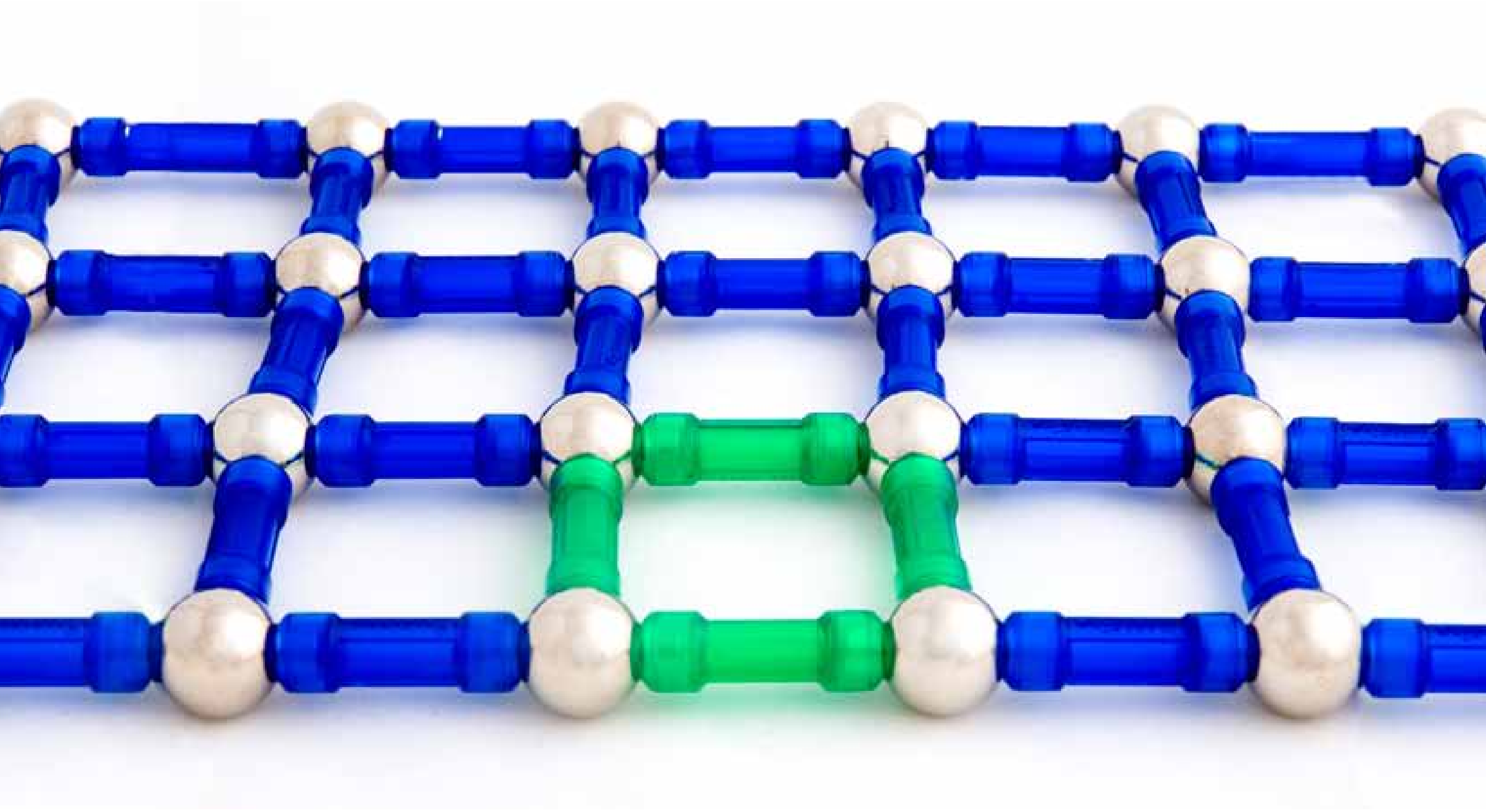
Deloitte.

Myanmar
The next Asian telecommunications greenfield?



Technology, Media & Telecommunications

Contents

With one of the lowest wireless penetration rates in the world, Myanmar's telecommunications sector is positioned to witness robust growth in the coming decade.

Executive summary

Having spent the past half a century under military rule and engaged in civil wars at the same time, Myanmar remains one of the poorest countries in the world and certainly the poorest in Southeast Asia. However, this once self-imposed isolated country is now undergoing a series of political, social and economic reforms that promises boundless opportunities for international trade and investment. The reforms, led by President Thein Sein, with the support of the National League for Democracy (NLD) leader, Daw Aung San Suu Kyi, are aimed at ending two decades of stagnation and integrating Myanmar with its Asian peers in order to seek investments from across the globe.

