

Global Computing

Mobile Computing and Political Transformation

Connecting increased mobile phone usage with political and market liberalization.

IN MUCH OF the world personal computing happens with mobile phones. In 2010 the South East Asian country of Myanmar (aka Burma) had the world's lowest rate of mobile phone penetration. Only 1% of its population had a mobile phone subscription, about the same as its landline penetration.⁶ The same year war-torn Somalia experienced 7% mobile penetration, and even North Korea had 1.8%. By 2014 Myanmar had jumped to 54% mobile penetration, Somalia had 50%, and the North Koreans just 11%. The government of Myanmar anticipates 80% penetration sometime this year.¹

After 20 years of military rule, Myanmar held its first election in 2010. The political party aligned with the government won 80% of contested seats but international observers called the election a sham.⁹ The opposition National League for Democracy (NLD, the party of Peace Prize laureate Aung San Suu Kyi) didn't even bother to contest. Contrast November of 2015 when Myanmar held another national election and this time it was viewed as successful.¹² The NLD won just under 80% of the contested seats and today is standing up a new government with a close Suu Kyi confidently tapped as president.^a

a Thanks to a shrewdly crafted national constitution the military of Myanmar still enjoys considerable power including set-asides in the legislature and key cabinet posts and a prohibition against Suu Kyi herself serving as President.



Myanmar's National League for Democracy party leader Suu Kyi is shown on a cellphone screen held by a supporter celebrating election results last November.

It is a stunning set of transformations: In just six years Myanmar increased its mobile phone use by fifty-fold and went from strongman military control to democratic rule. These transformations are both concomitant and connected. After the 2010 sham election the military-controlled government of Myanmar embarked on a series of political transformations. These included real, multi-party elections and a set of market liberalizations that included telecommunication sector reform. The hoped-for outcome of these reforms was inclusive growth brought about by rigorous, well-regulated and

nondiscriminatory competition in both the electoral and telecommunication systems.^b

In Myanmar's electoral system, competition came from vigorous participation (and ultimately the landslide victory) of the opposition NLD party. In telecommunications, competition arose when two private sector opera-

b National monopolies are fine for some systems (perhaps healthcare and education for instance) but are fraught as a political system.¹¹ In telecommunications, well-regulated nondiscriminatory competition has demonstrated broad subscriber benefit though unsound deregulation can temper this.⁸

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tors (Ooredoo from Qatar and Telenor of Norway) came in to compete with the preexisting state operator, MPT. The result was explosive growth in services and a precipitous decline in the cost to use a mobile phone. The average price to purchase a SIM card dropped from \$150 in 2013 to \$1.5 today.² Today many people in Myanmar can afford mobile phones and are using data plans along with voice apps, such as Viber and Skype. They are also using text-based apps, such as Whatsapp, to stay in touch. One-third of recent survey respondents reported accessing Facebook from their phones.⁵

Further development of Myanmar's mobile phone market is expected as sector liberalization proceeds along an internationally established path:

► In 2013, the enactment of a new Telecommunications Law allowing non-state entities including foreign companies to bid for telecommunication service licenses.

► In 2014, the introduction of service by private operators Telenor and Ooredoo using licenses provided for under the new Telecom Law.

► In 2015, steps toward establishing an independent sector regulator. While the Telecom Law made provisions for the establishment of an independent regulator by October 2015, instead by Presidential directive an interim commission was created with the sole task of ensuring that the law to establish the regulator was prepared. In the interim, the Post and Telecommunications Depart-

Myanmar's Digital Gender Divide

In May 2015, 47% of men in Myanmar owned a mobile phone but only 33% of women did.¹⁴ A logistic regression shows that being a woman reduces the odds of owning a phone by 42%, even after controlling for gender differences in education, income, having a TV and electricity at home, having friends with mobile phones and a host of other variables that impact phone ownership.

Because women who don't own a phone are willing to borrow someone else's phone for basic services, they are still able at times to make and receive calls and SMSs. However, they are less likely to borrow a phone for Internet browsing. The odds of using the Internet increases 8% with every unit increase in phone ownership. Not owning a phone negatively impacts Internet use and getting more women to own their own handset is a key step in getting them online.

When asked why they don't own a phone, the top two reasons Myanmar women gave were that they "cannot afford a handset" (38% of non-owning women) or they "have no use for it" (34%). Many emerging economies record gender gaps in ownership, and similar reasons have been cited in Asian household ICT surveys in the past.

However, unlike in some parts of Asia, women in Myanmar have a (well-documented) strong position in the household. Culturally the chief financial officers of the family, women in Myanmar are directly involved in spending decisions, including whether to buy a phone. When purchased, the phone is given to the person who "needs" it the most—often defined as someone who lives or travels outside the home. This is generally the man (who works outside) or son/daughter (who studies outside). A second phone in the household is therefore important to increase women's Internet access.

