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Is the Smartphone Smart in Kathmandu?

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Is the Smartphone Smart in Kathmandu?



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Abstract

This is the extensive study of the smartphone in the developing country of Nepal, specifically the Kathmandu valley. Throughout my research I conducted various interviews with businesses, Tibetan refugees, and Nepali millennials (18yrs-33yrs) with the goal of identifying how the smartphone is used and understood. I chose the Kathmandu valley as my main area of research because the usage of smartphones in rural Nepal is extremely limited, and the valley represents the economic hub where progressive thinking flourishes. As a main objective I sought to understand how, if at all, the smartphone is used differently between Nepal and America. All millennials interviewed possessed smartphones.

Acknowledgements

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Introduction

The phantom vibrate. One phrase to sum up the impact of that little device we hold in our pockets on the modern world. It's just a tickle, one that triggers the rapid release of endorphins from our brain - I have a message! This feeling is shortly followed by a sense of disappointment, as the word phantom implies the vibrate we felt was imagined, and the message turns out to be non-existent. Today, we are simply addicted to the connectivity the smartphone provides us. But do people think about the smartphone the same way in Massachusetts as they do across the world in Nepal? In order to answer this question we must understand how the two areas are different. First off, Nepal is a developing country.

Developing country is a slightly more politically correct way to address what we commonly refer to as a third world country. Simply put, it is a country having a standard of living or level of industrial production well below that possible with financial aid; a country that is not yet highly industrialised.¹ Nepal is thrust between the two highly populated countries of India and China. A David smushed between two Goliaths. As acting host of the tallest mountain in the world, Mount Everest, Nepal is a tourist hot spot for trekkers and adventurers around the world. However when tourists visit the small Himalayan kingdom, they usually settle in the Kathmandu valley. As a majority of the population of Nepal lives in the rural areas of the country, the Kathmandu valley is the economic hub. With a population of 2.5 million people in the valley alone, Kathmandu is also growing quickly. To be exact, the city is growing at a rate of 4% annually, as 17% of the country's population resides there.²

Why the Kathmandu valley? It's simple - flat land makes it easier for people and ideas to travel. In my adventures I once encountered a man who mentioned that if you pushed all of Nepal's mountains and foothills flat to the ground, the entire surface area of the country is larger than all of North America. Throughout Nepal's history various tribes which reside astonishingly close to one another have been culturally and linguistically distinct from each other purely based on the rough mountain terrain between them. That being said, a large flat landscape, one of the few in the country, is perfect for a city to form and develop. Flat land promotes face to face communication, that is of course, until the cell phone came along and changed the world. But has it changed Nepal?

¹ *Dictionary.com*. Dictionary.com, n.d. Web. 22 Nov. 2014.

² "News." *Managing Nepal's Urban Transition*. World Bank, 1 Apr. 2013. Web. 22 Nov. 2014.

The Cell Phone and Nepal

Cell History

Alexander Graham Bell did not invent the cell phone. It is actually disputed if he was the sole inventor of the telephone, as many other claim credit over the revolutionary device. What we do know is the cell phone was invented in the late 19th century and it would soon become more popular than the radio for communication.³ The race to create a truly portable device began after the second world war. Speaking in generational terms, this was the “0 Generation” or “0G.” Fast forward to 1973 as Motorola introduced the first mobile phone that you could actually hold in your hand and carry. This trend quickly caught on in the United states as the cell phone gained popularity. In 2001, the first ever third generation (3G) cell phone was launched in Japan by NTT DoCoMo on the WCDMA standard.⁴ Coupled with the rising popularity of the internet, the global population was eager for connection. The cellular industries responded. Eight years later in 2009, two years after the launch of the first iPhone, the fourth generation (4G) of cell phones was introduced. 4G was launched with two commercially available technologies in the form of the LTE standard (first offered in Scandinavia by TeliaSonera), and the WiMAX standard (offered only in the US by Sprint).⁵ Today, we still remain in the 4G era of cell phones, and they have transformed into portable computers with the introduction of the smartphone.

Smartphone on the Rise

Worldwide Smartphone Sales to End Users by Vendor in 2013 (Thousands of Units)

Company	2013 Units	2013 Market Share (%)	2012 Units	2012 Market Share (%)
Samsung	299,794.9	31.0	205,767.1	30.3
Apple	150,785.9	15.6	130,133.2	19.1
Huawei	46,609.4	4.8	27,168.7	4.0
LG Electronics	46,431.8	4.8	25,814.1	3.8
Lenovo	43,904.5	4.5	21,698.5	3.2
Others	380,249.3	39.3	269,526.6	39.6
Total	967,775.8	100.0	680,108.2	100.0

Source: Gartner (February 2014)

Figure 1.1

³ Lama, Dawa Tsering. "Mobile Market in Nepal in Association with International Marketing Service Samsung." *Academia.edu*. N.p., n.d. Web. 22 Nov. 2014.

⁴ Lama, Dawa Tsering

⁵ Dawa, Tsering Lama

It has been seven years since the introduction of the iPhone. Although the iPhone wasn't the first ever smartphone, it was the first with a multi-touch interface and it changed the entire industry. It paved the way for companies like Samsung, LG, and others to further develop their products. In 2013, Gartner illustrated just how popular the smartphone has become in Figure 1.1.⁶

Smartphones accounted for 57.6% of total global sales in the fourth quarter of 2013. Roughly 968 million units were sold in 2013, which was a large increase of 42.3% from the previous year. In 2014 as the year closes out, it is expected smartphone sales are to reach 1 billion for the first time ever.⁷ Figure 1.2 reflects the first time in history smartphone sales exceeded feature phone sales (a feature phone is simply a phone that lacks the advanced functionality of the smartphone).⁸

Worldwide Mobile Phone Sales to End Users by Vendor in 2013 (Thousands of Units)

Company	2013 Units	2013 Market Share (%)	2012 Units	2012 Market Share (%)
Samsung	444,444.2	24.6	384,631.2	22.0
Nokia	250,793.1	13.9	333,938.0	19.1
Apple	150,785.9	8.3	130,133.2	7.5
LG Electronics	69,024.5	3.8	58,015.9	3.3
ZTE	59,898.8	3.3	67,344.4	3.9
Huawei	53,295.1	2.9	47,288.3	2.7
TCL Communication	49,531.3	2.7	37,176.6	2.1
Lenovo	45,284.7	2.5	28,151.4	1.6
Sony Mobile Communications	37,595.7	2.1	31,394.2	1.8
Yulong	32,601.4	1.8	18,557.5	1.1
Others	613,710.0	34.0	609,544.9	34.9
Total	1,806,964.7	100.0	1,746,175.6	100.0

Source: Gartner (February 2014)

Figure 1.2

Mobile Phone Expanding

Even in a developing country, the expansion of the mobile phone was persistent, as 81.72% of the people in Nepal were reported to have used cell phones in 2013.⁹ It is clear that the vast majority of smartphones exist in the Kathmandu Valley, and feature phones are more present in the

⁶"Gartner Says Annual Smartphone Sales Surpassed Sales of Feature Phones for the First Time in 2013." *Gartner Says Annual Smartphone Sales Surpassed Sales of Feature Phones for the First Time in 2013*. Gartner, 13 Feb. 2014. Web. 21 Nov. 2014.

⁷ Gartner, Smartphone Sales

⁸ Gartner, Smartphone Sales

⁹ Dawa, Tsering Lama

rural areas. In one encounter on the northern border of Nepal in the Rasuwa District, an elderly village woman named Dawa had just received her first feature phone. She was expecting a call from her husband while we were talking. The only thing she knew about the little square device was that it had a green button on the front, and when it made a certain noise, she knew how to press that button and wait for her husband's voice. She did not know how to dial or use any other feature of the phone, but that little green button allowed her to do something she had never been able to before. She could now speak with her husband without seeing his face.



