Smart Transitions?: Foreign Investment, Disruptive Technology, and Democratic Reform in Myanmar

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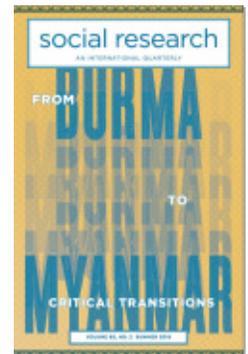
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PREDICTING THE FUTURE SUCCESS OF MYANMAR'S CURRENT TRANSITION toward democracy is more guesswork than science—especially before the next nationwide multiparty elections scheduled for November 2015. In the short term, the political attention of both domestic participants and foreign observers is focused primarily on three issues: (1) highly contested constitutional reform measures[1]; (2) the cease-fire negotiations with ethnic minority groups against whom the central government has been waging war since Myanmar (Burma) gained independence in 1948; and (3) the government's ability to hold legitimate democratic nationwide elections, given the likely extensive political protest that would ensue if both constitutional reform and cease-fire negotiations fail.

Even as foreigners (sympathetic observers, anxious stakeholders, and would-be profiteers) depict themselves as "waiting" for Myanmar's citizens to seize democratic political reform, they are getting down to the business of transforming what they see as a separate but equally important set of obstacles to freedom in Myanmar: the country's anachronistic structures of economic productivity and underde-

veloped business culture. Many of them already have begun investing heavily in the Myanmar they imagine will emerge in the process.

Their own part in the business of Myanmar's transformation is focused on fostering foreign investment, "disruptive technology," and social innovation. In just the past few years, they have risked billions of dollars to secure a new development vision that seeks to transform Myanmar's urban locales—particularly the emerging megacity of Yangon, but also Mandalay, and the newly erected capital city and military headquarters of Naypyidaw—into "smart cities."[2] It seeks also to incorporate them into the existing transnational archipelago of other smart-city development projects fueling the growth of today's global, knowledge-capitalist economy. Their efforts undoubtedly will shape Myanmar's long struggle for democracy.

Their vision of economic development projects an efficiently organized system of knowledge production and problem management, a culture of social innovation, creativity, and entrepreneurship, and a future society that enhances all citizens' "freedom to think." Smart technology produces smart cities and smart culture, which in turn produces smart thinking and smart people. This vision of development anticipates technologically "leapfrogging" from the outset the infrastructural obstacles and environmental challenges, as well as human and social mobility problems that burden most contemporary cities, especially "megacities" (that is, less intelligent cities with populations of 10 million or more).[3] It asserts, too confidently, that the information and communication technologies it is selling can provide solutions to the problems created by previous rounds of technology-led development.

Reminiscent of the military's strategies of urban governance that it proclaims to "disrupt," this vision presumes that all aspects of a complex city like Yangon can be measured and monitored and treated as technical problems that can be addressed through technical solutions. It promotes an ideology of "solutionism" (Mozorov 2014) that tells us all complex social formations, situations, and relations can be translated into well-defined problems that can be solved or optimized

through computation. It fosters the technocratic, and apolitical, view that the challenges facing Myanmar's economic and urban development are something that we might understand in detail, if only we had enough data enabling us to control it through the blunt force and instrumental reasoning of science and engineering. As Dan Hill notes, "This control room or dashboard metaphor, common to most smart city visions, seems hopelessly inappropriate for cities, even if we focus on the 'urban systems' that a city government might ostensibly run" (Hill 2013). Such conceits seem all the more inappropriate for cities struggling to democratize their institutions.

Paradoxically, foreign investors in Myanmar warn us that their optimistic economic forecasts (and thus the fulfillment of their vision of development) are contingent on the government's ability to institutionalize democratic reforms, foster greater regulatory transparency, and rein in the corruption and cronyism that stifle market efficiency and incentive. Yet, the vision of governance that they themselves are proposing seems to lack any inherently democratic or transparent features. This is not surprising given their wider global pattern of such investments and their political and economic allies. As Saskia Sassen observes with regard to smart city governance, there is a tendency to "make these technologies invisible, and hence put them in command rather than in dialogue with users" (Sassen 2012). Foreign investors have so far failed to articulate how they envision organizing and managing relations of knowledge co-production and urban governance in ways that would ameliorate existing institutional inequalities in Myanmar. This raises an important question: What is the relationship between Myanmar's democratic transition and its "smart" transition?

We contend that this path to development will not facilitate, but rather present new threats that undermine Myanmar's democratic transition by exacerbating existing sources of inequality and introducing new ones. Specifically, the smart transition undermines national reconciliation by exploiting the urban hinterlands and externalizing the human and social costs of supplying electricity to smart

city development; shuns central elements of university education reform by promoting standardized, prefabricated, decontextualized learning at the expense of critical thinking; and thwarts democratic civic participation by corporatizing the ownership and control of critical public assets and services and privatizing essential functions of urban governance without providing publicly accessible mechanisms of meaningful accountability.

MYANMAR "SMART" FOREIGN INVESTMENT

Appreciation for the extent of the "smart" transition occurring in Myanmar begins with understanding recent changes in patterns of foreign direct investment (FDI), both "approved"[4] and "actual,"[5] flowing into its economy. FDI refers to investment from a resident entity in one country with the objective of obtaining a *lasting interest* in an enterprise resident in another (excluding the purchase of securities through portfolio investment). It involves establishing operations or acquiring tangible assets, including stakes in other businesses. FDI typically refers to the purchase or establishment of income-generating assets in a foreign country by companies rather than governments, and in ways that entail the *control* of the operation or organization. Standard, internationally accepted definitions of FDI (used, for example, by the International Monetary Fund, World Bank, and Organization for Economic and Cooperative Development) typically measure "lasting interest" as a long-term commitment between the direct investor and the enterprise, and "control" as ownership of at least 10 percent of the enterprise's voting power, representing the influence by the investor (although a smaller block of shares can provide control in widely held companies, and sometimes control of technology, management, or critical inputs can confer *de facto* control).

Economists often rely on FDI as a key indicator of international economic integration because they assume that it creates direct, stable, and long-lasting links between economies. FDI is not just a transfer of ownership—it usually involves the transfer of factors complementary to capital, including management, technology, and

organizational skills. FDI can encourage the transfer of technology and know-how between countries, and allow the host economy to promote its products more widely in international markets. It is also an additional source of funding for investment and can be an important vehicle for a country's economic development. However, as Jared Bissinger cautions, "FDI is not inherently or uniformly beneficial for a host country. Instead, the positives may vary depending on the source and sector of investments, the forward or backward linkages they create with other parts of the economy, the number and types of jobs created, and the host country's economic policies" (Bissinger 2012, 24). Referring to the decade prior to fiscal year (FY) 2011–12 (which, in Myanmar, runs from April to the end of March), he observes, "Most of the FDI that has come to Myanmar in the last decade has created little direct employment and few linkages with existing industries, limiting [its] positive benefits" (Bissinger 2012, 24).