Apart from the potential wealth to be generated from its large reserves of natural resources, the telecommunications sector is poised for a boom after decades of poor connectivity. With a population of around 62 million, Myanmar remains one of the last undeveloped telecommunications markets in Asia with fixed line penetration standing at slightly over 1% and mobile penetration rates at just below 4% at the beginning of 2012[1]. However, penetration rates would be higher than reported figures if they took into account the actual usage of fixed line and mobile connections. Currently, there are a number of proposed approaches to transforming the nation's telecommunications market. The first is to establish a national regulated infrastructure with active network sharing for Mobile Virtual Network Operators (MVNO) to enter the market. However, a preferred solution is to implement passive network sharing, giving greater control to the telecoms operators. Lastly, the traditional approach of independent operator networks is also being considered.

Our understanding is that local licenses have been proposed to be awarded to state-owned Myanmar Post and Telecommunications (MPT) and the Internet service provider Yataraporn Teleport (YPT). There have already been discussions about granting an additional one to two operator licenses. However, it is currently unclear as to whether a decision has been reached. The race to take advantage of this virtually untapped market and to secure the remaining two foreign licenses has seen fierce competition between international players. One key issue remains: will international operators have the appetite to take a vested interest in the development of the nation and to invest the much-needed capital in the long run? Currently, as the situation stands, Hutchison Global Communications will provide voice and data services in conjunction with MPT. In addition, Digicel, Telenor Group, Swedish TeliaSonera and Malaysia's Axiata are also lobbying for the proposed operating licenses.

The potential in this telecommunications market is immense. High ambitions have already been set by the quasi-civilian government to increase the teledensity from current levels of approximately 3% to 50% by 2015. However, there is a need to balance the desire for a speedy catch-up with the need to learn from other nations' experiences in developing their telecommunications networks. It is also important to bear in mind that long-term returns are not guaranteed even though Myanmar has a large population and low telephony penetration rates.

Most of the potential within the telecommunications industry lies within the regulatory framework and environment, which is still a work in progress. The current environment is risky, with particular threats of civil unrest and corruption. Clarity on the regulation and tender process is crucial and companies are keenly aware of Myanmar's regulatory ambiguity. In addition, Myanmar's current telecommunications laws are bewildering, with no formal plans for financing network expansion and building technological infrastructure. There is currently a need for 15,000 towers to be deployed and commissioned yet progress has been scant. In addition, frequency optimization in the country is chaotic and it is not clear if geostationary satellite connectivity is able to reach remote areas of Myanmar such as the western and coastal regions during the long intense monsoon season.

Nevertheless, there remains great hope for Myanmar's telecommunications sector despite the amount of groundwork that needs to be developed in order to improve the overall market. Deloitte believes that if the government is successful in implementing a stable regulatory framework in addition to executing structural reforms, Myanmar will be able to benefit from international investments and reap the corresponding benefits that will help propel the nation forward.

[1] "Myanmar - an untapped telco market", Nomura Equity Research (14 March 2012).

Telecommunications in Myanmar

The key to the successful development of the telecommunications sector will be the liberalization of the market and the establishment of a stable regulatory regime. Delays in liberalizing the telecommunications sector will adversely affect the growth of the sector and cause knock-on effects on the broader economy.

Impetus for long-term economic growth

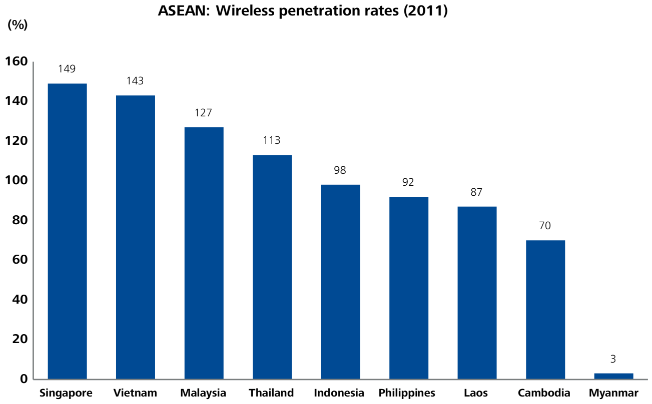
Deloitte expects competition to be intense in the telecommunications sector in Myanmar. The primary success factor in the reform of telecommunications markets in other countries tends to be the creation of a competitive market structure which encourages operators to invest in network roll-out and provide better services to their customers. Countries which have attempted to limit competition through complex industry structures have seen slower growth rates in the market. This is also the case for countries which have failed to create a stable and transparent legal and regulatory structure to govern the sector.