Image 1.1 Feature Phone

Telecommunication Providers

The two major telecommunications players in Nepal are Ncell and Nepal Telecom (NTC). NTC is the largest traded company on the Nepal Stock Exchange, with a paid-up value of 15 billion. The government also claims 91% ownership of the company, with shares just recently being released to the public.¹⁰ Ncell on the other hand, owned by previously mentioned telecommunications giant TeliaSonera, is the slightly more popular company in the industry. Both companies currently offer services that are 3G, as 3G came to NTC in 2011, ten years after its establishment in 2001.

Total Number of GSM Subscribers in Nepal 2013

Operators	GSM Subscriber	Percentage
Nepal Telecom	7,979,403	42.33
Ncell	10,867,307	57.67
Total	18,846,710	100

(Source: Nepal Telecommunication Authority, February 2014)

Figure 1.3

Total number of GPRS/Data/Internet subscribers in Nepal in 2013

Operators	GSM Subscriber	Percentage
Nepal Telecom	3,535,909	49.66
Ncell	3,584,239	50.34
Total	7,120,148	100

(Source: Nepal Telecommunication Authority, February 2014)

Figure 1.4

¹⁰ Madhusudan Karmacharya, Deputy Managing Director of Business, Nepal Telecom

As illustrated by Figure 1.3, Ncell has more overall subscribers, as well as more subscribers using data in 2013. Although there is no year total data available yet for 2014 as we close out the fourth quarter, it is reasonable to predict the number of data subscribers in Figure 1.4 will have increased significantly with both providers.

Cell Phone Providers

There are two leading cell phone manufacturers in the world: Samsung and Apple. Venturing around the streets of Kathmandu, I noticed a significant amount of people were using Samsung smartphones and very few possessed iPhones. I come from an environment where the iPhone is everywhere you turn, and you're more likely to see a Jets fan than a Samsung smartphone. But I soon realised that the global trend of smartphone sales begs to differ. Samsung doubles Apple in world wide smartphone sales (see Figure 1.1).¹¹

I had the privilege of meeting with representatives of the two major companies in their corresponding Kathmandu headquarters. Bikash Gadia, Head of Business Operations for IMS Nepal, is responsible for all the authorised sales of Samsung phones in the Kathmandu valley. The word Samsung is absent from his official position because Samsung's marketing strategy, different from that of Apple, involves partnering with the global marketing company to help them reach out to customers in various countries.

International Marketing Services Pvt. Ltd. was founded in 1993 and has been the authorised distributor of Samsung mobile devices in Nepal since 2001.¹² Its services are available to people in



Image 1.2 Apple iPhone 5

all 14 zones of Nepal including 55 of 75 districts. By partnering up with IMS, Mac Support CEO Parashanma Shrestha claims their number one competitor Samsung occupies at least 95% of the market as it pertains to authorised mobile sales. Taken aback, I followed up this response by asking how much of the mobile market Apple occupies - he responded, "Zero percent."¹³ Sitting in his office I took a quick glance around at the surrounding Apple store and realised that although there were iPhones being repaired by staff members, phone cases, laptops, headphones, and various other apple accessories for sale, there was not one Apple iPhone on the shelves. Confused, Parashanma continued to explain Apple's marketing strategy. Instead of partnering up with a company like IMS, Apple wants complete control of the market they are investing in. The late CEO of Apple Steve Jobs and current CEO Tim Cook have authorised the sale of laptops, desktops, and other Apple devices - they have never authorised the sale of the iPhone. According

to Apple's research, Nepal's market is not large enough where they feel it is beneficial and profitable to dive into the economy and start selling iPhones. As a result, every single iPhone that exists in Nepal has been bought via the grey market. Still curious, I asked Parashanma if the company wasn't authorised to sell iPhones, how could they be authorised to fix them? He explained how they aren't authorised, but it is profitable to him and his employees to learn how to fix them because there is a demand for this line of work. He says he individually

¹¹ Gartner, Smartphone Sales

¹² Dawa, Tsering Lama

¹³ Parashanma Shrestha, Mac Support CEO

trains his staff on how to fix iPhones. When asked how he received this training from Apple he replied, “I didn’t, I looked it up on the internet.”¹⁴

This is Parashanma Shrestha’s 23rd year working for Apple in Nepal. He claims in the past there was once a deal set up between Apple and the government to start selling iPhones, but it “didn’t work out.”¹⁵ The company wishes to partner up with Ncell or NTC to provide discounted phones to increase sales before it officially introduces the iPhone to Nepal. As a result of Apple’s hesitation, Samsung has dominated the market for authorised smartphone sales. In fact, Samsung was the first company in Nepal to tie up with operators like Ncell and NTC. By doing this, with the purchase of a Samsung phone and a NTC or Ncell sim card simultaneously, the consumer gets discounted services.¹⁶

In an intriguing final statement from the Apple CEO in Nepal who isn’t allowed to sell iPhones, Parashanma Shrestha claimed with a chuckle, “When people want to go and buy a smartphone they buy a Samsung, but they would prefer an iPhone.”¹⁷

Cultural Reaction to the Smartphone - Nepal and America

Throughout my research I talked with various Nepali and American millennials to try and understand how the smartphone is understood, and interacted with. Being an American millennial myself who happens to own a smartphone, I have become somewhat of an expert on the topic as it pertains to Americans. I am privileged to have witnessed the development of the smartphone first hand in my country, and have watched peers of all ages interact with it for many years. The Nepali and Tibetan millennials interviewed in this study shared a similar set of expertise, as not only could they understand their own personal usage, but have witnessed the smartphone change the lives of those around them. As a result, one interview represents a vast web of first and second hand experience with the smartphone. That being said, it was still imperative to interview an appropriate amount of millennials ranging from 18yrs-35yrs. When necessary, I aimed to compare and contrast all information gathered from Nepali and Tibetan interviews with American interviews. Various themes were observed.

(Note: All general interpretations stem from fieldwork and observation. Does not officially represent population.)

Two phones

It is incredibly easy and inexpensive to buy a sim card. NTC claims that in order to buy one of their sim cards all you need to do is provide some sort of legal identification, and you are authorised. As many smartphones are quite expensive, the sim cards that are required to make calls, txts, and use data are not. NTC and Ncell compliment each other quite well. Ncell is claimed to have faster internet and data speeds, where NTC allows users to make cheaper calls and text messages. NTC’s signal is stronger and more reliable in some areas, and the same applies to Ncell in other areas. As a result, various interviewees use both networks. Some carry one feature phone with the reliability and inexpensive services of NTC, and one smartphone with the fast data that

¹⁴ Parashanma Shrestha

¹⁵ Parashanma Shrestha

¹⁶ Bikash Gadia, Head of Business Operations IMS Nepal

¹⁷ Parashanma Shrestha



Image 1.3 Nepal Telecom Headquarters

Ncell provides. The NTC representative Madhusudan Karmacharya carried one feature phone with NTC services (which he claimed had clearer calls), and one smartphone with NTC that he uses for data and internet purposes.¹⁸ A particular young Tibetan refugee, Sonam Dorji, had a smartphone that allowed the insertion of two sim cards. He carried one NTC sim card and one Ncell sim card in his phone. Before each time he used data, sms, or made a call, the phone would ask him which sim card he would like to charge it to. Being a Tibetan

refugee, Sonam could not provide proper identification to buy these sim cards, but he simply had his friend acquire them

for him.¹⁹ To contrast with Americans, the general theme with telecommunication giants like AT&T and Verizon is that subscribers sign a long term contract, and in return they can buy phones cheaper up front. None of the American's interviewed carried two phones.

Few Negative Impressions

Whereas each and every single American millennial interviewed had a negative impression of the smartphone, almost none in Nepal did. In general, those in the 18yrs-25yrs range were more positive about the smartphone, as the little negative impressions from Nepali millennials came from those older than 25. Pemba Sherpa, a 21-year-old Nepali student claimed, "The smartphone makes you smart."²⁰ Ryan Chohnoky, a 21-year-old American student issued his own statement, "The smartphone distracts you from real face-to-face interactions."²¹ Of the Nepali millennials who had negative impressions, surprisingly the main complaint was that looking at the smartphone for too long made your eyes hurt. This interpretation reminded me of the reaction to early television sets and computers. In the beginning, the major concern was with the screen, not the social implications that came with watching TV for too long. Smartphones are relatively new in Nepal, and because of this the general population is having a similar reaction to new technology that Americans had to the same technology - just at different times. There is a vast amount of literature on the internet about the negative social impact of smartphones and technology. This message hasn't yet hit Nepal with the force it has hit America. So, as many Americans are in denial about their smartphone addictions and continue to criticise it, Nepali's are intrigued by the new technology and feel it is benefitting Nepal.