Nevertheless, FDI remains an important part of Myanmar's economic development and, since 2012, has increased rapidly and considerably. In just the first nine months of FY 2014–2015 (April through December 2014), the Myanmar Investment Commission had approved FDI expenditures of $6.2 billion from 25 countries (Mon 2015). This figure exceeds by half the entire previous year's FDI of $4.11 billion, and more than quadruples the $1.42 billion in FDI to Myanmar during FY 2012–13.[6]

This three-year trend, however, is too short to tell us what is most interesting about the recent shift in FDI to Myanmar. If we examine comparable FDI figures for just the three previous fiscal years, we see that that Myanmar approved $4.64 billion in FY 2011–12, a staggering $20 billion in FY 2010–11, and only $0.90 billion in FY 2009–10. These additional figures, when complemented with Bissinger's (2012) FDI data for Myanmar from 1988–2011, provide evidence to suggest that there may be good reason to see 2012 as the year marking the beginning of a new trend in foreign investment.

In 1988, Myanmar passed the Foreign Investment Law in the wake of its violent repression of statewide protests calling for

democracy and signaled, after 25 years of isolationist economic poli-
cies, its renewed opening to FDI. From then until July 2011, the coun-
try approved just over $36 billion in investment from 455 projects
(Bissinger 2012, 27). This includes the unusually large sum of $20 bil-
lion in FDI from FY 2010–11 (noted earlier), which came from only 25
projects (Bissinger 2012, 28). During the two decades prior to its 2010
windfall, Myanmar therefore attracted approved FDI averaging only
$1.8 billion annually. Of the $16 billion in approved investments re-
ceived before FY 2010–11, about half has actually entered the country
(almost exclusively from Asian countries), and most of the remainder
($6 billion) is tied to the politically contentious Tasang Hydroelectric
Dam Project in Shan state in eastern Myanmar, which is still in the
planning phase (Bissinger 2012, 28, 34-35; Paing Soe 2014). From FY
2011–12 through January 2014, Myanmar has attracted approved FDI
averaging four times greater—$4.1 billion per year. The question is
what to make of the $20 billion Myanmar attracted in FY 2010–11.

　　The answer becomes clearer when we examine FDI in terms of
country of origin and the sectors of Myanmar's economy into which
it is flowing. Bessinger's data reveals that China alone, the largest in-
vestor in Myanmar since FY 2006–7, accounted for $8.25 billion of the
$20 billion in FDI that the MIC approved in FY 2010–2011, and that
all of it was for projects in the power and extractive sectors. The re-
maining FDI from that year also was overwhelmingly concentrated in
the oil and gas and mining sectors (Bessinger 2012, 23–24). Writing in
2012, Bessinger explains the significance of this sudden spike in FDI:

> The rash of approved investments in FY 2010–11 solidi-
> fied the dominance of the power and extractive sectors
> as the top sectors for FDI in Myanmar, when measured by
> size. Since 1988, the power sector has attracted the most
> approved investments, for five projects together worth
> over US$14.53 billion. The oil & gas sector has attracted
> nearly as much total investment, though for a significant-
> ly higher number of projects, 104.… The size of the new

investments in the extractive (mining and oil and gas) and power sectors has concealed an important trend: the decade long dearth of FDI in other sectors of the economy. Since the start of FY2000–01, the extractive and power sectors accounted for 98.1 per cent of the total value of investment approvals (Bessinger 2012, 29–30).

As late as 2011–2012, for even careful observers like Bessinger, the story of foreign investment in Myanmar was about Asian, especially Chinese, investment in the power and extractive sectors—and these were largely understood to be "enclave investments" (Walsh and Yu 2010, 13) that have little connection to the broader economy.

The current increase in Myanmar's FDI, however, reflects a fundamentally different trend, both in terms of who is investing and the economic sectors in which they are investing. The new FDI flows from sources far beyond the usual Asian regional investment of the previous two decades. This includes FDI not only from investors in the Western states (the European Union, the United Kingdom, and the United States) that in 2012 lifted the bulk of the "smart sanctions" they had enacted in an effort to check the Myanmar government's abusive human rights practices, but also from investors in Qatar, which previously had expressed little interest in the politics or economy of Myanmar.

More significantly, this recent influx of FDI is now shifting from the long-dominant recipient sectors (oil and gas and the extractive mining industries) to new sectors of the economy, and primarily to the information and communication technology (ICT) sector, including telecommunications as well as both fixed and mobile Internet. Director General of MIC Aung Naing Oo reported in September 2014, while publicly revising the year's expected FDI to "more than US$5 billion," that 31 percent of the investment received by the end of August was in the telecoms sector, and 23.8 percent in oil and gas (Reuters 2014). The power sector remains a major investment target, but with a particular focus on generating a larger and more stable

supply of electricity to meet surging demand that is being fueled by the growth of the ICT sector.

The investors in these sectors are not looking for enclave investments. They are hedging their bets that Myanmar is becoming a frontier of the transnational, digital knowledge-based economy. McKinsey Global Institute predicted in its June 2014 report, "Myanmar's Moment: Unique Opportunities, Major Challenges," that the country may attract as much as $100 billion in FDI over the next two decades, and quadruple its gross domestic product to $200 billion with an 8 percent annual growth rate (doubling its pace from 1990–2010), if it spends enough to achieve its growth potential (Chhor et al. 2013, 121). Despite its business potential, Myanmar still trails neighboring markets in terms of foreign investment for FY2014–2015. Thailand received $6.8 billion in the period from January to June, according to the central bank, while Vietnam recorded $7.9 billion of investment for the first eight months of 2014 (Reuters 2014).

But as Myanmar increasingly establishes its identity as a potentially high-growth frontier economy, investment groups like Silk Road Management are looking for first-mover advantage, particularly in so-called knowledge-driven industries such as the Internet, information technology, education, and health care. Based on Silk Road's estimates, "The Internet market [in Myanmar] is expected to post annual growth rates of more than 60 percent" through 2016 (Wille 2012). In 2012, the firm raised $25 million from investors in Mongolia, Russia, and oil-rich countries in the Caspian region through its Myanmar Human Capital Fund (Wille 2012). The companies in which Silk Road plans to invest may go public soon after the Myanmar Stock Exchange, scheduled to launch in late 2015, becomes fully functional (Wille 2012). It has also established Mandalay Capital, a subsidiary investment banking advisory firm, and the first-ever investment bank in Myanmar. Mandalay Capital advises Myanmar companies on raising capital in Asia and internationally, and also offers investors access to investment opportunities in Myanmar.

