Union Government approval when applicant is foreign.

It may be hypothesized that the intention is to substitute the Department with the Regulatory Agency when that entity is established within the timeframe stipulated in the Law. Yet this would mean that the actual licensing authority continues to reside in the Ministry. The procedures published by the Department provide certain safeguards.

The language re license terms and renewal in the Law are unnecessarily vague, but the Rules specify the terms and set out specific procedures for renewal. Telecommunication networks are major infrastructures that require significant capital investment. In the case of infrastructure such as roads or ports, it may suffice to provide certainty for the private investors at the moment of entry when the major investments are made. Even with these kinds of infrastructure, investment declines in the last few years and special actions have to be taken to ensure maintenance. In the case of telecommunication networks, the pace of technological and market change is such that continuous investments are needed. If the renewal provisions are vague and leave too much room for Ministerial or administrative discretion, it is likely that investment will be stifled toward the end of the license term.

The licenses issued to Ooredoo and Telenor under the Law are most likely identical, possibly differing only in terms of the commitments made during the licensing competition (Table 1). It is not possible to be certain because many documents related to the reforms such as the finalized regulations and the licenses are not in the public domain, allegedly because of delays in translation and in the Attorney General’s Department. But it would have been good if the Law or the regulations contained explicit requirements that like licenses must be substantially identical, for example that the licenses issued to the government-owned/associated entities are substantially the same as those issued to the private entities.

The Rules have attempted to constrain the broad discretion given in the Law regarding license renewal and fill the silence on license modification. Clearly, the provisions in the Rules are an improvement. However, there is value in a comprehensive reexamination.

Having multiple actors in licensing process is not optimal since it creates conditions for influence and its corollary corruption. It is hoped that the licensing procedures will be improved when the Law is amended to establish the Regulatory Agency and to define its powers.

Spectrum

The Law is succinct on the all-important subject of spectrum: “The Department shall manage and supervise countrywide frequencies as well as the satellite route designated to the Union Republic of Myanmar according to the International Communications Conventions. The Department can give permission to individuals, departments and organizations to use, in accordance with rules and regulations, the frequency ranges in the countrywide frequency designated.”

The Department’s powers over spectrum are not constrained other than by limits that may be derived from international conventions. Though the Law refers only to international legal instruments associated with the International Telecommunication Union (ITU), the Rules refer to all relevant international legal instruments, which would for example allow the application of the Agreement of Basic Telecommunication Services that is part of the General Agreement on Trade in Services (GATS) if Myanmar should choose to become a signatory.

In line with the assumption made above in relation to the entity responsible for licensing functions, the Law’s designation of the “Department” as the authority responsible for spectrum management and the assignment of frequencies to specific entities such as the new operators, may be interpreted as indicative of an intention to transfer those functions to the independent regulatory agency when it is created. However, it is difficult to make this interpretation with regard to spectrum given the language in the subsequently adopted regulations. Here, the Ministry is, for the most part, designated as the responsible authority. This suggests that the government may be leaning toward the Indian model of retaining the Ministry as the spectrum manager and not yielding this authority to an independent regulatory agency as has been done in many other countries.

Sufficient conditions for improved sector performance

Experience has shown that optimal sector performance depends on a regulatory agency that effectively functions on a day-to-day basis, after the “big bang” reform of licensing.⁵

The Regulatory Agency

The sum total of the Law’s provisions related to the Regulatory Agency are given in Section 86, obviously inserted during the last stages of Parliamentary approval: “In order to be able to implement this law on telecommunications services, the Union Government shall establish an independent Myanmar Telecommunications Commission, led by an appropriate individual at the Union level, within two years of the effective date of this law.”

It is good that the provision exists. It must have given some comfort to the investors. But clearly, this is inadequate. In the interim, it appears that the Department will function as the regulator. Generally concerns exist about a government department’s capacity to regulate in terms of technical skills and also in terms of ability to exercise authority over the government-owned or associated operators. It is unlikely that Myanmar is exempt from these problems. But in terms of the Law itself, there are several issues of concern, especially if they are not corrected in the Amendment creating the Regulatory Agency

⁵ Devkar, Ganesh A.; Mahalingam Ashwin; Deep, Akash; Thillairajan, A. (2013). Impact of Private Sector Participation on access and quality in provision of electricity, telecom and water services in developing countries: A systematic review, *Utilities Policy*, 27: 65-81.

and the ambiguities and overlaps carry over into the enabling legislation for the Myanmar Telecommunications Commission.