Smartphone Acquisition

When the iPhone was introduced in America in 2007, paving the way for future multi-touch interface smartphones, it took off. Within a few years, millions of Americans would hold the phones. Meanwhile in Nepal, smartphones also came on the scene - though not officially. Suvash Thapa is 32 years old and works for Beed Management, a consulting firm in Nepal. He acquired the first ever iPhone in 2007 shortly after its release. His relative shipped it to him from a country

¹⁸ Madhusudan Karmacharya Interview

¹⁹ Soman Dorji Interview

²⁰ Pemba Sherpa Interview

²¹ Ryan Chohnoky Interview

where the iPhone was authorised to be sold.²² Because IMS has been selling Samsung phones since 2001, when their first smartphone was introduced it also hit the streets of Nepal, although without the same hype as it had elsewhere. As a general theme, when smartphones became available to the global population, they were sent around the world - authorised or not. In some countries sales took off immediately, whereas in some countries like Nepal they are still an emerging item today.

Avoid Using Data

Bikash Gadia claimed that Wifi is expanding throughout Kathmandu at the same pace as the smartphone.²³ While it is still sparingly available in the rural areas of Nepal, Kathmandu offers many cafes and guest houses with wifi access, and multiple interviewees reported having wifi in their homes. This is good news for smartphone providers like Samsung, and bad news for telecommunication providers like Ncell and NTC. Nepal is not a wealthy country, and its inhabitants have a conservative attitude about money. This attitude directly translates to the usage of data on their smartphones. Wifi is bad for Ncell and NTC for one simple reason - it's free! Throughout my stay in Nepal, I've used a feature phone with an Ncell sim card. If I want to make an international call to America, I can either pay Ncell a hefty sum, or simply connect to wifi on my smartphone and call via FaceTime voice for free. Along with FaceTime voice, there are many other emerging apps that allow free messaging and calls simply by obtaining Wifi. In general, Nepali millennials were observed to have bought sim cards that do not provide unlimited data. As a result they were seeking out wifi whenever they could in order to contact their friends, family, and co-workers. Many more American millennials seemed to be less concerned about their data usage, as long term contracts offer a significant amount of data for a low price.

Ncell Better for Smartphones

As mentioned before, Ncell leads Nepal in number of mobile phone subscribers, as well as number of GPRS data/internet subscribers in 2013. Researching smartphone usage online as well as speaking with a representative from NTC (Ncell declined to be interviewed for this study) were both effective tools in studying usage. However these tactics were further complimented by getting on the ground and interviewing the users of these phones. Their responses were surprisingly uniform when asked if they preferred Ncell or NTC. With the exception of one respondent, who used NTC strictly for internet because it was cheaper, Nepali millennials agreed that Ncell catered to the smartphone better than NTC. It had faster internet and data, it was more available across the valley, but most importantly the company offered "schemes." For example, Tenzin Choezom explained how Ncell offers a data package that is strictly for Facebook use. As many Nepali's are frequent Facebook users, this data package is cheap, and specific to their smartphone

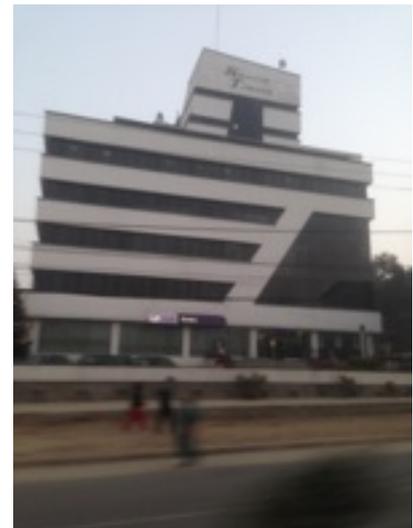


Image 1.4 Ncell Headquarters

²² Suvash Thapa Interview

²³ Bikash Gadia

needs.²⁴ As a result, Ncell is expected to be the bellwether service provider as the smartphone continues to grow.

Most Popular Apps

Each interviewee was asked to declare their most used Apps, as well as their friends most used Apps. Viber, WeChat, and Candy Crush were far and away the most popular. With this information two conclusions can be made: the smartphone is used for easy communication, and it's fun! Viber and WeChat are essentially identical Apps that let you call, txt, and FaceTime with other users of the application as long as a Wifi connection is present. Another leading App in this category is Whatsapp (recently acquired by Facebook) but it was seemingly non-existent in the valley. These Apps are free, consistent, and eliminate the cost of data usage, so it is no surprise they fit in swimmingly in Kathmandu. In one particularly interesting encounter, I was surprised to hear that the Central Tibetan Administration had been relying heavily on the usage of WeChat to communicate with representatives in Tibet. As China largely restricts the flow of online information in and out of the country, WeChat provides a safe medium for the CTA to pass information between the countries. Apparently hearing this news one particular interviewee, Kelsang Wangmo, said she switched to Viber. She believes if the Central Tibetan Administration (located outside of Tibet in Dharamsala, India) is using WeChat, then the Chinese must surely be monitoring it.²⁵ In addition to the free communication offered by smartphones with a wifi connection, the device is just plain fun. New technology is cool, and games seem to be quite popular on the smartphone. With a quick search through the Apple App store, Candy Crush Saga came in at #2 for top grossing Apps. In my observations, the male interviewees also played candy crush, but enjoyed Clash of Clans most. Clash of Clans comes in at #1 on the Apple App store top grossing Apps. Not only does it seem the Nepali millennials are playing games, but the global population is as well. In one of the few negative impressions noted during my interviews, Pasang Rinzi Sherpa claimed his friends played Clash of Clans too much, and whenever they all met up, they were glued to their smartphones playing.²⁶ Among the Americans interviewed, the most popular Apps were Facebook, Instagram, and Snapchat. Each App falls under the social media category. Although Facebook was popular among Nepali's, Snapchat and Instagram were almost irrelevant.

No Cards

Potentially the most significant discovery during fieldwork was the total absence of mobile spending. With the exception of one American interviewed, all had debit or credit cards linked to their phones and had experience purchasing items via their smartphone. Speaking from personal experience, mobile banking, shopping, and downloading is a critical part of smartphone usage in American culture. Credit and Debit cards are extremely popular, and there are vast amounts of payment methods that don't involve handling in cash. With one exception, every Nepali millennial interviewed reported never purchasing anything using their smartphone, and felt confident they didn't know anyone who had. Rajat Thapa was that exception. He worked at the Mac Support store in Thamel and had used an Apple gift card once to purchase an App.²⁷ Few had debit cards;

²⁴ Tenzin Choezom Interview

²⁵ Kelsang Wangmo Interview

²⁶ Pasang Rinzi Sherpa Interview

²⁷ Rajat Thapa Interview

none had credit cards. Fortunately for Nepalis, free Apps on various App stores are incredibly available and popular. Figure 1.5 shows the worldwide free and paid Apps from 2011, and projections up to 2017.²⁸