Another challenge faced by some countries is the destructive price wars that have broken out between operators and pushed prices down to unsustainable levels, often with adverse effects on investment incentives and service quality. The price war that broke out in Indonesia's mobile sector from 2007 to 2008, for example, caused prices to fall to US$0.01 per minute, resulting in severely diminished annual revenue growth figures and operating profits for telecommunications operators. Multiple subscriber identification module (SIM) card usage burgeoned before operators eased off aggressive price-cutting and concentrated on further segmenting their prepaid user base as well as driving up average revenue per user (ARPU) numbers[2].

Investment in the telecommunications infrastructure has also proven to be an engine of growth for the wider economy in developing countries as it improves the productivity and sociability of the nation, which in turn contributes to long-term economic growth. Previous Deloitte studies have noted that with every 10% increase in mobile penetration, the gross domestic product (GDP) growth increases by 1.2%[3].

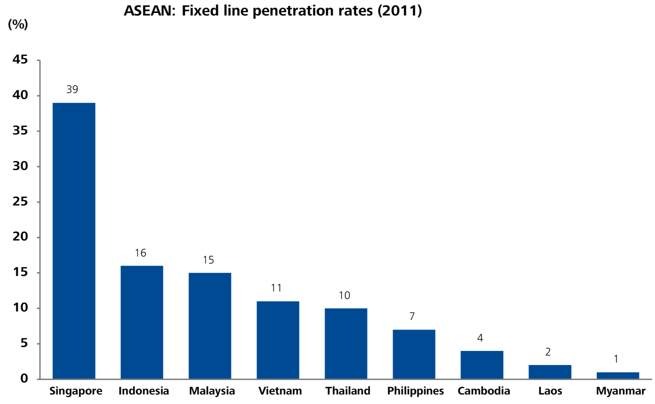
Myanmar needs thousands of kilometers of fiber infrastructure and in excess of 15,000 towers to be installed by 2015 in order to provide coverage to meet targeted levels of telephony penetration. The estimated cost of this network infrastructure investment stands at US$4 billion and there are questions regarding the financing sources for these operations.

Figure 1



Source: ITU

Figure 2



Source: ITU

[2] "Mobile price war 2.0", Marc Einstein, Frost & Sullivan (11 March 2010).
[3] "Global Mobile Tax Review 2006-07", Deloitte (2007).

Myanmar: country profile

Key statistics in 2012

- Population: 62 million
- Geography: The nation shares borders with Bangladesh, China, India, Laos and Thailand. This strategic location is politically and economically advantageous especially with its deep sea ports.
- Government: Military-dominated, quasi-civilian republic
- GDP: US$52.2 billion
- Real GDP growth rate: 4%
- GDP per capita: US$1,387
- Fixed lines connections: 0.62 million (<1%)*
- Mobile connections: 2.45 million (<4%)*

**Official numbers do not include the unreported usage of fixed line and mobile connections*

Telecommunications sector overview

- The country's mobile phone penetration is low at just below 4% in 2012, compared with 57% in Cambodia, 64% in Laos, and more than 100% in Thailand.
- The prices for handsets range from US$45 to US$1,500 and SIM card registration fees ranges from US$150 to US$350. Significant activity in the country's black market has also driven up prices for handsets.
- Telecommunications services are out of reach for average Myanmar citizens, with call rates at nearly US$0.60 per minute.
- While close to 70% of the population live in rural areas, the telecommunications infrastructure is biased towards cities. Poor coverage outside urban areas limits the usage of phones when users are travelling into rural areas.
- Wireline penetration is not expected to increase. Thus, a future increase in Internet penetration would depend on the availability of affordable mobile Internet, as evidenced by the success of WiMax in Yangon.
- There is a desire for Long Term Evolution (LTE) rollout with the false expectation that this will resolve current network issues. However, the majority of the population only requires 2G for text-based communication.

Country outlook

- It is expected that the US and European sanctions would be significantly eased if the current pace of political and economic reform continues. With the removal of sanctions, Myanmar is likely to see increased foreign investments in infrastructure as well as in natural resources like petroleum.
- Demand for telecommunications services will grow as a result of the nation's young labour force, rising incomes, new business ventures, as well as the restructuring of its financial sector.
- Myanmar has now opened its doors to foreign investors, especially to businesses from member ASEAN countries as it ramps up its economy with the imminent release of new Foreign Direct Investment (FDI) Laws.
- Myanmar is the next host for the upcoming Southeast Asian Games in 2013, driving the need for key infrastructure improvements in airports, tourism, international banking and telecommunications.

Sources: World Bank, IMF Outlook & Nomura Equity Research

Realizing the potential

In order to realize the full potential of Myanmar's telecommunications market, large-scale investments and a favorable operating environment are crucial.