There is considerable and unnecessary overlap of powers and functions between the Ministry and Department. Instead of limiting the Ministry's functions to those of policy development and the issuance of broad directives, the Law assigns various responsibilities, including, but not limited to the following:

- The Ministry has significant powers over the issuance and renewal of operating licenses and spectrum management as discussed above.
- Section 15 gives the power to issue directives to operators to both the Ministry and the Department, when it should be limited to the latter if it is the precursor to the Regulatory Agency.
- Section 21 states that "the Department shall instruct a licensee to use the telecommunications number and electronic addresses designated by the Ministry." This appears superfluous. There is little justification for the Ministry to be involved in such mundane matters.
- Section 24 stipulates that "with approval from the Ministry, the Department shall issue technical standards for specific businesses with regard to the licenses." Again, one wonders what contribution the Ministry can make on such technical matters.
- Section 29 is puzzling. It states: "(a) A person with a business license shall report to the Department the fee for the proposed or current telecommunications service. (b) After reviewing the proposed fees for the services, the Department shall give a permit, with approval from the Ministry." Why is the Ministry involved? It can only add delay to what is arguably a superfluous approval in a competitive environment where maximum price commitments have been made as part of the bids.
- Again in Section 31, the Department is required to obtain the approval of the Ministry for developing standards to protect consumers.
- Section 38 mandates that authorization from the Ministry is required for the Department to instruct a licensee to cease the actions that hinder the competitiveness in the telecommunications market. This is pernicious in that it involves the Ministry in quasi-judicial actions.
- The Ministry's instructions are required for the management and supervision functions of the Department (Section 39). This extraordinarily broad and vague authority may be used to impugn any and all actions of the Department (and possibly of its successor).
- Section 52 appoints the Ministry as the appellate body for all decisions by the Department in relation to disputed related to telecommunications technology. In effect, this makes the Ministry the final arbiter and the de facto regulator.
- Section 58 appoints the Ministry as the appellate authority for any administrative decision taken by the Department re license violations and so on. Again, this makes the Ministry the de facto decision maker.
- Section 76 specifies that for reasons of national defense and security or for public interest (extraordinarily broad terms that would allow almost any action), the Ministry or a department or organization authorized by the Ministry (not necessarily the Department of

Telecommunications) may enter, inspect, and supervise a telecommunications service business conducted by a business licensee, and request to see its documents and notes.

- Section 80 mandates that prior authorization from the Ministry is required for prosecution of any offence under the Law.
- Under Section 81, it is the Ministry, not the Department (or its successor, unless significant repairs are made to the Law) that will determine license fees, license renewal fees, fees for the use of frequency band, fees for the allocation of telecommunications number and electronic addresses, as well as overdue payment of those fees.
- Section 83 requires the authorization of the Ministry for any rules and regulations, code of conduct, and standards for telecommunications service business promulgated by the Ministry.
- Section 87 gives the Ministry, not the courts, the power to clarify technical terms related to telecommunications in this law by issuing a notification.

In sum, the above provisions position the Ministry as the final authority in the sector and relegate the Department to a mere implementer of Ministry directives. This precludes a simple amendment to the Law that would simply abolish the Department (as has been done in many instances of reform) and transfer all its functions to the Regulatory Agency. The Law will have to be quite substantially amended if the intention is to have an independent and adequately resourced regulatory agency at the helm of the sector.

Appellate body

It is widely recognized that the decisions of a Regulatory Agency should be appealable. In some countries such as India, appeal lies with a specialized appellate tribunal that has the requisite knowledge and is unlikely to introduce delay into the system. In others, appeals may be directed to a specified court on questions of law (not substance, though the line between the two tends to get blurred). The latter approach empowers the Regulatory Agency more, but ensures its procedural rectitude.

Chapter 17 of the Law creates an appellate tribunal that will hear appeals from decisions of the Ministry. This creates a three-layer process, since the Ministry actually hears appeals regarding Department decisions. While a two-step procedure is justified, once the Regulatory Agency is established, the present complexity is difficult to justify.

The Chair of the Appellate Tribunal has to be an experienced judge. This is reasonable. But having nine members appears to be overkill and may lead to dysfunctional delays. There may be merit in slimming down the Tribunal through the Amendment or the new Law.

In addition, the Law must specify that the decisions of the Appellate Tribunal are final. Having another layer of appeal to the courts, as in India, is likely to be counter-productive.

Consultation

“Independent” Regulatory Agencies are shielded from the normal procedures of Ministerial accountability to Parliament. Therefore, they are subjected to additional requirements of transparency and consultation to ensure procedural legitimacy. Possibly because at present the regulatory functions are performed by the Ministry/Department, these provisions have been omitted from the Law. This is a pity because legitimacy is not the only rationale for consultation. Consultation is justified in technical fields such as telecommunications because knowledge of the rapidly changing industry and markets lies

with operators and with experts and groups external to the Ministry. This has been recognized in the actual practice of consultation by the Ministry with regard to the Rules.