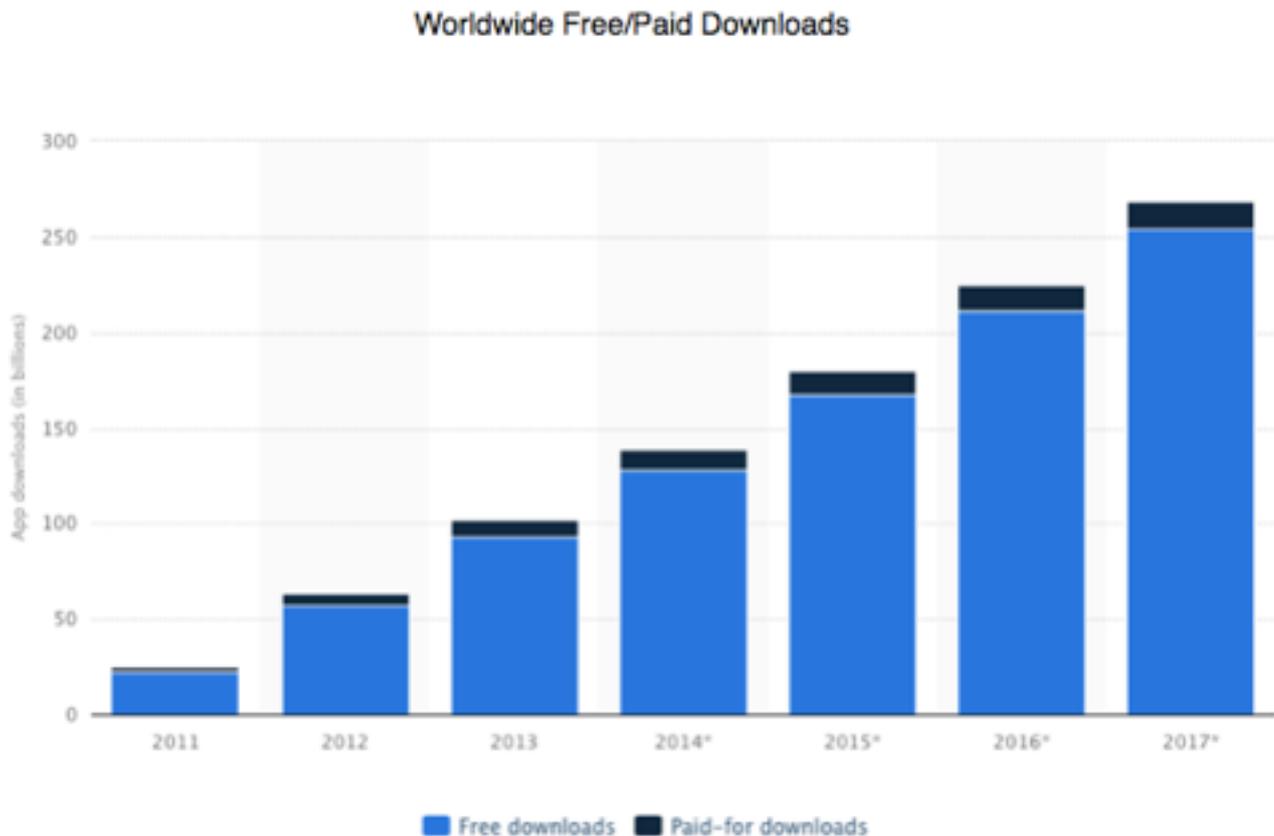


Figure 1.5

The Smartphone is Desired

As one of the few unanimous responses during research, it is clear the Nepali’s desire the smartphone. First off, it is a status symbol. Rinzin Wangmo explained, “People love iPhone, when they carry it they think they are powerful.”²⁹ The smartphone is a way to show off wealth in a developing country. Wealthy businessmen complimented their suits and ties with a smartphone in their pocket; young teenagers begged their parents for smartphones to remain cool among their friends. Ashoke Bassynd, owner of the travel agency Hidden Shangri-la, explained how his daughter begged him for a smartphone for years until he finally gave in and bought her one. He was particularly surprised by how many people went way beyond their budgets to acquire a smartphone.³⁰ People also desire the smartphone because it is the newest technology trend in Kathmandu. Over at IMS, Bikash Gadia bought the Samsung watch with a touch screen simply because he felt drawn to the small gadget - he claims to use it sparingly.³¹ Technology is ever-growing while everyone, Americans and Nepalis alike, wants to play with the new gadgets. Thirdly,

²⁸ "Mobile App Store: Worldwide Free and Paid Downloads 2011-2017 | Forecast." *Statista*. N.p., 2014. Web. 24 Nov. 2014.

²⁹ Rinzin Wangmo Interview

³⁰ Ashoke Bassynd Interview

³¹ Bikash Gadia

the internet is a click away with the smartphone. We live in an internet age, and accessing the internet with the smartphone doesn't require a computer handy - it is a mini computer in your pocket. Lastly, the smartphone is more desired now because it has become cheaper and more available. Before, the smartphone was simply on many Nepali's wish lists, but it is now much more affordable and has integrated itself into a part of the society in Kathmandu.

Load-Shedding Impacts Usage

Nepal is currently experiencing an energy crisis. Throughout the day the power will shut off for extended periods of time. This poses certain problems for the functionality of the smartphone, but because of this problem it has become clear that smartphones are a priority to keep charged when the power goes out. Although the generator business has skyrocketed in Nepal to help cope with the energy crisis, not everyone has the capability to produce electricity when the electric grid shuts down. Based on various interviewee's responses, the smartphone will never run out of battery if carefully monitored. Along with cheap, portable smartphone chargers that are widely accessible, many people simply understand the power schedule and carefully monitor their battery life so they aren't stuck with a dead smartphone. Unfortunately, many times no power means no wifi as well. According to Tsamchoe, when the power goes out so does the wifi, so those using phones in the area transfer over to data. When everyone suddenly switches to data all at once, the connection becomes extremely slow.³² Suvash Thapa claims the power outages affect the cell towers as well. When power is lost, sometimes generators that keep the towers up and running fail, and as a result all connection is lost in an area.³³

Price an Issue

Nepali millennials agree that the number one obstacle to obtaining a smartphone is price. They are extremely available throughout the Kathmandu valley, the demand is growing in today's economy, and there are minimal negative impressions of the device. Therefore, high cost is the only thing holding people back from buying smartphones. The price is continually dropping, but the most desired smartphones with the best functionality are still above a majority of consumers budgets. Figure 1.6 illustrates in more detail the prices of all mobile phones in Nepal. Samsung offers the largest number of phones over 30,000Rs, while Karbon leads the way for cheap affordable phones. It is clear that an affordable phone under 5,000Rs is easily obtainable in Nepal, however smartphones usually range from 10,000Rs-60,000Rs, which is considered an unnecessary luxury to some families.³⁴ Nepal is not the only country where smartphone price is an issue. America is such a vast country with a large income gap, so it is simply preposterous to think everyone can afford a smartphone. However with constant upgrades on older models, phones continually go out of style and are sold used and extremely cheap in America. After many years of smartphone production, obtaining a used smartphone is easy.

³² Tsamchoe Interview

³³ Suvash Thapa Interview

³⁴ Lama, Dawa Tsering

Total Number of Mobile Phone Models in Different Price Range in Nepal

(In Rs 1000)

Brand / Price list	Less than 5	5-10	10-15	15-20	20-25	25-30	30 Above
Samsung	1	2	3	2	2	0	12
Nokia	4	11	11	2	1	1	6
Micromax	0	3	4	2	1	1	3
Lava	16	5	2	1	1	0	0
SonyXperia	0	0	1	1	3	2	4
Videocon	10	3	0	0	1	0	0
Colors	12	9	3	4	1	1	1
Lenovo	0	0	1	0	1	2	2
Xolo	0	0	1	3	1	0	1
Karbon	28	8	4	6	1	0	0

Figure 1.6

Other Themes

Some lesser themes worth mentioning are as follows: Interviewees seemed to agree that smartphone usage occurred multiple times a day. In America and Kathmandu alike, those who have a smartphone seem hooked on its attractive screen. It is also worth noting is that in schools of all levels, mobile phones are banned. Children seem to constantly break these rules and keep phones in pockets, but the use of a phone in school is strictly prohibited. In the US, phone usage in class varies from teacher to teacher.

Is the Smartphone Truly as Smart in Kathmandu?