Building blocks

The road to reform has begun in earnest, and while the international telecommunications industry hovers in anticipation over clear signals of stability, early entrants with high risk thresholds have taken the leap to enter Myanmar and begin operations. There is a DOCOMO store en route from the airport to the city, an Ericsson office in the Park Royal hotel, and numerous other telecommunications players present in the market.

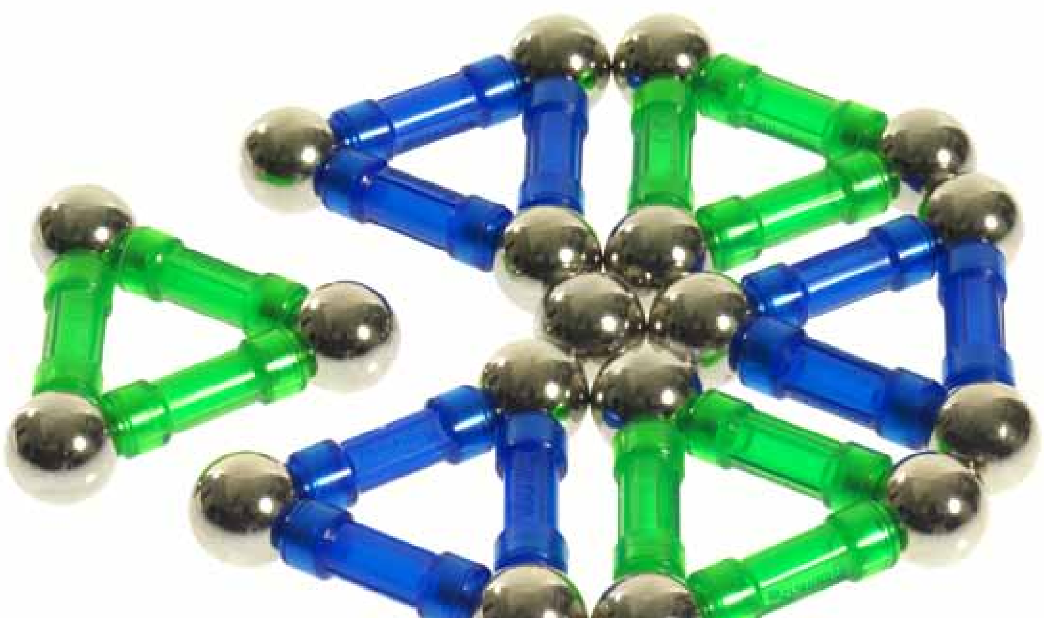
With the government in the final stages of reviewing the amended FDI Laws and the Telecommunication Laws, in addition to the imminent appointment of a Consultant to advise the Ministry on the tender process for up to four operator licenses, the country seems to be on the cusp of a telecommunications revolution. However, there are many unresolved matters that must be addressed if this revolution is to be successful in delivering the much needed communications services to the country. These include:

- The split of the Ministry of Communications, Posts & Telegraphs (MCPT) into a regulatory entity and a telecommunications operator
- Subsequent corporatization of MPT
- Finalizing key regulations required to guide infrastructure development and operators
- Spectrum planning and refarming of existing spectrum usage by MPT
- Market structuring decisions regarding the number of operators and the type of services that they will be able to offer
- Planning and implementation of hundreds of thousands kilometers of fiber and an estimated 15,000 towers to provide the coverage required to hit targeted penetration rates

These key factors are just some of the areas the government needs to resolve as they build the foundation of the vital telecommunications sector to unleash its economic benefits and realize the growth potential of Myanmar.

MCPT as an independent regulatory entity and operator

For many years, MCPT has acted as Myanmar's telecommunications regulator and owns the primary telecommunications operator, MPT. It has also established YTP, a joint venture between local private companies and MPT. However, in order to encourage foreign investment and to ensure a fair marketplace for operators, an agreement has been made to separate the regulatory entity from MPT and YTP. This activity is in the early stages of planning and no timeline has been announced publicly at this stage. It is most likely that the split will be linked to the release of the Telecommunication Law that is currently under review.



Africa's telecommunications revolution

Key lessons learnt

- Mobile is the driving force of Africa's telecommunications revolution, with limited fixed consumer network development
- The environment that is most effective in driving investment and penetration is that of open competition at an infrastructure layer
- Complimentary mobile services, such as mobile payments, improve penetration and increase country GDP levels

In Africa, 90% of all communications use mobile phones and networks, and the telecommunications revolution has transformed the lives of millions of people. The success in Africa is largely attributed to the liberalization of telecommunications regulations and mobile operators' ability to provide mobile coverage rapidly in a transparent market. Lower prices and higher quality services for customers have significantly increased customer subscriptions, which have in turn improved levels of productivity and sociability in many countries.