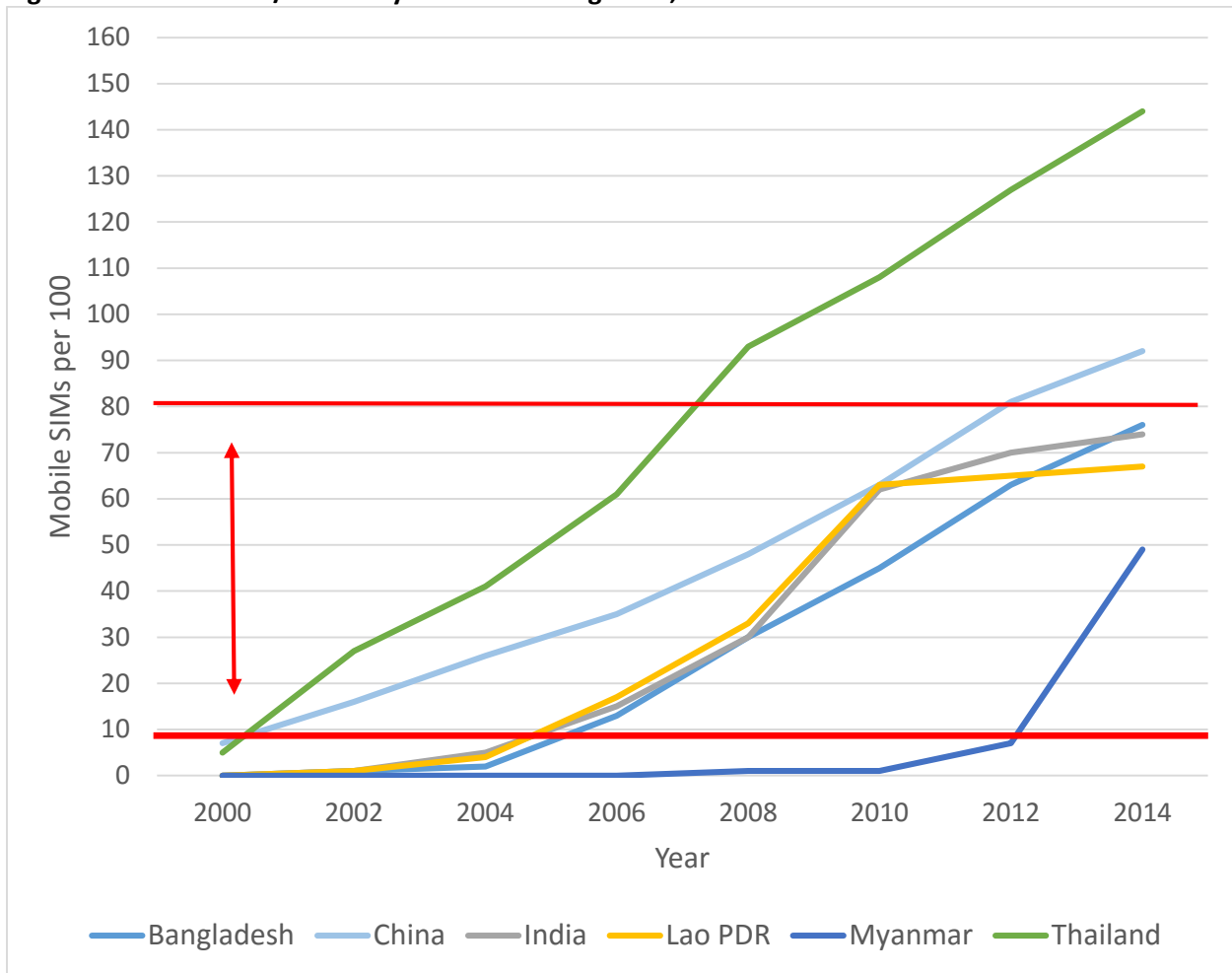
Section 74 enables the setting up of a National Telecommunications Advisory Committee for the purpose of providing advice to the Ministry on matters related to the telecommunications sector and related technical standards, managing frequency bands, consumer protection, and laying down strategies for the improvement of telecommunications sector. The committee shall have the Minister or a person assigned by the Minister as the chairman as well as representatives from information and telecommunications service businesses, consumers, experts, and representatives from the Department. The duties of the committee are to be prescribed separately.