There was something missing. After picking the brains of various millennials in Kathmandu, it became evident that people are quite similar all over the world. The cultural reaction to the smartphone is almost identical in Kathmandu as it is in Boston. Much emphasis must be put on the word reaction, because in no way does this phrase imply the two cultures are congruent with one another. It simply means we all want the same things from the smartphone - we all react the same. People are hungry for a feeling of connectedness. Information from a remote village in Romania can travel to the small town of Concord, Massachusetts in a matter of seconds - reuniting long lost friends. A graduate from Stanford University can suddenly re-connect with her entire graduating class with a quick search on Facebook. In Kathmandu, Tibetan refugees can video chat on Viber with their families in Tibet after years of silence living under the information blanket that is modern China. While Kathmandu millennials have yet to express a significant amount of hesitation when handling the smartphone, some have spoken out against the dangers of its alluring

features. But the smartphone is exciting and new, and its complex engineering draws us in - all over the world.

What soon became evident was a much needed shift in perspective. The reaction to the phone and its features was clear - but why was the interaction so different between countries? The wise words of Ashoke Bassynd provided much needed clarity, “Most people using smartphone only utilise 10% of its capacity.”³⁵ The local people here were using the smartphone as a glorified feature phone. It offered a higher level of connectivity between humans. It offered exciting games with bright colours. It also offered the vast database we call the internet. However, the smartphone is capable of so much more. So what was holding it back from reaching its true potential? The answer: the economy. The smartphone doesn’t merely allow human-human interaction, but human-tool interaction.

America’s Economy and the Smartphone

You’ve just been invited to a small get-together by your new boss. Eager to impress her at her new home, you pull out the slip of paper with the address on it “546 New Britain Avenue, North End.” Having just moved to Boston, one of the most confusing cities to navigate, you haven’t the slightest clue how to reach your destination. So you open your Uber App on your smartphone, enter the address, and within minutes a black Chevy is waiting outside. The driver doesn’t know how to get their either, but after you entered the address in the App, a step by step navigation system presents itself to the driver, whose smartphone is pressed against the dashboard like a GPS system. Soon the car fills with a smooth commanding voice, “Turn left on Boyle street in three miles.” You realise the ride will take around 30 minutes, but that number is extended when the driver realises his gas light just went on. Apologising profusely he removes his phone from the dashboard and opens his Gasbuddy App which allows him to find the cheapest gas within a certain radius of his car. Soon the driver is pumping gas at three dollars a gallon, a full \$0.20/gall cheaper than anywhere else in the area. You take the opportunity to quickly run into the hardware store next door. Using the Smoop app, you scan the bar code on a hammer with your phones camera. Instantly your phone connects you to hundreds of other hammers online and compares their quality and price. This one is too expensive here, so you pass. Hopping back in the Uber car your immediately realise you forgot to turn you kitchen lights off. Not to worry - the Wemo App soon shows you that not only did you forget to turn the kitchen lights off, but you left the TV on in the family room as well. You click your phones screen twice to turn of the devices, and a swift sense of satisfaction overtakes your body for being environmentally friendly. As the ride commences, you arrive at your destination. You didn’t bring your wallet for some odd reason, but not to worry - Uber doesn’t deal in cash. Previously your credit card was linked up to the App, so as you leave the car the App has automatically transferred money from your credit account to the driver, tip included.

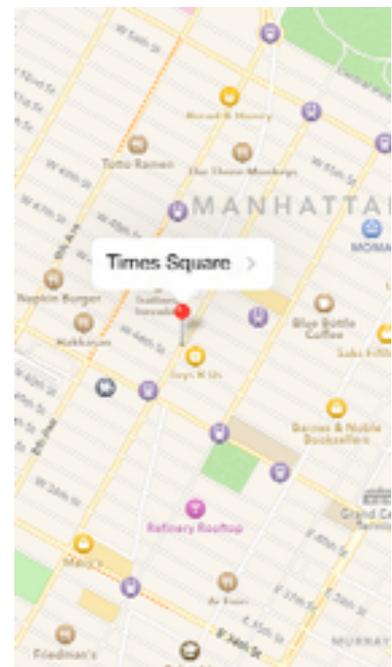


Figure 1.7 Times Square Manhattan

The above scenario represents the advanced potential of the smartphone in the proper environment. The smartphone can hire a personal driver, pay them without cash, compare the price

³⁵ Ashoke Bassynd

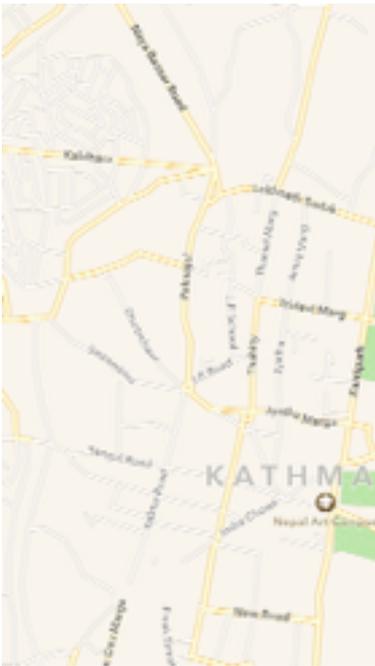


Figure 1.8 Thamel

of something to its competitors online, find cheap gas nearby, and remotely turn off devices in your home with the click of a button. This represents a fraction of its potential. The smartphone has certainly provided humans with a heightened sense of connectivity. But it is expanding by connecting humans to devices, businesses, and tools - not just other humans. Examine Figure 1.7 and Figure 1.8. One is Times Square in New York City. The smartphone points out where certain stores, companies, and public transportation systems are. It even shows how much traffic is on those streets. In comparison, arguably the busiest area in Kathmandu, Thamel's map is virtually blank.

(Note: maps only intended to provide emphasis. Does not represent all of Kathmandu or New York City).

Why Kathmandu Doesn't Cater to the Smartphone... Yet

By now it has been established that the smartphone is approached similarly, but used differently between America and Nepal. The smartphone has the capability to be used to its full potential in the most advanced American cities. In Kathmandu, people only scratch the surface of its vast potential. In an effort to find out why, I examined what was holding Nepal's economy back from becoming more "smartphone friendly." I established five obstacles: banking, grey market, remittance economy, load-shedding, and the government.

Banking

In Nepal, the banking and cash system is summed up by the sarcastic comment from Parashanma Shrestha claiming there was not one legal dollar in Nepal. To re-phrase Mr. Shrestha, Nepal is mainly a cash based economy, and there isn't too much "on the books." When referencing smartphones, getting them linked up to bank accounts opens a world of opportunity for users. Not only can online shopping flourish with the introduction of cards into the economy, but smartphone users will have newly acquired access to millions of "paid" Apps on various App stores. Dealing in cash is slowly going out of style, as more and more virtual financial transactions are occurring in the modern world. The debit card was first introduced in 1996 by the Bank of Delaware. By 1998, debit card transactions outnumbered transactions via check globally.³⁶ Meanwhile, the concept of online banking was simultaneously being introduced as the popularity of the debit card grew in the early 1980's. By 2001, Bank of America had 20% of its customer base using online banking,

³⁶ "Infographic: The History Of Internet Banking (1983 – 2012)." The Financial Brand, Oct. 2012. Web. 25 Nov. 2014.

³⁷ Infographic

consisting of three million people.³⁷ By 2012, 72 million people were using mobile banking and that number has continued to grow into 2014.