One of the most dramatic outcomes of Africa's telecommunications revolution has been the establishment of complimentary mobile banking services. The mobile money transfer service M-PESA was first established in Kenya by mobile network Safaricom in conjunction with Vodafone to allow customers to store, transfer and redeem credit on their mobile phones.

It is estimated that 80% of Sub-Saharan African adults do not have access to conventional bank accounts, and these revolutionary mobile banking services have provided them with a cheap and easy way to transfer money to families and pay outstanding bills.

In 2010, M-PESA had approximately 7 million customers and processed as much as 10% of Kenya's GDP. As the mobile banking phenomenon continues to take over Africa, complimentary mobile services like this will continue to enhance penetration rates as well as positively impact GDP levels of developing countries.

Sources:

"Africa's ICT Infrastructure, Building on the mobile revolution", D. J. Williams, Rebecca Mayer and Michael Minges, World Bank (2011).
"Telecommunications in Africa", KPMG (Telecoms Professionals at Innovation Africa Digital Summit 2012).
"M-PESA and Nick Hughes", Lisa Duke and Rajesh Chandy, London Business School (14 April 2011).

Corporatization of MPT

The government has expressed its desire to transform MPT into a corporate entity that will be independent of government funding when the regulatory entity is split from MPT and YTP. This process involves a number of important steps that may take 3 to 12 months to implement. During this process, MPT will be planning its future corporate structure, and it is public knowledge that they have had visits from international telecommunications operators such as Axiata, Bharti Airtel, NTT DOCOMO, PT Telekom, Telenor and others.

MPT, as well as YTP, has been guaranteed a license in the tender process, making it appealing for international operators to seek joint ventures with the incumbent players. The partnership will enable international operators to access preferred spectrum bands and secure existing customers, revenues and relationships. However, there is no denying that the incumbent operators come with a multitude of problems in the form of inefficient operating practices, incompatible systems, and different organizational cultures and values, just to name a few. MPT may also restrict foreign ownership to a lower level, resulting in the international operator carrying the incumbent.

For an operator (or consortium of operators) that is ready to make talent and capital investments in the country, an independent license may be preferred, but this comes with additional risks that need to be taken into consideration.

Infrastructure and operator regulations

Prior to any further development plans, there are two key pieces of legislation that are currently being reviewed to pave the way for both telecommunications and wider economic reforms. These are the FDI Law and the Telecommunications Law.

The FDI Law has now been passed after ambiguity in the foreign ownership levels were clarified, allowing foreign investors to own up to 100% of local businesses with Foreign Investment Commission (FIC) approval. It is expected that this will provide the stable platform that many countries have been waiting for before releasing funds for investment into Myanmar. Historically, investments have originated primarily from China and Thailand, and this is likely to change as the West begins to lift its economic sanctions with the reforms in Myanmar.

The other major legal reform is the Telecommunications Law, which currently restricts non-government entities from owning telecommunications infrastructure. The law will define a number of key dimensions of the sector reform including the number of operator licenses, spectrum allocation guidelines, universal service obligations, regulatory framework, and interconnections. It is also expected that the law will outline some form of network sharing in order to optimize the deployment of infrastructure to achieve the optimal level of growth required to reach targeted levels of telecommunications penetration.

Spectrum planning and refarming

MPT has to date been the sole telecommunications operator (other than the military) in Myanmar, and as a result has had few concerns regarding the use of spectrum in deploying its network and resolving interference issues. As part of the allocation of licenses to other operators, a clear allocation of spectrum will be vital in enabling the efficient provision of services to the market.

Additionally, MPT's existing network needs to be reviewed to ensure that all its operations are migrated to the allocated network spectrum assigned to them. This process of refarming spectrum to free up blocks for other new operators requires engineering skills for planning and implementation. This skillset is scarce in Myanmar and has the potential to cause disruptions to service if not managed correctly.

Market structuring

As mentioned previously, a key reform in the Telecommunications Law will be the decision as to how to structure the market. At present, most of the towers, backhaul infrastructure, and international gateways are owned by MPT.

Successful telecommunications reforms around the world have involved a basic model of new operators building, owning and operating their own network infrastructure. This model, when implemented correctly, has resulted in high levels of investment, rapid network rollout and intense competition. However, this has resulted in some duplication of infrastructure which has raised concerns in some countries. Through a combination of market forces and regulatory pressure, there has been some consolidation of passive communications infrastructure through a range of mobile tower outsourcing and global sharing deals.