These investors fully understand the risks associated with investing in a country that is struggling to transition from a five-decades-long military-ruled autocracy to a democratic civilian government. Myanmar has long topped the list of the world's most inhospitable places to conduct business,[7] and although it has been slowly improving its rankings,[8] it is unreasonable to expect the business culture to change at the speed of recent investment. But Mandalay Capital's founder, Alisher Ali, explained his optimistic strategy to the Associated Press in October 2012, when oil and gas and mining accounted for nearly 99 percent of foreign investment into Myanmar's $50 billion economy. "Mandalay Capital is staying away from extractive industries, in favor of fast-growing sectors more likely to be free of cronyism, corruption and political baggage, like information technology, telecom services, media, education, health care, real estate and financial services" (Kinetz 2012). To avoid the political culture of Myanmar's dominant business community, Ali explains he is "targeting a rising generation of local entrepreneurs, rather than cultivating relationships with established crony businessmen" (Kinetz 2012). Yet, the extent to which local entrepreneurs can overcome the challenges reflected in Myanmar's 2015 World Bank ranking as *the* hardest place to start a business[9] is difficult to predict.

Still, one changing trend does seem clear. The government of Myanmar, one of only a handful of governments to ever have shut down completely their country's international Internet links (Wang 2009)—when (in 2007) only 1 percent of the population had online access—is now fully engaging foreign investment in ICT and the development of Internet access for the entire population.

DISRUPTIVE TECHNOLOGIES, STABLE POLITICS: FROM SMART SANCTIONS TO SMART CITIES

If you visit Myanmar today, you likely will fly into Yangon. It remains the country's main gateway for an increasing number of tourists.[10] Yangon is Myanmar's largest city and has been the commercial and financial capital since colonial times. It also served as Myanmar's

political capital until 2005, when the military suddenly moved its headquarters and the administrative government to the planned city of Naypyidaw, now the third-largest city in Myanmar, and one of the ten fastest growing cities in the world (Logan 2013). But Yangon is the livelier city, and on the brink of tremendous population growth as well. By 2040, when its population is expected to reach 10 million, it will also be one of Asia's newest megacities, according to Toe Aung, head of the Yangon City Development Committee's Department of City Planning and Land Administration, which is collaborating with other organizations, like the Japan International Cooperation Agency (JICA), to plan for Yangon's development (Tha 2013).

This expected growth threatens to strain a city already struggling to address decrepit infrastructure and limited services. According to a 2012 study conducted by researchers at Harvard University's Ash Center for Democratic Governance and Innovation, only 42 percent of Yangon's citizens have access to running water, less than 10 percent has sewage infrastructure, and at least 40 percent of city residents survive day-to-day in informal dwellings. Their study identifies numerous "problems that need solving," such as frequent power cuts, gridlocked traffic and a shortage of housing and office space. Other concerns include inadequate transportation infrastructure, sanitary waste disposal sites, and electrical grids (Gómez-Ibáñez, Bok, and Thành 2012). Only recently has the Yangon City Development Committee begun to develop a plan and process for addressing the conservation of historically significant buildings and colonial architecture (Tha 2013). While no one doubts that Yangon is well on its way to becoming a megacity, and transforming in the process, the pressing question is how it will be able to manage the rapid urban growth. Myanmar's new "telecoms" claim to have an app for that, so to speak.

The main tourist attraction in Yangon (and throughout the country) is Shwedagon Pagoda, a fitting symbol of the country's deep historical cultural roots, as well as its past regional power and wealth. The 1,500-year-old, massive 99-meter high gold plated pagoda with the diamond-studded spire sits atop of a small hill in downtown Yan-

gon and is visible from much of the city. But before you see it, your view may well be obstructed by one of the hundreds of large new billboards advertising Qatar-based Ooredoo's vision of Myanmar's future.

Ooredoo is a leading international communications company delivering mobile, fixed, broadband Internet and corporate-managed services tailored to the needs of consumers and businesses across markets in the Middle East, North Africa, and Southeast Asia. It has a presence in markets such as Qatar, Kuwait, Oman, Algeria, Tunisia, Iraq, Palestine, the Maldives, and Indonesia. The company reported revenues of $9.3 billion in 2013 and had a consolidated global customer base of more than 95 million people by that year's end (Ooredoo 2015). Its corporate shares are listed on the Qatar Exchange and the Abu Dhabi Securities Exchange. It is now the largest operator in Myanmar's telecom sector.

Ooredoo is one of the only two companies (among the 91 expressing interest) to receive a commercial license for developing a telecom/internet infrastructure from the government of Myanmar's long-held former monopoly. On June 26, 2013, the government chose Ooredoo and its Norway-based competitor Telenor as the winners of the high-profile international tender (Thomas 2013). Although the license award was delayed until the new Telecommunication Law could be legislated, agreements to provide nationwide services were eventually finalized in early 2014 (Mahtani 2014).

Telecommunications were tightly controlled under decades of military dictatorship, with the government monopolizing the sector and selling SIM cards for thousands of dollars when they were introduced 15 years ago. As a result, Myanmar had the lowest mobile penetration rate in the world. But this is rapidly changing. From 2011 to 2013, the nationwide mobile penetration rate rose from 3 percent to roughly 10 percent prior to the time these commercial licenses were awarded.

Upon receiving its license, Qatar's Ooredoo pledged an investment of $15 billion (far exceeding Telenor's $2 billion) to develop Myanmar's telecommunications sector over the duration of its

15-year contract (Heijmans and Nyunt 2014). Ooredoo began delivering services in June 2014 and, according to the *Wall Street Journal*, intends its network to reach 97 percent of the population by the end of 2018 (Mahtani 2014). According to Deputy Communications and IT Minister U Thaung Tin, mobile penetration already had soared to 30 percent by the end of 2014, who added that Internet use has also grown, and SIM card prices have fallen from K1.5 million to K1500 (Phyo 2015).[11]

Ooredoo's billboards in Yangon portray a transnational social imaginary linking students, ethnic minorities, fair market development, rural and urban development, democratic values, Internet access, and the ideology of "access to knowledge for all." They project particular populist aspirations, status, and creative identities while advertising Ooredoo's products and brand name to push the consumption of information and communication technology: Internet, mobile phones, and social media.