Women also typically lack digital skills and know-how compared to men. So even when women are involved in the financial decision to buy a phone, it is the man who ultimately chooses the specific model, operator, and apps. Many women in Myanmar do not possess the skills and knowledge to begin using data services and have to rely on others (primarily male relatives or men who work in phone shops) for instructions. This limits access and use as many women, especially in rural settings, feel uncomfortable asking men for help.

Technological adoption is always contoured by politics, economics, and social norms. While more people today in Myanmar are benefitting from mobile telephony the benefits are not equally distributed. Age, gender, and economic standing all come into play. Smart policies and programs are needed to narrow not just the access gap but the digital gender gap in Myanmar.

Helani Galpaya is (helani@lirneasia.net) is the chief executive at LIRNEasia, a pro-poor, pro-market organization working across the emerging Asia Pacific on ICT policy and regulatory issues.

ment in the Ministry of Communications and Information Technology continues to be responsible for the regulatory function (T.D. Norbhu, personal communication, February 29, 2016).

► And ultimately reform of the incumbent national operator, the state-owned MPT, which is slowly restructuring into a commercial entity and may eventually be privatized.

Political transformation in Myanmar enabled this market liberalization in the telecommunication sector and the subsequent explosion of mobile phone use. Now the presence of these phones is producing explosive change to politics. During the 2015 election cycle much was made of Myanmar's "digital election;" citizens traded po-

litical information online and election-monitoring apps proliferated.⁷ But this change was not all positive: new communication technologies served as tools of democratic progress in 2015, but were also used to propagate hate speech, inflame ethnic strife, and diminish democratic growth. Most notoriously, online anti-Muslim messages originated from prominent Buddhist monks, prompting a countermovement by a coalition of civil society activists called the "flower speech" campaign to combat online hate speech and promote communal understanding.¹³

Scholars have long discussed the Janus-faced role of communication technologies on electoral politics and democratic development.⁴ As seen in other countries, mobile phones and

the Internet can be catalysts of positive democratic change, but they can also be tools for minority subjugation and state control.³ Myanmar offers yet another example of the multiple valences these technologies embody. Social media can be a tool for democratic deepening, hate speech, and political control, all at once.¹⁰

Today, Myanmar may be the world's most exciting telecommunication sector in addition to being one of the world's most quickly changing political environments. Technologists cannot ignore political and policy environments. They often trump technology. Moreover, policymakers and politicians cannot ignore Internet and mobile phone technologies. They must ensure the digital revolution supports and does not undermine positive political transformations and inclusive growth. Political and digital transformation go hand-in-hand—you cannot have one without the other. □

References

1. Ablott, M. Foreign operators seek to unlock Burmese potential. GSMA Intelligence, London, 2013.
2. Alliance for Affordable Internet. Delivering Affordable Internet Access in Myanmar. A4AI, Washington, D.C., 2015.
3. Best, M.L. and Meng, A. Twitter democracy: Policy versus identity politics in three emerging African democracies. In *Proceedings of the Seventh International Conference on Information and Communication Technologies and Development*, ACM, New York, 2015, pp. 20:1–20:10; <http://doi.org/10.1145/2737856.2738017>
4. Best, M.L. and Wade, K.W. The Internet and democracy: Global catalyst or democratic dud? *Bulletin of Science Technology Society* 29, 4 (2009), 255–271.
5. Galpaya, H., Zainudeen, A., and Suthaharan, P. A Baseline Survey of ICT and Knowledge Access in Myanmar. LIRNEasia, Colombo, Sri Lanka, 2015.
6. ITU. World Telecommunication/ICT Indicators Database 2015. Geneva, ITU.
7. Kyaw, K.P. and Thu, M.K. Myanmar's digital election. Frontier Myanmar (Oct. 27, 2015); <http://bit.ly/2bkCUlv>
8. Laffont, J.J. and Tirole, J. Competition in telecommunications. MIT Press, 2001; <http://bit.ly/2bfbtGp>
9. Macfarquhar, N. U.N. doubts fairness of election in Myanmar. *The New York Times* (Oct. 21, 2010); <http://nyti.ms/2aS2ONU>
10. Pietropaoli, I. Myanmar: Facebook should warn users about risks of self-expression. *The Guardian* (Nov. 2, 2015); <http://bit.ly/20oMzsy>
11. Sen, A. *Democracy as Freedom*. Oxford University Press, 1999.
12. The Carter Center. Observing Myanmar's 2015 General Elections Final Report. Atlanta, GA, 2016.
13. Trautwein, C. Sticking it to hate speech with "flowers." *The Myanmar Times* (Mar. 2015). Yangon, Myanmar.
14. Zainudeen Z. and Galpaya H. Mobile phones, Internet and gender in Myanmar. London, GSMA, 2015.

Michael L. Best (mikeb@cc.gatech.edu) directs the United Nations University Institute on Computing and Society (UNU-CS) in Macau SAR, China. He is associate professor, on leave, with the Sam Nunn School of International Affairs and the School of Interactive Computing at Georgia Institute of Technology where he directs the Technologies and International Development Lab.

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