More recently, a few countries have proposed new models of telecommunications infrastructure ownership and control. In South Africa, the government recently proposed that fourth generation (4G) spectrum will be given to a restricted number of wholesale-only operators who will then sell network services to the retail mobile operators. In Kenya, the government has proposed the creation of a Public Private Partnership (PPP) between the government and a consortium of the industry players to develop a single national 4G network. However, these models remain new, largely untested, and raise many challenges in their design and implementation.

In Myanmar, large-scale investment is required if the government's penetration targets are to be met. The geography of the country will also create challenges for operators who wish to roll out networks across the country in a short timeframe. The global mobile industry has faced similar challenges in many other countries so this should not be a barrier to the rapid growth of the sector.

However, given the ambitious targets set by the government, there may be merit in coordinating network development in order to reduce capital expenditure and potentially accelerate coverage expansion. There are several different models for this, including network sharing regulations, limited regional exclusivity, and national legislation facilitating access to rights of way for network development. Partnerships between international operators and existing companies in Myanmar will also ensure that the existing infrastructure is fully utilized, a key aspect of a successful sector reform.

Infrastructure development

There are currently 14,000 kilometers of fiber in Myanmar and around 1,800 towers. Over 80% of the fiber infrastructure is owned by the military, while MPT owns the rest. Recognising the need for infrastructure improvement, MPT is currently laying a new link over 2,000 kilometers long from Yangon to Mandalay. However, in order to achieve the target of 75-80% penetration by 2015 – bearing in mind that the majority of the population lives outside the major cities – an estimated 15,000 towers and hundreds of thousands of kilometers of fiber must be deployed in order to significantly increase the telecommunications uptake and generate revenues for investors.

Moreover, Myanmar's landscape will prove to be a challenge with its limited access to decent roads, insufficient stable power, and the sheer amount of engineers that will be needed to improve the nation's infrastructure. Modernizing at too fast a pace may also lead to the undoing of the telecommunications reform. Satellite may be appropriate for some parts of the country, but the costs typically outweigh the benefits and many countries have concerns regarding national security. Additionally, remote infrastructure will need to be secured in order to protect the integrity of the network and investments surrounding physical assets. In a recent presentation, Ericsson also posed the question of how infrastructure deployment could be leveraged to provide other services to the local communities, such as using solar cells to provide power for schools. Consumers will also need many more outlets to charge their phones.

GDP growth rates can be linked to penetration rates, with an improvement of 10% in penetration typically driving about 1.2% in GDP growth[4]. As a result, areas of the country where network infrastructure is first to be developed are likely to be the recipients of foreign investment and economic growth. This will be crucial during the next one to two years as access to foreign capital will be vital to building vibrant economic centers.

Given the above points and the process of developing and running the tender process and evaluation, it is unlikely that operator licenses will be allocated until around mid-2013. During this time, there is a great deal that operators will have to evaluate before they execute their plans to enter the market.

[4] "Global Mobile Tax Review 2006-07", Deloitte (2007).

How Deloitte can help

Connectivity
The global technology, media & telecommunications (TMT) group at Deloitte member firms worldwide understand challenges linked to decreased technology spending, industry convergence, and new management strategies. Through these member firms, the TMT group offers a global footprint, professional principles, multidisciplinary capabilities, and outstanding thought leadership publications - which all add up to a wealth of trusted and worthy resources.

Due diligence
Deloitte's financial services and consulting teams specialize in identifying and quantifying industry and deal-specific risks and opportunities, evaluating quality and reasonableness of historical and projected earnings and cash flows and assessing quality of assets. Deloitte is able to identify hidden costs, commitments and contingencies, as well as quantify liabilities that can be deal breakers. This includes disparity in accounting principles and quality of financial information, lax internal control, transparency and corporate governance standards, proliferation of related party transactions, as well as complex and evolving tax rules and regulations.

Regulatory reform
Deloitte's economic consulting group has a specialized telecommunications team which has provided regulatory and competition advice to telecommunications operators and regulators in over 30 countries. Using microeconomic theory combined with accounting, financial investigation, statistical and econometric analysis, Deloitte develops robust solutions and provides expertise on a wide range of economic issues in the telecommunications sector. Deloitte has previously worked with governments and regulators in emerging markets on the following issues: sector policy, sector legislation, regulatory framework, regulatory authority formation, and support for key sector decisions such as type approvals, spectrum allocations and monitoring, as well as interconnectivity rules and rates.

Market assessment and scenario development
Deloitte's business modeling group has a long track record of providing specialist modeling services in the most challenging situations. The team can help generate confidence and enable better decisions through the development of bespoke forecasting models and analyses.

Deloitte works closely with clients, providing support to a broad range of business critical decisions, covering financing and refinancing, cost reduction, major capital programmes, and transformational projects and transactions. Deloitte's collaborative approach engages and challenges clients to achieve consensus on what really matters to them. The use of modeling professionals and proven methodologies ensures that results withstand scrutiny and inspire stakeholder confidence, whether at board level, with financiers or within public bodies.