But Ooredoo is more than an integrated telecommunications provider. At the Gulf Information Technology Exhibition (GITEX) 2013 in Dubai, Ooredoo Qatar's assistant director of business development for mega projects, Cyril Anand discussed his company's new line of business: smart cities. Anand explained that Ooredoo Qatar's role in smart city development is to become a "facilitator of partnerships in the digital economy" by "building the ecosystem and harmonizing the players." [12] Telenor, Ooredoo's main competitor in Myanmar, shares this view:

> We have a significant impact on the societies where we operate. Providing people with affordable smartphones and Internet connectivity is an important catalyst for growth and development. We also have an opportunity to play a role in the digitalization of societies, within areas such as education, health and financial inclusion. In addition, we aim to further improve the way we work with our business

environment, with a focus on local regulatory frameworks, societal expectations and stakeholder perceptions.[13]

In other words, they are "smart city" development brokers whose goal is to facilitate the integration of the network of smart cities that both feed and are fed by the global digital economy.

In January 2015, Ooredo became the lead partner in the Smart Cities Council, a leading industry coalition formed to accelerate the transition to smart, sustainable cities (Tech Team 2015). Ooredoo joins global leaders in the smart cities sector—some of the world's largest software services and hardware companies—who sit on the council, including IBM, Microsoft, Cisco, Bechtel, GE, Qualcomm, and Mastercard. As lead partner, Ooredoo will have the opportunity to aid the direction of the smart cities in Qatar, the region, and across the world by contributing to the council's body of knowledge, including city tools and resources, mentoring, and workshops. More than 10 major cities within Ooredoo's footprint are classified as "megacities." And Yangon is now within their sights.

To appreciate the power, reach, and scope of the transnational smart city development sector, as well as Ooredoo's niche within it, we can compare SmartCity, the company. SmartCity is a leading developer of knowledge-based business townships (think gated community office parks for the world's most powerful ICT-related companies, including Google, HTC, Cisco, Siemens, and dozens more). Through the expertise cumulated from the development of 12 business townships in 5 industry clusters in the Middle East, SmartCity is the foremost "purveyor of knowledge clusters."[14] Working closely with local governments, it translates its expertise and develops international business clusters that fuel economic growth. The SmartCity vision is "to create a global network of self-sustained business townships to foster the knowledge economy."[15]

SmartCity Malta and SmartCity Kochi form what the company refers to as the first SmartCity outposts in EU and India. Both are free zone developments supported by cutting-edge infrastructure

and the latest in smart technologies. SmartCity claims that these out-posts "will model all subsequent SmartCity developments around the world, perpetually growing the global network of free zone business townships."[16]

SmartCity Kochi and SmartCity Malta are already well under development, although SmartCity Malta (as of June 2014), still felt like a high-tech "ghost town," with most of its office space still unoc-cupied. These private "cities" are for the employees of the business of-fice occupants and include residential housing for their families. They also have a limited number of bars, cafes, convenience groceries, and shops that are open to the public, and regularly host public concerts on the manicured seaside grounds to generate revenue. In Malta, the reclaimed industrial property, which now looks like a luxury office park, is literally walled off from the nearest middle-class residential neighborhood and blocks its once gorgeous view of the Mediterra-nean Sea. Along with the government of Malta's investment, it is 91-percent owned by Dubai Holdings.

Established in 2004, Dubai Holding is a global investment hold-ing company with interests in 24 countries. It is managed through two business groups, and Dubai Holding Investment Group oversees Dubai Holding's financial assets. Dubai Holding Commercial Opera-tions Group has four operating units that develop and manage assets in real estate, hospitality, telecommunications sectors, and special-ized business parks.

TECOM Investments, established in 2005, handles the spe-cialized business parks like SmartCity Malta. Its first business park, launched in 2000, was Dubai Internet City, the iconic forerunner of Dubai's vision for a knowledge-based economy. It now manages over 4,500 companies—many of them Fortune 500 companies. TECOM Business Parks comprises ten business parks under five industry clus-ters across the information and communication technology (ICT), me-dia, education, sciences, as well as manufacturing and logistics sec-tors. Building on its domestic success in Dubai, TECOM Investments has conceptualized SmartCity to develop an archipelago of knowledge

industry townships globally. SmartCity Malta and SmartCity Kochi are just the first two international developments.

Gated business parks and megacities begin to look more similar than we might otherwise imagine when envisioned within the "smart" imagination of companies like Dubai's TECOM or Qatar's Ooredoo. The revenues that Ooredoo Myanmar will derive from selling their Internet and mobile phone services are not the big picture. Ooredoo's ubiquitous billboard advertising in Yangon is selling more than ICT to the next megacity-generation of consumers. It is selling its vision of smart urban governance to the citizens of Yangon, as well as Ooredoo's role in that governance. Their $15 billion investment and 15-year contract in Myanmar provide them an opportunity to participate, as a major institutional broker, in the potentially more valuable global market sector of smart city development. Smart cities may facilitate innovation, but they themselves also represent an emerging social innovation with high growth potential from which investors like Ooredoo are keen to profit. Ooredoo the "commercial telecom" may be understood as a delivery device (or "Trojan horse") for Ooredoo the "smart services provider."

Ooredoo is already cultivating smart services within some of the other smart cities in which it operates, and then providing those revenue generating services to other organizations, companies, and subsidiaries with which it has facilitated or directly developed collaborative partnerships across the network of smart cities in its portfolio. For example, it has launched the world's first subscription-based mobile learning, the "Mobile Academy," which offers over 50 courses ranging from language training to business skills, enabling Qatar's public sector employees to access and complete at their own pace educational coursework material at any time or from any location on any mobile device (Ooredoo 2014). It has also introduced machine to machine (M2M) services to Qatar, "enabling companies to connect business assets directly with each other or with a central command center, removing the need for human involvement" (Ooredoo 2015). This sort of automated machine learning and coordination is the

very essence of "smart" as deployed among these investors and other stakeholders.

At the annual meeting of the ITU Telecoms World 2014 in Doha,[17] Oredoo partnered with Ericsson, a global leading provider of telecommunications equipment and services to fixed networks, to demonstrate what the future of smart cities in the "Networked Society" could look like. "The Networked Society," Ericsson explains on its blog of the same name, is a visionary place "where every person and every industry is empowered to reach their full potential. The Networked Society will introduce opportunities for freedom, empowerment, and transformation of both industries and society, while helping to find solutions to some of the greatest challenges facing our planet." Combining Ooredoo's M2M services (one of the fastest growing areas in the ICT industry) with Ericsson's recent innovations (the Connected Vehicle Cloud, Connected Paper, and Smart Metering), they highlighted how the automotive, utilities, and energy and transportation industries are driving M2M innovation in ways that are contributing to smarter development (Al Bawaba 2014).