This is a rather clumsy instrument, but one that may be repurposed by a willing Minister to serve consultative functions. For example, the clumsy omnibus composition may be worked around by creating sub-committees with expert chairs designated by the Minister and the duties may be prescribed to include consultations of the type that have been conducted in the course of approving the regulations.

Achievements and challenges

According to the data reported by the ITU in 2015, Myanmar was more than half way to its goal of 80 mobile SIMs per 100 people by the end of 2014 (Figure 2; connectivity at the commencement of reforms, the target to be achieved and the gap are marked). It was still behind its neighbors on this particular indicator, but has made rapid progress, perhaps the fastest in the world.

Figure 2: Mobile SIMs/100 in Myanmar & its neighbors, 2000-14



Source: ITU <http://www.itu.int/net4/itu-d/icteye/>

The ITU publishes a composite index known as the ICT Development Index (IDI) annually. In the version published in late 2015, Myanmar had advanced eight positions in the ranking, and had overtaken both Pakistan and Bangladesh.⁶ Though significant progress was made in the increase of mobile connections, the principal drivers of better performance reflected in the composite index were Internet related. It is now ranked 142nd among the countries that are assessed by the Index.

The number of mobile SIMs per 100 people increasing from one in 2010 to 49.5 by end 2014 contributed to a six-place advance in the Access Sub-index of the IDI. But most significant is that Myanmar overtook Pakistan and Bangladesh primarily on the strength of Internet use, as evidenced by the massive increase in active mobile broadband subscriptions and a close to fourfold increase in bandwidth per Internet user. Active mobile broadband subscriptions per 100 inhabitants increased from 0 to 14.9 within four years. As a result, Myanmar's Use Sub-index value was almost three times that of Pakistan and more than double that of Bangladesh. These countries had started their sector reforms almost two decades

⁶ <http://www.itu.int/net4/ITU-D/idi/2015/>

earlier and were not disadvantaged vis-à-vis Myanmar, still a least developed country, according to the UN.

The designers of the 2012-14 sector reform, the three suppliers of mobile voice and broadband services, and the people of Myanmar have, with the help of some external factors, achieved an increase in Internet use at an unprecedented pace. At most, the take-up reflected in the ITU data occurred over a 12-14 month period, starting from August 2014 when competitive supply commenced.

The reformers in the MCIT and their advisors steered a path between continued dependence on the government-owned former monopoly supplier and over-reliance on new entrants supported by foreign direct investment. No exclusivities were granted, but the bidders for the new licenses were given a clear picture of what they could expect in terms of competition. Demands for compulsory partnership with domestic firms were resisted, thereby giving the two foreign-owned new entrants the flexibility to act as they saw fit and to energize the market. These demands were instead channeled into the fourth license that is about to be issued.

The former monopolist, MPT, was not left to respond to the well-resourced new entrants on its own. Its management was handed over to international partners KKDI and Sumitomo with experience in competitive markets and access to capital. The first nationwide representative sample survey of teleuse in Myanmar conducted by LIRNEasia in February-March 2015 showed that still the largest number of connections were being supplied by the rejuvenated former monopolist.⁷

The suppliers were aggressive in their rollout and marketing, perhaps even at times connecting more customers than their inchoate networks could handle. But they were also flexible. They deviated from their original plans, for example when it was seen that Myanmar customers were more interested in data than originally thought.⁸

And the consumers played their part too. The LIRNEasia survey showed that by February-March 2015, 63 percent of all phone owners had purchased smartphones, with three percent owning both smartphones and feature phones. Smartphone penetration is in the 60-90 percent range, according to some reports.⁹

The availability of relatively low-cost smartphones was a critical external factor. While cheap smartphones were found among those surveyed, the mean price that had been paid was USD 87. Despite continuing problems with the standardization of the Myanmar font, the smartphones made it possible for the rapid take-up of data services. At the end of 2015, Telenor Myanmar reported that 52 percent of its customers were data users.¹⁰

There may be concern that the full potential of the Internet cannot be realized through the predominant smartphone interface. In cooperation with local civil-society organizations, the operators are rolling out

⁷ http://lirneasia.net/wp-content/uploads/2015/07/LIRNEasia_MyanmarBaselineSurvey_DescriptiveStats_V1.pdf

⁸ Trautwein, Catherine (2016, April 1). Myanmar mobile leaps along, *Myanmar Times*, <http://www.mmmtimes.com/index.php/business/technology/19801-myanmar-mobile-leaps-along.html>

⁹ Nyunt, Aung Kyaw (2016, February 18). Smart decisions equal big spending on mobiles, *Myanmar Times*, <http://www.mmmtimes.com/index.php/business/technology/19052-smart-decisions-equal-big-spending-on-mobiles.html>

¹⁰ Hammond, Clare (2016, February 11). Telenor racks up 14 million users, *Myanmar Times*, <http://www.mmmtimes.com/index.php/business/technology/18928-telenor-racks-up-14-million-users.html>

large numbers of common-access centers. Digital literacy is being promoted. Apps and content that would be of interest to Myanmar customers are being developed at a pace.