As countries outside of Nepal slowly caught on with debit cards and mobile banking, Nepal was still dealing in cash. When the Nepal Rastra Bank became the central bank of Nepal in 1956, they would issue a statement nine years later that Nepal was, “predominantly a cash-economy.”³⁸ In fact, until the mid 1940’s, only metallic coins were used as a medium of exchange. As the banking system began to grow throughout the 20th century, the NRB introduced the Umbrella Act at the turn of the century. The Umbrella Act replaced the NRB Act of 1955 and classified Nepal’s banks into four categories: A- commercial bank, B- development bank, C- finance company, D- micro-credit development bank. Currently there are 32 commercial banks, 79 development banks, 79 finance companies, and 16 micro-credit development banks.³⁹

Deputy Manager of the Card Department at Nepal Bank Ltd., Deepak Regmi, was kind enough to enlighten me on the future of virtual banking in Nepal. Being the only bank in Nepal before the formation of the NRB, the institution has the largest network in the country with 119 branches, and is the highest traded bank on the Nepal Stock Exchange. Stating that the company has only been online since 2007, it was impossible for them to introduce debit cards before that date. They implemented their first debit cards in the same year they uploaded all of their company data to the internet, and Deepak talks of a plan to link up with Visa to start marketing credit cards to consumers.⁴⁰ Of the company’s 1.5 million account holders, he claims around 70,000 are using debit cards as the fourth quarter comes to a close in 2014. His predictions for debit cards in the future: exponential growth. Although he claims two

things have been holding the company back from getting virtual banking: the network and the government.⁴¹ Blaming the network essentially means the internet connection in Nepal, which has a direct correlation with the energy crisis in Nepal. And by blaming the government, Deepak is implying two things. One, the instability of the government over the past two decades has crippled Nepal and tremendously hurt its potential for growth. Two, the company is 62% owned by the government, and because a majority of rural Nepalis aren’t smartphone holders, they are reluctant to push virtual and card-based banking on them because a portion of their company is service based - meaning because their stock is majorly held by the government, they have an obligation to meet the needs of the entire population of Nepal, not just Kathmandu.⁴² However although it has been slow, the growth of virtual banking and debit/credit cards in Nepal is accelerating.



Image 1.5 Nepal Bank Ltd. Headquarters

³⁸ Development of the Nepalese Financial System: Need for the Formulation of a Master Plan (n.d.): n. pag. Development of the Nepalese Financial System: Need for the Formulation of a Master Plan. Web. 25 Nov. 2014.

³⁹ Development of the Nepalese Financial System

⁴⁰ Deepak Regmi, Deputy Manager of the Card Department at Nepal Bank Ltd.

⁴¹ Deepak Regmi

⁴² Deepak Regmi

Grey Market

The grey market is not to be confused with the black market. The black market references the illegal sale of goods in a market, even if the good itself is not illegal. On the other hand, the grey market is one where a product is bought and sold outside of the manufacturers authorised trading channels. This practice is not illegal.⁴³ Although not illegal, the grey market can have crippling effects within an economy. When you break the process down, it is the consumption of goods, usually through authorised means, in a foreign country (which contributes to their GDP). Afterwards the good is then shipped into the native country to be bought locally at a cheaper price. The native country consumer gets to purchase a cheaper good, but the government doesn't benefit from taxation. Most importantly, countries with a vibrant grey market economy have trouble attracting authorised sellers of goods.

To shift focus on the specifics of Nepal's grey market, it must be assumed that a portion of Apple's strategy for not introducing iPhones into Nepal's economy is related to the enormous grey market. Even companies like Samsung, who own a giant share in the market for mobile phones, have been affected. Bikash Gadia estimates, "If Samsung imports 100 million dollars worth of goods, there are 50 million dollars worth of goods being sold separately in the grey market simultaneously." He went on to explain Samsung goods in the grey market can be up to 30% cheaper than authorised sales of the same product. In addition, Samsung cannot sell warranties on grey market phones.⁴⁴ Buying a cheaper phone of the same quality in the grey market is extremely beneficial to the consumer, no doubt. However, the problem the grey market poses is long term, and is related to creating a smarter phone. Nepal needs companies like Apple to enter the marketplace and start selling authorised iPhones. Their mere presence will stimulate other companies to enter the market, and will encourage a more "smartphone friendly" economy.

Another aspect to the Apple iPhone holdout is the simple fact that the market in Nepal is not big enough for them to truly become profitable. In order for the market to get bigger, the grey market must become smaller. The grey market weakens two important components of a growing economy: money via taxation for the government, and GDP. The government cannot benefit from import taxation when goods are being carried by hand across the boarder, which hampers their growth. Also, national GDP does not increase with the sale of grey market goods. These goods are bought elsewhere, and their sale in Nepal falls under the category of used goods, which has no affect on GDP.

In 2013 there were about 620 mobile retail outlets in the Kathmandu valley. Of these, approximately 73 sell grey market mobile products.⁴⁵ As this number has certainly grown in 2014 (I once encountered 91 smartphone outlets on one street alone), it is certain that the number of grey mobile outlets has grown simultaneously. Smartphone companies need a way to combat the grey market if they wish to increase sales. Currently, the process of buying a smartphone and sim card caters to the grey market. Sim cards are cheap and easily acquired, and they work perfectly on grey market phones. Telecommunication companies need to start pushing for long term contracts as opposed to "pay as you go" sim cards. This will help merge telecommunication companies and manufacturers to promote sales of phones in one store. Today you can walk into a Verizon store in the United States and buy an authorised Samsung Galaxy for cheap if you sign up with their long term contract. Currently, many users are buying sims and grey smartphones separately. Although

⁴³ "Grey Market Definition | Investopedia." *Investopedia*. N.p., n.d. Web. 26 Nov. 2014.

⁴⁴ Bikash Gadia

⁴⁵ Lama, Dawa Tsering

some are optimistic about the reduction of grey market activity in Nepal, Suvash Thapa claims, “Much more developed countries than us have not gotten their grey market to stop.”⁴⁶

Remittance Economy

If the smartphone’s development in Nepal is directly linked to the economy as a whole, we must understand why the economy is having trouble growing. A remittance is a transfer of money by a foreign worker to an individual in his or her home country.⁴⁷ Therefore, a remittance economy references an economy in which much of the liquid money comes from remittances. Nepal is third among countries receiving remittance in terms of GDP. In 2012, 25% of Nepal’s GDP was remittance, which is around 4 billion US dollars. Nearly 1,500 Nepalis migrate abroad for work each day. Of those living abroad and sending money home, the number has climbed to 2.2 million.⁴⁸

Whether or not remittance money helps an economy is a highly debated topic. We must first examine the positive effects of remittance. It has helped reduce poverty in Nepal by pumping cash into the economy. Along with this, it has increased foreign exchange reserves, and has helped Nepal’s banks expand with the increase in cash.⁴⁹ However, while remittances provide short term positive gains for a society, many argue this growth is not easily sustained. A 2011 world bank report called remittance money a cushion, and that “no country has ever succeeded in sustaining growth and job creation on remittance alone.”⁵⁰ Remittance economies are unstable, and although cash is flowing into the Nepal, jobs at home are not being created. While labor is exported, a country cannot sustain growth on cash alone without creating local jobs. Also, consumer demand has increased with an influx of cash and it has made it hard for Nepal’s market to cope with the increased demand - as a result imports from other countries are rising.⁵¹ Remittance can also be a gateway for families to fully migrate outside of Nepal. To return to the root definition, a developing country is one that is not yet highly industrialised. In order for Nepal to break out from the realm of developing country, it must reduce its remittance trend. To conclude, Nepal’s economy needs jobs at home in order to promote sustained growth.

Load-shedding

To examine another aspect of why Nepal’s economy is faltering, one must understand the current electricity crisis. In an interview with Surendra Rajbhandari, the Director of Corporate Planning Department Nepal Electricity Authority, he stated, “ Load-shedding is the number one thing holding Nepal’s economy back.”⁵² Nepal Electricity Authority is responsible for buying, monitoring, and supplying electricity to the national grid of Nepal. In order to promote growth in the modern world, a country needs power.

⁴⁶ Suvash Thapa

⁴⁷ "Nepal Third in Receiving Remittance in Terms of GDP." Karobar: Economy, Business, Corporate News From Nepal Karobar National Economic Daily. KNED, n.d. Web. 25 Nov. 2014.

⁴⁸ Karobar

⁴⁹ Knight, Kyle. "The Subtle Wounds of Nepal’s Remittance Boom." Al Jazeera, n.d. Web. 25 Nov. 2014.