In Myanmar, Ericsson is a network supplier and management services provider for Telenor (Ericsson 2014), which is partnering with Yoma Bank to "bank the (currently 94 percent of Myanmar's) unbanked" through mobile banking services—and is already setting up this service across all of its Asian operations (Riaz 2014). In 2012, Ericsson commissioned a study to assess the potential economic impact of mobile communications in Myanmar. The study estimates that the mobile communications industry will employ approximately 66,000 full-time employees in Myanmar, with an additional 24,000 full time jobs estimated to be created in the wider economy as a result of interactions with mobile network operators. Ericsson, like Ooredoo and Telenor, has made clear on its blog, "The Networked Society," that it envisions transforming Yangon into a smart city. It is worth quoting at length the January 2014 post of Sami Dob, global director of Ericsson's Technology for Good Program:

Yangon is one of Asia's real test beds for smart city projects. It's a fantastic opportunity for city planners, urbanism experts and ICT professionals to take part in this endeavor and deploy urban sustainable solutions in order to make Yangon a smart megacity. ICT can play a major role in contributing with innovative, sustainable solutions that will help solve many of the current problems as well as the ones that are expected to pop-up, due to the dramatic changes going on in the city…. Big data analytics, cloud-based services, and M2M-enabled services that intelligently provide real-time inputs will adequately provide smart ICT services. New business models between utility and technology providers can be developed to offer these integrated services. Yangon is a particularly promising market for ICT service providers. These providers will be asked to create and develop the Yangon city services ecosystem. M-health services that will enable greater access to healthcare, and m-education that will benefit communities. Smart grid solutions too will enable smart power management, while real-time fleet and transportation information systems will prevent future congestion in the city and the port areas. And this is just the beginning (Dob 2014).

These examples suggest what it means to companies that span the ICT and smart city sectors to be a facilitator of the global integration of the digital, knowledge-based (or "smart") economy.

These private commercial telecom licenses are the largest, but not the only, competitive operators in this sector of development. Myanmar Post and Telegraph (MPT), a state-owned mobile operator, recently reached a joint-operations agreement with Japanese firms KDDI and Sumitomo to help build, among other things, telecommunications infrastructure (KDDI 2014). This partnership was bolstered by news in January 2015 that the Japan International Cooperation Agency (JICA) agreed to loan Myanmar ¥10.5 billion ($89 million),

with a 50-year term (including a ten-year deferment period) at an interest rate of 0.01 percent, to upgrade Myanmar's mobile telecoms. The new loan will be used to develop a main fiber line between Yangon, Naypyidaw, and Mandalay, high–speed cable installation in Yangon, gateway upgrades in Naypyidaw and Yangon, adaptation of the IPv6 Internet protocol, and separate developments for the Thilawa Special Economic Zone (Phyo 2015).

It may be premature to suggest that MPT and its partnering organizations share the global "smart city" vision promoted by Ooredoo, Telenor, and Ericsson. Yet, the government of Myanmar certainly has engaged the smart city sector, as FDI approvals and contract agreements testify. At the very least, it is developing its own national strategy for smart city development that links its three largest cities, thereby connecting its financial, commercial, and cultural capital (Yangon) to its main economic hub in upper Myanmar (Mandalay), and both to its political capital and military headquarters (Naypyitaw). Whether pursued separately or cooperatively, and given the democratic disregard displayed in the past projects and practices of both the government and these transnational urban developers, it is fair to question the contributions of their planned developments to Myanmar's democratic transition—especially for those in Myanmar who will be living outside the cyber-walls of these smart cities and the actual walls of those who staff them.

DEMOCRATIC DETOURS ON THE ROADMAP TO SMART CITIES IN MYANMAR

The largest foreign investors and operators in Myanmar's ICT sector have a broader vision of economic development that entails a "smart" transition for Myanmar's largest cities. It promises a world of knowledge production, consumption, and exchange that will enhance Myanmar's capacity to optimize its potential for generating innovative ideas, sustainably solve its most pressing problems, and address its most durable challenges. It is a technocratic vision of both social control and emancipation managed by "smart" people (or, at least,

smart *technology* designed, selectively implemented, owned, or controlled by *some* smart people). Yet, it is also a vision that its proponents claim values and depends upon democratic institutional reform.

But does Myanmar really need democracy for this kind of emancipation? And if so, precisely what kind of democratic institutional reforms does this vision suggest that Myanmar needs? More pointedly, given this sector's growing influence over Myanmar's economic and urban development, what are the implications of this smart transition for Myanmar's democratic transition?

The smart transition poses at least three substantial threats to Myanmar's democratic transition—by undermining national reconciliation, university education reform, and civic participation in urban governance.

The Smart Transition Poses a Threat to the Pursuit of Democratic National Reconciliation.

The smart transition undermines national reconciliation by exploiting the urban hinterlands and externalizing the human and social costs of supplying electricity to smart city development. The fundamental source of power electrifying the smart transition—namely, Myanmar's rural areas (many in ethnic minority states)—exacerbates existing problems in Myanmar. Some of these problems directly bear on the country's existing relations of inequality.

Foreign investors and operators in Myanmar's ITC sector think of Yangon as an emerging megacity within the niche market of the global smart city development sector. In addition to Yangon, Ooredoo alone has 10 megacities in its client portfolio. From this perspective, megacities may seem to have more in common with each other than each has with its respective hinterlands and region. This view decontextualizes megacities as a problem in need of a solution—the solution being smart technology management systems, perhaps even ones that connect them to a common transnational network of smart services largely operated and controlled by private corporations. It risks overlooking the ongoing (and uneven) relationships that the megacity

has to its hinterlands and region. And often it neglects to consider the impact that the proposed solutions have on that periphery.

Although the Internet and telecommunications technology serve as the circulatory system delivering the lifeblood of knowledge-capital to this imagined smart city, electricity energizes it. Yet, less than 30 percent of Myanmar's population is connected to the national power grid. The urban areas of the country consume over 80 percent of the total supply. Roughly 70 percent of Myanmar's electricity is hydroelectric (compared to 25 percent from gas), and most of this electricity is generated from hydroelectric dam projects in rural areas. Yangon, which is the largest user of electricity in Myanmar, only has an electrification access rate of 67 percent, compared to an access rate of less than 20 percent in rural areas. Yangon still experiences frequent shortages and blackouts, and there is ongoing concern that insufficient electricity will hamper the growing need and demand to keep the Internet running.