Corporate structuring
The restructuring services team provides investigation, restructuring, turnaround and insolvency advice and services to underperforming and financially distressed businesses, their lenders, stakeholders and advisors. Deloitte uses its expertise to identify the causes of the difficulties, work collaboratively to conceptualise the best strategy for business recovery and then develop an optimal financial and operational restructuring solution. Our dedicated teams of chartered accountants, chartered valuers, certified fraud examiners and qualified insolvency practitioners have been involved in a number of high profile independent business reviews and turnaround and disposal engagements. We have significant experience in providing services in consulting, due diligence, insolvency, financial investigation, asset tracing and recovery and valuation. Deloitte also has an enviable track record of managing insolvency cost as well as investigative and restructuring assignments effectively across multiple jurisdictions.

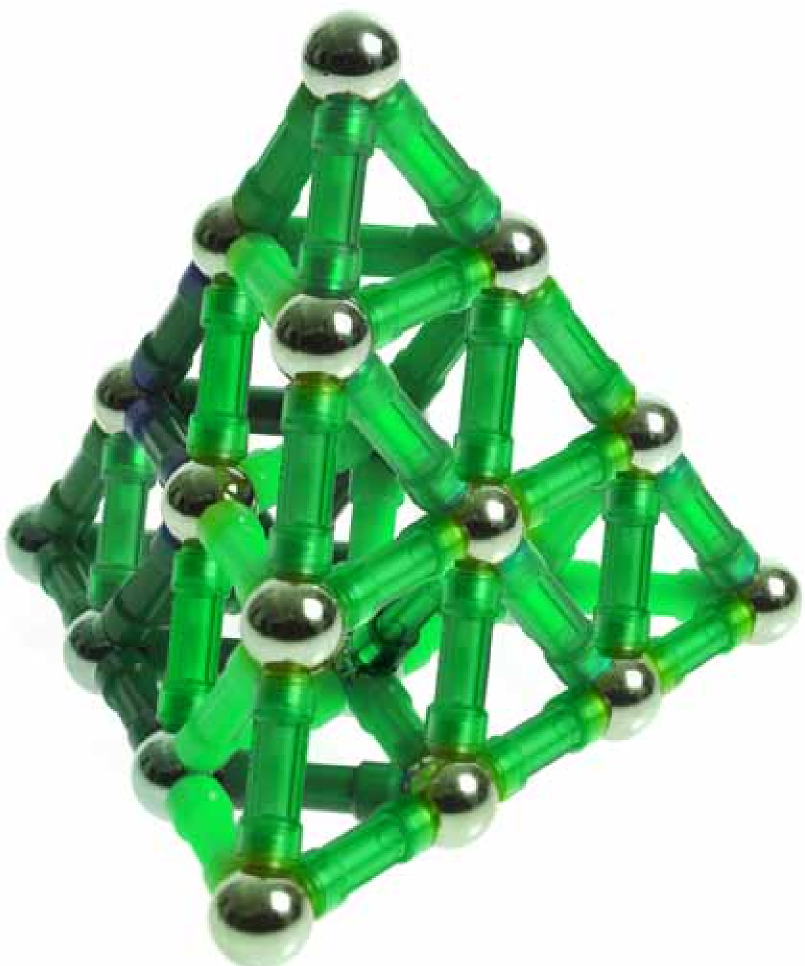
Tax efficiency
Deloitte offers clients a broad range of fully integrated tax services. Our approach combines insight and innovation from multiple disciplines with business and industry knowledge to help companies excel globally. The Deloitte global network can advise on a broad range of tax matters impacting business and desired global effective tax rate. This approach ensures clients' most demanding tax issues – when operating in multiple jurisdictions – are holistically addressed in a coordinated way, by subject matter and industry specialists locally and abroad. Deloitte deploys the right team at the right time to address clients' needs, wherever they operate.

Strategy, operating models and operational implementation

Our strategy & operations team brings deep industry experience, rigorous analytical capabilities and a pragmatic mindset to clients' most complex business problems. Our strategy capabilities span corporate and business unit strategy, merger & acquisitions strategy and sales and marketing. Our operational capabilities reflect the unique issues facing manufacturing organizations, service businesses and infrastructure operations. These are joined with capabilities in finance, performance management and business restructuring.

Project and program management

Deloitte is well-positioned to understand the issues facing enterprises that are trying to formulate, translate, and implement strategy. From working with various organizations from diverse industries, we have developed a unique insight and vision into the trends and forces driving the respective business and the challenges delivering enterprise-wide change. With our deep experience in the implementation of major change programs and complex policy programs, our capabilities include portfolio management, rapid program setup, project lifecycle support, program management center of excellence, program management office, project and program assurance, benefits management, and project management software.