⁵⁰ Knight, Kyle

⁵¹ Knight, Kyle

⁵² Surendra Rajbhandari - Director of Corporate Planning Department NEA Interview

Load-shedding is also referred to as a rolling blackout. It implies there is insufficient generation capacity or inadequate transmission infrastructure to provide a grid with electricity.⁵³ This means Nepal's power is equally distributed by the NEA throughout the regions of the country. At various times during the day in one area, power will be lost for a period of time in order to provide power elsewhere. From 2000-2006 there was no electricity crisis in Nepal. In the 8 years since, Nepal has been a slave to the ways of load-shedding. At a low point in 2008, there were two hours of electricity a day in each household, two days a week.⁵⁴ The access to electricity has steadily increased since this low point as the government continues to implement new ways of obtaining electricity.

The term load-shedding cannot be discussed without simultaneously understanding hydropower. Nepal is the second richest country in the world in terms of water resources. Studies have estimated that the country can suck 83,000MW from its water resources. However, only some of these resources are economically and technically viable.⁵⁵ According to Surendra Rajbhandari, the country has a capacity to generate 53,000MW of power from these resources.⁵⁶ With the country only demanding 1,400MW per year of electricity, it seems preposterous to let 51,600MW of potential power go to waste. Unfortunately, the issue is more complicated than it seems.

First of all, a majority of Nepal's water resources are run-of-river, which means rivers generate the power. Nepal has over 6,000 rivers, but the water levels vary as they run rampant in the wet monsoon season and are shallow in the dry season.⁵⁷ Therefore, the production of energy is inconsistent throughout the year, as it is not nearly as effective in the dry season. One might ask, but isn't there a way to store the surplus energy generated from the wet season to use it in the dry season? First off, there is no surplus energy even in the wet season currently. All energy, which is 720MW, is utilised in Nepal, and there is no room for storage of energy. To put things in perspective, the Hoover Dam in America produces 2,080 MW of power - around three times the amount the entire country of Nepal produces currently.⁵⁸ Secondly, even if there was a surplus, many of the run-of-river hydropower projects have no storage potential. Nepal has only one reservoir type hydropower plant according to Surendra, which generates 60MW of energy.

Even with vast amounts of potential energy, Nepal is struggling to dig itself out of the energy crisis hole. In the dry season, Nepal has to import energy from India to keep up with demand, spending valuable dollars which it could be using to fund future hydropower projects. In fact, India has also built various hydropower plants in Nepal to fund their own energy demand. In two particular India-funded hydropower plants in Nepal, the neighbouring country exports 88% and 78% of produced energy, while leaving the rest to Nepal in exchange for production.⁵⁹ There have also been various projects over the past 30 years that have yet to benefit Nepal. Arun III is the most famous. In the early 1990's, the project was a 404MW potential project located on the eponymous river in north-eastern Nepal. Nepal's supreme court ruled that the world bank and the Nepalese

⁵³ Adhikari, Deepak. "Power to the People? Load-shedding in Nepal." *United We Blog for a Democratic Nepal*. N.p., n.d. Web. 25 Nov. 2014.

⁵⁴ Adhikari, Deepak

⁵⁵ Energy Roundtable With Hom, July 27,201, Udaya Raj Sapkota. *Hydropower Development and Foreign Investment in Nepal* (n.d.): n. pag. Web. 25 Nov. 2014.

⁵⁶ Surendra Rajbhandari Interview

⁵⁷ "Nepal Hydropower Overview." Hydroelectricity Investment and Development Company Ltd. N.p., n.d. Web. 25 Nov. 2014.

⁵⁸ Adhikari, Deepak

⁵⁹ Surendra Rajbhandari Interview

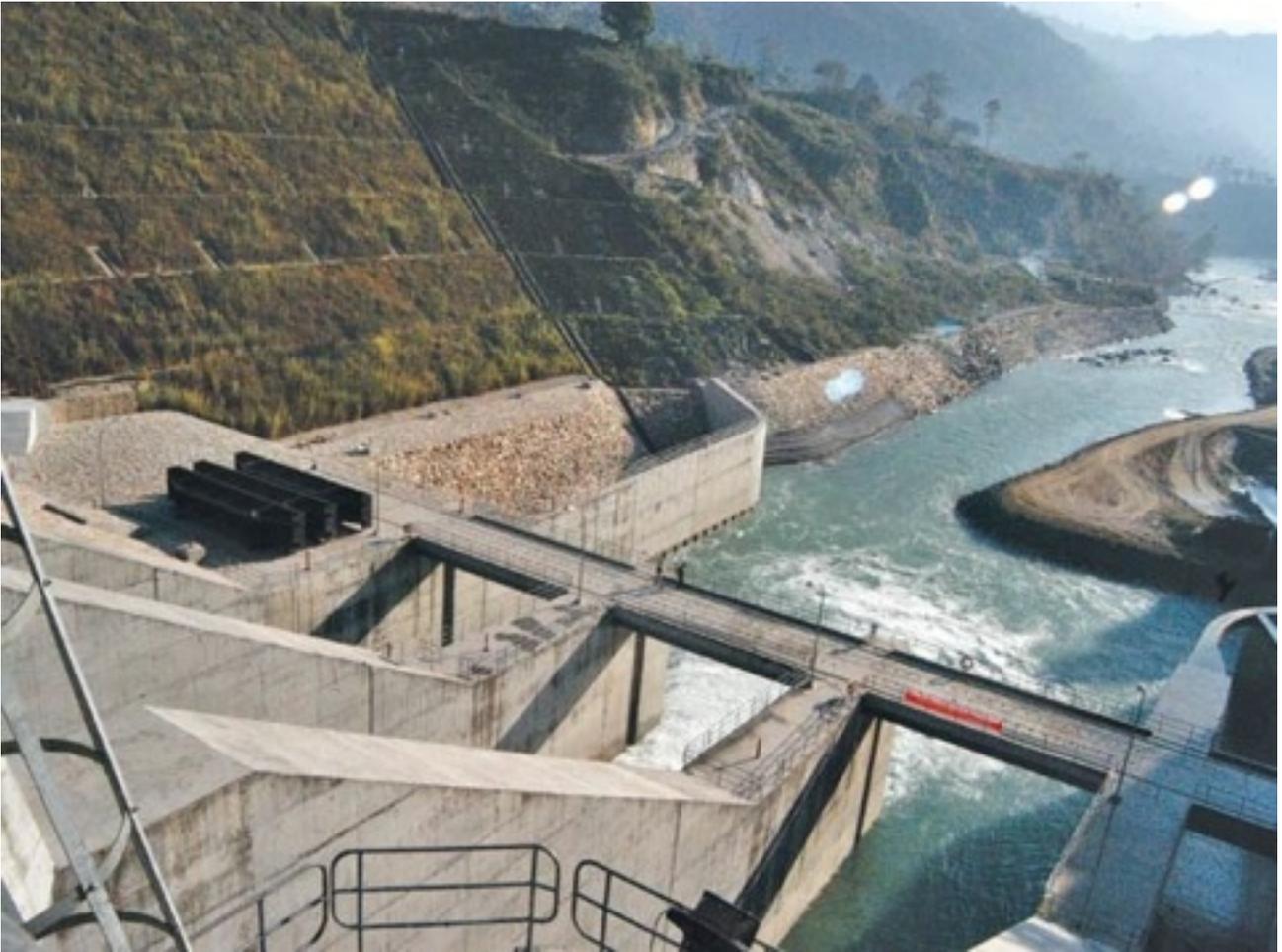


Image 1.6 Run of River Hydropower

government must release information about the project to the public. The public heavily criticised it for environmental and economic issues, and soon after the project was cancelled.⁶⁰ However, when the issue of Arun III arose in my interview with Surendra, he claimed the project is still in progress, and the reason it was cancelled is because the local people felt entitled to far too much money, so a deal could not be reached between the two parties.⁶¹ In another failed attempt, a Chinese investor wanted to create a 750MW potential rock fill dam that would reach up to 195 meters in height. However, the project was feared to force four districts of people to relocate, so the investor pulled funding.⁶² Riddled with these types of stories, Nepal has come close many times to closing the gap on their lack of power and failed. However, the future looks bright.