Despite (and, in part, because of) the recent heavy infrastructural investments by JICA, Ooredoo, Telenor, and other foreign investors and ICT industry leaders, Myanmar has an unstable supply of electricity. This conclusion is not new. Indeed, the government has been working with foreign investors and regional partners of the Association of Southeast Asian nations (ASEAN) to address Myanmar's undersupply of electricity for years, and even has announced its intentions of unveiling "Myanmar's current and future power roadmap" in March 2015, at the Third Myanmar Power Summit (Myanmar Business Network 2015). So far, however, these efforts have not significantly changed the existing distribution of either electric or political power between the cities and their rural periphery.

There has been a long and prominent pattern of locally contested hydroelectric dam projects in Myanmar that has resulted in violent conflict tied to issues concerning land rights, equitable water management, illegal timbering to China and Thailand, forced relocation, and riparian "land confiscation," or a practice of eminent

domain that results in bad land deals for peasants, fishers, and farmers. According to Alec Scott, lead researcher for Burma Campaign UK,

> 37 of the 53 large dams are being planned and built in areas of the country where state power is widely associated with military occupation and human rights abuses, as protracted armed conflicts between the [Myanmar] Army and Ethnic Armed Groups continue to flare in the absence of political peace settlements (Scott 2015).

In January 2015, the Burma Rivers Network, an alliance of several local environmental activists groups, reported that community representatives from Shan, Karenni, Karen, and Mon states submitted a petition to the Myanmar Ministry of Electric Power and to the Chinese and Thai embassies in Yangon. The petition urged "an immediate halt to dam projects on the Salween River, which are fuelling war and violating the rights of local peoples." It was reportedly signed by over 61,000 people and 131 organizations, including political parties, and opposes the planned Salween dams, which include the Kunlong, Naungpha, and Tasang/Maitong dams in Shan state, the Ywathit dam in Karenni state, and Hatgyi dam in Karen state (Burma Rivers Network 2015).

Concerned about the rural-urban divide and accompanying conflict that such dam projects have generated, the government of Myanmar has recently considered a transantional alternative: buying electricity from Laos (Boot 2014). From a national perspective, this strategy might aid Myanmar's electricity issues and minimize rural conflict relating to Myanmar's hydro dam development, but at the expense of Laotian rural and fishing villages. Then again, coming from the planned and locally controversial construction of 120 new Laotian hydro dams, the potential impact of this alternative source of electricity on the region's environment, not least fishing stocks on the Mekong River that feed thousands of people in Burma and throughout

the region (Boot 2014), could introduce new sources of rural conflict for Myanmar, its neighbors, and potentially for smart cities as well.

The "electricity question"—where and how to "plug-in" these new smart cities—relates to all of these contentious relations and practices and exacerbates one of the primary objectives of Myanmar's democratic reform process. It is an objective that has remained elusive since the country's independence: national reconciliation between ethnic majority Burmese residing largely in the central regions of Myanmar, and the multitude of ethnic minority peoples residing in states primarily along the border regions. Cease-fire agreements with ethnic minority militias are a central issue for the upcoming general elections in November 2015. If the government does not reach a compromise with these groups, the chances of orchestrating a successful election in November decline precipitously.

An unsuccessful election, especially one that is derailed by protest, will severely test even the most risk-taking of foreign investors. The evaporation of FDI—even for a short period—could short-circuit the plans of smart city providers. Thus, in the short term, smart city advocates are likely to support national reconciliation as a key issue of democratic reform. In the long term, however, it threatens to exacerbate the rural/urban division that reinforces inequality and strife among Myanmar's ethnic groups, and thereby undermine Myanmar's longer term democratic transition.

The Smart Transition Poses a Threat to the Pursuit of Democratic Educational Reform.

The smart transition in Myanmar shuns central elements of university education reform by promoting standardized, prefabricated, decontextualized learning at the expense of critical thinking. The corporate purveyors of smart development want human capital development of the noncritical thinking kind, and the curriculum-in-a-box and "mobile learning" that smart cities offer reinforce this limited, instrumental vision of "education as a tool." The smart cities' developers obviously want a workforce and citizenry that are smart enough

to use its technology and to produce knowledge that can be commodified. But they do not want a workforce or citizenry of critical thinkers. They want a "disruptive technology" workforce, but not a disruptive workforce. They want "smart citizens," but not critically engaged citizens who question or demand greater civic participation in the design, operation, and management of the smart city. This limited vision of smart education plays well into the government's approach to the institutional reform of education in Myanmar.

Information and knowledge exchange are of course the lifeblood of this smart system's technology. In this sense, education is a key institutional component of the smart city's transformative vision. However circumscribed, the smart city ideology does promote a "freedom to think." For most of the people living in Yangon, this kind of liberty is difficult even to imagine because of the government's censoring of critical thinking over the past three decades.

Most young local people in Myanmar do not have a college education because the government, until a few years ago, had mostly shut down the universities after 1988, proclaiming them hotbeds of (pro-democracy) activism—an activity that has put many of Myanmar's people—young, old, male, female—even highly revered monks—in prison, with long sentences. These closures (not to mention prison sentences) resulted in several "lost" generations of university-educated, local workers in Myanmar.

ICT-driven economic development, even in the form of smart cities, may enable Myanmar to leapfrog many of the technological obstacles that hobble so called "more developed" countries today. But it cannot so easily avoid the challenge that foreign investors call Myanmar's "human capital shortage." Human capital is an undersocialized and economically reductionistic concept if ever there was one. But it signals in this context a lack of education, skills, and know-how for working in a "smart" economy.

The undereducated workforce is one of the top concerns of foreign investors and entrepreneurs who want to start new companies in Myanmar, but who by law must ensure that at least 25 percent of

their employees are locals during the first two years of operation (and 50 percent by the third year). This law is meant to prevent foreign companies from simply bringing in their own foreign replacement labor, and ensuring that foreign investment will help to spur much-needed local job growth.

The government understands that foreign investment in ICT will require educating the workforce, and therefore has reopened the universities and initiated educational reforms. But, what kind of education does a smart economy require? And what kind of educational reforms will this government that is still constitutionally dominated by the military permit? Fearful of any return to a day when campuses might again serve as "hotbeds of activism," the government has been reluctant to give universities autonomy. During the past two years, this issue has been the crux of the public conflict over educational reform between the government and universities throughout Myanmar.