Deloitte's global coverage

About Deloitte

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte has in the region of 200,000 professionals, all committed to becoming the standard of excellence. In Asia Pacific, over 40,000 professionals serve clients from more than 120 cities in over 20 countries.

Deloitte's professionals are unified by a collaborative culture that fosters integrity, outstanding value to markets and clients, commitment to each other, and strength from cultural diversity. They enjoy an environment of continuous learning, challenging experiences, and enriching career opportunities. Deloitte's professionals are dedicated to strengthening corporate responsibility, building public trust, and making a positive impact in their communities.

About Deloitte Southeast Asia

Deloitte Southeast Asia Ltd – a member firm of Deloitte Touche Tohmatsu Limited comprising Deloitte practices operating in Brunei, Guam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam – was established to deliver measurable value to the particular demands of increasingly intra-regional and fast growing companies and enterprises from across the consumer business, energy & resources, financial services, life sciences & health care, manufacturing, public sector, and technology, media & telecommunications industries.

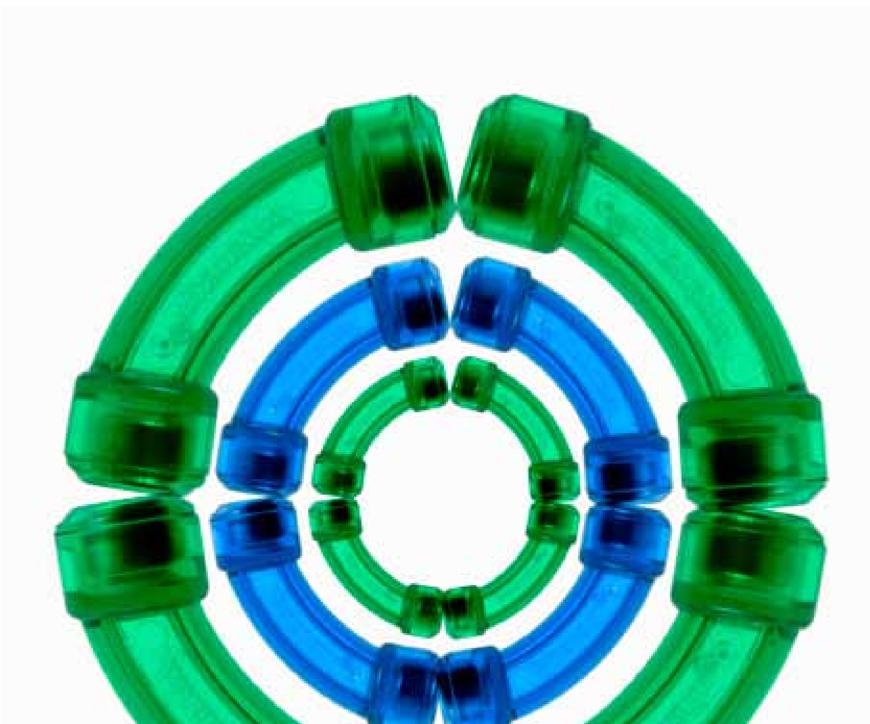
Comprising over 250 partners and 5,500 professionals in 22 office locations, the subsidiaries and affiliates of Deloitte Southeast Asia Ltd combine their technical expertise and deep industry knowledge to deliver consistent high quality services to companies in the region. All services are provided through the individual country practices, their subsidiaries and affiliates which are separate and independent legal entities.

Deloitte in Myanmar

Deloitte can provide a range of services in Myanmar, ranging from market assessments, legal and tax advisory, business setup, to enhanced due diligence on potential business partners. Deloitte is working with Myanmar Vigour, a reputable professional services firm with deep local knowledge and experience serving global companies, to deliver more value to businesses in Myanmar.

Deloitte's recent experiences in Myanmar include:

- Financial, tax and legal due diligence for Japanese trading companies
- Pre-feasibility study and design of the development scheme for a special economic zone (SEZ)
- Industry design and economic study for a SEZ
- Business partner due diligence for a major US corporation entering the market
- Country due diligence in Myanmar for a Chinese mining company



Contact us

Consulting

John Goeres
Southeast Asia TMT Industry Leader
Executive Director
+65 8233 9412
jgoeres@deloitte.com

Nicholas White
Director
+65 9857 0558
nickwhite@deloitte.com

Christopher Tun
Director
+95 9 448 015 194
ctun@deloitte.com

Financial Advisory

Jamil Raza Syed
Executive Director
+65 6216 3235
jasyed@deloitte.com