A fourth license is to be issued to a consortium that includes 11 local companies, a subsidiary of military-run Myanmar Economic Corporation and VietTel, the transnational mobile operator owned by Vietnam's Ministry of Defense.

Legislative, policy and regulatory challenges

The Law that was passed in 2013 was a major improvement on the original drafts that were being circulated in 2012. Heroic efforts have been made to improve it through the subsidiary legislation. But, as shown above, it still has flaws. The creation of a new independent regulatory agency requires new legislation, or a substantial amendment.

The Law, as written, gives a large role to the Ministry.¹¹ For the Ministry to play its role of setting the broad policy frameworks that take into account the larger priorities of the government (even if regulatory functions are handed over to the new Regulatory Agency through an Amendment or a new Law), it must have the necessary expertise. In the past, it has drawn expertise from the fixed incumbent. It would not be proper to rely on experts drawn from only one licensee. An alternative is needed. Generalist administrators cannot perform telecommunication policy functions effectively.

In country after country, ill-informed regulators and policy makers have caused enormous harm. It is imperative that the government become aware of this problem and act to preclude it from happening in Myanmar.

Significant progress has been made in building capacity within the current regulatory agency, the Department of Post and Telecommunications, but much remains to be done. A sector-specific, ex-ante national regulatory agency exercises an enormous amount of power over the sector. If it does not work properly, it is like having a traffic-lights system that works erratically. Therefore, the greatest care is needed in the design of the proposed Myanmar Telecommunications Commission (MTC) to ensure that it follows the principles of natural justice (UK term) or due process (US term) resulting in procedural legitimacy.¹² Its decision makers should be independent of the entities it regulates and insulated from day-to-day interference by the political authorities.

The fact that the government will continue to own MPT, still the largest operator and one which enjoys legacy advantages, makes the above even more important. It is important that MPT's competitors do not feel they are treated less favorably than the MPT. Infrastructure requires long-term investment and stability of policy environment. Giving the MTC independence from the Ministry is necessary for achieving that stability.

Given the paucity of persons with the necessary regulatory knowledge, there may be merit in creating a limited window/pathway for the employment of foreign personnel (precedent may be found in Botswana, Singapore and Hong Kong) and expatriate Myanmarese (current Chair of Bangladesh NRA is an expatriate Bangladeshi; Sri Lanka brought in a Sri Lankan academic who was teaching in the US to

¹¹ The recently elected NLD government combined the MCIT with the former Ministry of Transport in the new Ministry of Transport and Communications.

¹² Samarajiva, Rohan (2001). Regulating in an imperfect world: Building independence through legitimacy. *Info*, 3(5), 363-68.

establish the NRA in 1998; India also brought in expatriate experts when TRAI was established). The decision making collegial layer may be reserved for Myanmar citizens.

Given the rather modest compensation packages offered to government servants, there is merit in considering higher pay packages for MTC professional staff so that persons of quality may be attracted. It is important to ensure that the necessary specialized knowledge accumulates within the MTC by erecting some barriers to frequent transfers to other government entities. However, it is also important to allow MTC staff to develop their careers, for example by allowing movement among regulatory agencies (e.g., energy, transport, securities and exchange regulatory bodies).

Given the specialized knowledge that is required and the uneven nature of workload, it is customary to employ domestic and foreign consultants on important tasks and to deal with peaks in workload. General provision should be made in the legislation for this mode of working.

It is common to fund NRAs through regulatory fees levied from entities subject to regulation. However, it is important to build in safeguards against abuse of these funds. Transparency of budgets and expenditures are essential. There may be merit in permitting public input on the budget through biennial or triennial hearings. At the conclusion of the hearing, the MTC will reset the percentage of the regulatory fee. Given prejudices against foreign travel and training expenditures, there is a case to be made for setting minimum expenditures on these important activities.

The MTC should be required to publish regulatory manuals and work plans. These documents should be developed in consultation with stakeholders. They should include time lines and default outcomes that when the time lines are not adhered to.

In most developed economies, competition authorities exist. It will be some time before a competition authority is established in Myanmar. There may be merit in including competition powers for the sector. Given the necessity of coordinating actions with other regulatory bodies, existing or which will be created in the future, provision should be made for mechanisms to ensure consistency and reduce forum shopping.