Students who are attending university also have been protesting for educational reform, voicing a number of concerns: (1) that the universities lack autonomy from the centralized Ministry of Education; (2) that courses are not taught in ethnic minority languages, marginalizing the cultures of Myanmar's ethnic minority students and future workers, as well as their communities; (3) that students have no rights to form student unions to advocate collectively in their own interests within the university; (4) that the curriculum is not only dated, but also controlled and infused with more ideology than standard disciplinary knowledge; (5) that Myanmar's universities offer little practical training—for example, computer science students point out that they never even work on computers during the course of their university education—that their studies are only theoretical, not also applied; and (6) that the Internet is "slow" and practically inaccessible much of the time. All of these complaints resonate with, and are endorsed by the universities (not to mention Aung San Suu Kyi, the politically influential '88 Generation movement organization[18], and other pro-democracy advocates and activists).

Advocates of smart education, both the government and smart development brokers, have been less supportive of fully democratic educational reform. The smart transition's vision of education holds considerable promise for students voicing the last three complaints. Access to an updated curriculum, computers, and certainly the Internet is on the way with the blessings of the government. But the first three complaints, which also bear on how the curriculum is taught, supplemented, contextualized, and challenged, have been a much harder sell to the Ministry of Education and Naypyitaw. Smart city providers have opportunistically supported the first three complaints, but have remained studiously on the sidelines with regard to the more politically contentious issues of university autonomy, courses taught in ethnic minority languages, and the return of students' rights to form unions and associations. These complaints that they have failed to support are the ones essential to providing an education that promotes critical thinking, the development of skills for local, rural, and minority community empowerment and cross-cultural understanding, and the development of skills necessary for civic engagement and public leadership.

The smart transition, in the short term, introduces a new source of inequality expressed in the class division among knowledge workers. Undoubtedly, the approximately 1 percent who design, control, broker, and own the infrastructure and fundamental technology producing these smart cities understand the power and value of critical thinking in their own work. But it is not clear that they value too much of it in their employees and the majority of their imagined citizens. They seem to be saying, "Let the smart technology and 'apps' do the thinking for you!" This is the basic formula for boosting your creativity and productivity in the smart city. A subtle but important development is how this, paradoxically, is "human capital." This conjures for us the imagery of what sociologist C. Wright Mills criticized as "cheerful robots" (Mills 1959, 172), uncritically applying their social science training in service of the government and industry and never questioning *why* things are the way they are—why men and

women are told to act differently; why there is poverty or inequality; why we find such pleasure in the consumption of nonessential goods.

The smart city vision is a technocratic vision that instrumentally reduces education to units of "human capital" and "information transfer." It reduces critically thinking inhabitants of its smart cities to uncritical adopters of its technology and "prosumers" of its information. It does not so much empower us to think as free us from thinking—especially from thinking critically. Its city is smart *for* us, so that we do not have to be. Although smart city developers would never say this, "smart citizens" are meant to be critically unthinking citizens. This vision for education reform falls far short of what Myanmar's universities, (students, faculty, and many administrators) are publicly demanding in the months prior to November's general elections, and what they are expecting from any meaningfully democratic transition.

The Smart Transition Poses a Threat to the Pursuit of Democratic Urban Governance.

The smart transition thwarts democratic civic participation by corporatizing the ownership and control of critical public assets and services and privatizing essential functions of urban governance without providing publicly accessible mechanisms of meaningful accountability. Transnational corporations like Ooredoo, Telenor, Ericsson, and many more are becoming the indispensable governmental brokers that Myanmar's largest cities will rely on to function. As these corporations remap the city, algorithmically recoding it to conform to the needs, values, and priorities of smart governance and their corporate profitability, they do so largely out of the public eye. This undermines democratic governance of the smart city itself.

It is arguable that smart cities could not operate efficiently if individuals were really to maximize their use of smart technology, particularly machine-to-machine services, the fastest growing area in the ICT industry, which allows companies and departments of government to connect (with no human involvement) their information

assets. Imagine linking health records, employment records, criminal records, purchasing histories, tax filings, insurance claims, library borrowing records, phone records, e-mail, web searches, social networking data, passport data, education transcripts, credit reports, vehicle records, birth certificates, social security, or national identification numbers, to real-time mobile GPS data from smart phones. This is a smart city vision of extreme efficiency—one perhaps more attractive to the original founders of a city like Naypyitdaw than to current residents of Yangon or Mandalay. Smart city infrastructure (software, sensors, and networked systems) may seem more ephemeral than a hydroelectric dam, but its legacy will similarly shape the way these cities, and their residents, and their hinterlands work for the next generation.

But the efficient smart city seeks more. It seeks to link these cities to each other, and others still, in ways that truly transcend local culture and governance. Orwellian cities that become *too* smart, certainly *this* smart, look much less emancipatory. Indeed, they look much less democratic than cities Myanmar's former military government ever presided over, or ever could have presided over without smart infrastructure and services.

Truly smart democratic cities will need ongoing civic engagement—not just during the phase of their planning and implementation, but afterward in their everyday management and ownership and decision making regarding information sharing and its use. It will require real humans, not just smart humans, to be meaningfully included in the process. It will require critical thinking and confrontation and negotiation—and compromise. If they are truly smart, these cities should be able to engage directly and openly the current process of democratic reform, not just seek to influence it indirectly outside the arena of political contestation, or inside closed-door meetings in Naypyitaw. The fact that they are not doing so does not bode well for a smart democratic transition in Myanmar.

These corporations have a history of providing no meaningful public mechanisms by which to hold them accountable for the impact

of their decisions and practices. They currently advertise their commitment to corporate social responsibility, largely a euphemism for self-regulation, but they provide no smart mechanisms for corporate accountability. Myanmar's citizens are familiar with having no effective means of participating in the governance of their cities. Now they face the threat of a rapid transition from military-dominated urban governance to corporation-dominated urban governance, or perhaps some combination of both. Neither form of urban governance, by design, leaves sufficient democratic space for civil society's participation. In their efforts to leapfrog the technological obstacles to past urban development, both of these visions of smart transition in Myanmar threaten also to bypass democratic urban governance.

At this stage, it still is not clear whether the developing smart cities in Myanmar are conforming to the national digital roadmap of the military-dominated government or to the transnational digital network of the smart service providers and their global investment holding companies—nor even whether these national and transnational visions are necessarily incompatible. But it does seem clear that they are not being built to conform to the vision of democratic governance for which the vast majority of Myanmar's citizens have been collectively and publicly struggling over the past three decades.

NOTES

1. We are referring especially to Chapter IV, Articles 109 (b) and 141 (b) ceding to the military 25 percent of the parliamentary seats regardless of election outcomes, and Chapter XII, Article 436 requiring 75 percent of any vote to amend the constitution in the first place—including Article 436 itself.

2. At least 88 smart cities will exist all over the world by 2025, up from 21 in 2013, based on IHS Technology's definition of a smart city. "Smart cities encompass a broad range of different aspects, but IHS has narrowed the definition of the term to describe cities that have deployed—or are currently piloting—the integration of information, communications and technology (ICT) solutions across three

or more different functional areas of a city, including mobile and transport, energy and sustainability, physical infrastructure, governance, and safety and security." While the combined Europe-Middle East-Africa region represented the largest number of smart cities in 2013, Asia-Pacific will take over the lead in 2025. In all, Asia-Pacific will account for 32 smart cities of the total, Europe will have 31, and the Americas will contribute 25. See Arrowsmith (2014).

3. Defining megacities quantitatively is a somewhat arbitrary and contested exercise (Herring 2011). Yet, the phenomenon of megacities is real in its effects. Kraase, Gaese, and Kyi explain, "Megacities have developed into a new form of socio-economical and political urban entities, they are 'laboratories of the future,' because they reflect global development trends compactly, sometimes proleptically. Therefore, it is not development per se, but rather the dynamics, complexity and multi-actor dependency of the fundamental processes as well as their economical, social, and spatial effects, which form one of the greatest challenges of our time" (2006, 22).

4. *Approved* investment is the total number of projects and amount of foreign investment that the Myanmar Investment Commission (MIC) approves in any given year. It does not represent any foreign funds that have already entered the country.

5. *Actual* investment is the total amount of foreign funds that enter the country. These figures are compiled by Myanmar's Central Statistics Office and released indirectly through the ASEAN, UNCTAD, the World Bank, and the IMF. As Bissinger explains, "Approved and actual investments in any given year tend not to be highly correlated, as investors may need months or even years from the time of approval to complete all logistical and financial arrangements for the projects. This creates a lag time in the data for any given year. During the time between approved and actual investment, changes on the ground could lead investors to increase or decrease the size of the investment or drop it completely. Not all [MIC-approved] proposals come to fruition" (2012, 26).

6. US Department of State (2014), citing statistics obtained from the MIC's secretariat, the Directorate of investment and Company Administration (DICA), a service center in Yangon established in April 2013 to facilitate company registration for foreign investors.

7. The Heritage Foundation's 2011 Index of Economic Freedom categorized Myanmar as "repressive," ranking it 174 out of 179 economies in the world (Heritage Foundation 2011). The Institutional Investor's Country Credit rating ranked Myanmar 175 out of 178 in 2011 (World Bank 2011) and the World Bank's Worldwide Governance Indicators ranked Myanmar in the bottom percentile for control of corruption, regulatory quality, and voice and accountability, with government effectiveness in the third percentile and rule of law in the fourth. See the Worldwide Governance Indicators database. Accessed January 31. http://info.worldbank.org/governance/wgi/index.aspx#reports.

8. Myanmar has improved since 2011 on each of the indicators cited above. The Heritage Foundation's 2015 Index of Economic Freedom ranked Myanmar 161 out of 179 economies in the world (Heritage Foundation 2015). The Institutional Investor's Country Credit Rating ranked Myanmar 165 out of 178 in 2012, the last year for which it has published a ranking for Myanmar (World Bank 2012). And the World Bank's Worldwide Governance Indicators shows Myanmar gradually improving from 2011 to 2013 (the last year for which it provides data) in terms of control of corruption, regulatory quality and voice and accountability, government effectiveness and rule of law.

9. The World Bank's "Doing Business" rankings, which did not even bother to assess Myanmar in 2011, now ranks Myanmar 177 of 189 countries in terms of overall ease of doing business in its latest 2015 index—although, notably, in terms of "starting a business," it ranks at the very bottom. See http://www.doingbusiness.org/data/exploreeconomies/myanmar/ (Accessed January 31).

10. The cover of the December 2014 issue of *Travel + Leisure* proclaims Myanmar the "destination of the year." But this travel magazine is not suggesting that Myanmar has been the most visited tourist destination of 2014, although FY 2014–15 FDI (as of January 2015) in

Myanmar's tourism sector ranked third behind telecommunications and (telecom related) manufacturing (Mon 2015). The magazine's distinction is meant to highlight a process occurring in Myanmar that is far more subtle. "It's a nation on the cusp of great change, and there's never been a better time to go than right now. This is Myanmar's Moment" (155). After first listing a number of reasons you might not want to go to Myanmar yet, describing many of the significant conflicts still at the heart of Myanmar's struggle for democratic reform (and assuming they will be worked out), the article's contributor, Andrew Solomon, suggests that, if you want to experience a Myanmar worth visiting—that is, "before the place internationalizes" (156)—now is the time. See Solomon (2014).

11. The kyat (K), roughly pronounced in English as "chat," is the official currency in Myanmar, with an exchange rate of US$1=K980 and euro €1= K1177. If a newly proposed minimum wage law is enacted in Myanmar, workers should make the equivalent of $5 per day— enough to buy three SIM cards at this price.

12. This annual GITEX event was held from October 20–24, 2013, at the Dubai World Trade Center. The event is billed as "a gateway for global brands to access the Middle East, the fastest emerging and investment ready ICT market." Anand's full presentation is available at https://www.youtube.com/watch?v=mjwhP6C5dgk.

13. See Telenor Group "Strategies 2014–2016" at "Impact Societies." http://www.telenor.com/about-us/our-strategy/. Accessed January 31.

14. "SmartCity Company Overview." http://www.smartcity.ae/html.php?MenuID=212. Accessed January 31.

15. "SmartCity Vision and Values." http://www.smartcity.ae/html.php?MenuID=214. Accessed January 31.

16. "SmartCity Company Overview." http://www.smartcity.ae/html.php?MenuID=212. Accessed January 31.

17. ITU Telecom World, which takes place in a different geographical location each year, is a platform for high-level debate, knowledge-sharing, and networking among the global ICY community. ITU Telecom organizes the events, and is part of the International

Telecommunication Union (ITU), the UN agency responsible for ICT-related issues. All ITU Telecom activities, events, and staff are financed by the revenue generated from ITU Telecom World each year. All additional revenue is transferred to the ICT Development Fund (ICT-DF), which provides seed funding for ICT development projects in developing countries around the world.

18. The '88 Generation is an organization of one-time student leaders born of the 1988 pro-democracy movement that was crushed by the former military government but whom now both civilian and former military government leaders are increasingly inviting to assess policy and advise them on how to further reform Myanmar.

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