After three years, Surendra Rajbhandari claims there will be seven months of 24-hour a day electricity throughout the country during the wet season. He claims the government is in the process of constructing six or seven hydro electricity plants that will produce 826MW of combined power. After three years, Nepal should have about 2,000MW of electricity during the rainy season, and will sell the surplus energy created to India to help fund new projects.⁶³ When asked about increasing demand for electricity he assured me the numbers had been factored into the prediction. However, there is one project under construction that will effectively end Nepal's load-shedding

⁶⁰ Adhikari, Deepak

⁶¹ Surendra Rajbhandari Interview

⁶² Adhikari, Deepak

⁶³ Surendra Rajbhandari Interview

permanently if completed. Currently there is a high voltage transmission line being developed that connects India and Nepal with a MW potential of 1,000.⁶⁴ If completed, this will provide year round electricity and end the energy crisis.

All hydropower projects in Nepal are not run by the government. With incredible emphasis, Surendra encouraged private investors to expand the market on hydropower, claiming this will greatly help the countries economy. When asked how confident he was in his predictions for the next three years, he assured me they were accurate.⁶⁵ Just as eliminating the grey market will help draw big competitors like Apple into the economy to boost the smartphone's potential, claiming load-shedding will be non-existent seven months out of the year in three years time will attract investors. Nepal's economy needs power to grow, and if Surendra's predictions are correct, the power is coming.

Government

As the elimination of load-shedding is near, and the virtual banking world is taking off, Nepal's governmental situation is as bleak as it gets. When examining how a developing country's economy is being restricted, usually the finger points straight to the government. Nepal is no exception to that rule. Until 2008 Nepal was a constitutional monarchy, previously ruled by King Gyanendra.⁶⁶ Since the overthrow of the king and institution of a new system, Nepal has been in a political transition period which is leaving the country's people restless. The problem is rooted by the enormous amount of diversity in Nepal, more than 100 ethnic groups, and the struggle for political, social, and economic institutions to properly represent such a vastly diverse group.⁶⁷ Currently Nepal's government is a federal republic, and there is no majority in parliament. 601 members of Nepal's parliament represent 14 zones, 75 districts, and 5 development regions.⁶⁸ As one could imagine, it is hard to make progress with so many voices to be heard. Currently the parliament is working on drafting a constitution, but the deadline for completion has been pushed back too many times to count.

Nepal's government is heavily invested in various financial institutions around the country. In particular, Nepal Bank Ltd. is 62% owned by the government, and claims the instability in this transition period greatly affects their progress as a company. The bank consists of five labor unions - all of which represent different political parties.⁶⁹ NTC, the largest traded company in the Nepal Stock Exchange, has benefitted from releasing some of its shares to the public. Similarly, the next Annual General Meeting of board members of Nepal Bank Ltd. is expected to reduce the control of government in the company - something that has employees incredibly excited. These companies are seeing benefits from distancing themselves from government control.

It is a fact that if Nepal had a stable government, the country would benefit greatly. Every other category mentioned that is holding the economy back from becoming more "smartphone friendly" has some direct relationship with the government. The NEA is a government institution. The largest bank in Nepal has 62% of its shares in government control. The grey market can be reduced with proper government restrictions. When stabilised, the government will be able to

⁶⁴ Surendra Rajbhandari Interview

⁶⁵ Surendra Rajbhandari Interview

⁶⁶ "Nepal Profile - Timeline." *BBC News*. N.p., 14 Aug. 2014. Web. 26 Nov. 2014.

⁶⁷ "Nepal Country Brief." N.p., Jan. 2014. Web. 27 Nov. 2014.

⁶⁸ Nepal Country Brief

⁶⁹ Deepak Regmi Interview

implement plans too keep workers in Nepal and reduce its remittance rates. All that said, the future looks bleak for Nepal's government as many are not optimistic about the functionality of parliament.

Kathmandu Smartphone in five years

This study is incomplete without a prediction for the future. Worldwide, there will certainly be some new gadget smartphone in the year 2019 that will blow away consumers minds. Millennials in Nepal believe the smartphone is on the rise, and there is no doubt it is the future of mobile devices. When asked to make predictions, many explained how it will not soon be a luxury to have one, you will have to have one. As Bikash Gadia so eloquently explained, "I see a day when everything will be engraved in the phone. Passport, birth certificate, everything. (When that day comes) you have to have a smartphone. Your number will be your identity."⁷⁰ In five years this may be true, but will it apply to the city of Kathmandu? The grey market looks to be unstoppable, so fortunately for many Nepali's, phones released in other countries will still come relatively cheap in Nepal. It's difficult to predict where the governmental struggle will lead the country, but with such bleak optimism among the public, it seems the country will still be feeling the effects of indecision in five years time. As for load-shedding, the future is bright. The implementation of 24 hours a day power will do wonders for the economy and introduce loads of new investors to come to Kathmandu. The country may experience a super increase in the private sector in years to come. Also, there is nothing stopping more banks going online in 2019. Wifi is expanding in Nepal, and coupled with internet growth is virtual banking growth. More users will have cards, and many more will be opened to a new world of utilising the smartphone for spending. If the economy can continue to develop, nothing is stopping the smartphone.

⁷⁰ Bikash Gadia Interview

Conclusion

I can't shake an image from the 2012 thriller: Total Recall. The protagonist, played by Colin Farrell, is constantly on the run throughout the futuristic city he resides in. In this particular future, phones don't rest up against your thigh in the safety of your front pocket - they are engrained in the hand. Needing to remove the device that was tracking him, Farrell had to cut open his hand to rid himself of the mobile device. My brain returned in full to this scene when Bikash Gadia stated that he sees a day when everything will be engraved in the smartphone. There may be a day when the smartphone is engraved in us. The history of the smartphone is a mere millisecond on the clock that is our existence, but its reach into the future is endless. While on a quest to understand the cultural reaction to the smartphone in Kathmandu, I soon realised it was the smartphone's interaction to the culture that should be examined. However different our religions, social norms, and locations are, we are all hungry for what the smartphone can offer us - a convenient, compact device that allows us to connect with one another.

If Nepal's economy is to rise out from the developing category, it must deal with a number of issues weighing heavily on its shoulders. The government needs to stabilise, while the country fights to utilise its vast water resources. It needs to limit the number of authorised goods being imported into the country, and encourage its hard working citizens to find work in the country they call home. So instead of sending money home they can happily share in that wealth. If these feats are even remotely possible, the smartphone may find quite a comfortable home in the city of Kathmandu, and potentially stretch its way further outwards into the himalayan foothills. If this happens, the Nepali people are ready to embrace it and all its wonderful features. So to conclude this thorough study of mobile technology, I want to leave readers with a thought. However many studies exist on the damages that technology can bring, hurting our relationships and shortening our attention spans, it stands unmatched against one single truth: technology is only advancing. The smartphone is here to stay, and if it is soon extinct, it will not be from humans throwing down their phones and returning to radios and morse code, it will be because a new gadget has arrived to further connect humans together. We live in the modern world of connectivity - instead of criticising it, learn to adapt.

Appendix

During my month of independent research, I limited myself to areas within the Kathmandu valley. For the first week I aimed to interview as many Nepali Millennials as possible in order to get a general feel for how the smartphone was used. After this was completed, I found it entirely necessary to approach my research from a “top down” perspective as well as looking at people on the ground. With this, I sought out telecommunications providers and smartphone manufacturers to see how they market the smartphone to millennials. I soon realised I had to take a major step back and examine Nepal’s economy as a whole. I interviewed banks, the NEA, colleges, consulting firms, and travel agencies to get a grasp on the economy.

I conducted my research with a strict time restriction and financial restrictions, limiting the number of millennials and businesses to interview. It is very difficult to make generalisations on a large group of people based on a small sample size. However, the people of Nepal were exceptionally friendly and as my topic did not involve the discussion of deeply personal matters, I was generally welcomed with open arms.

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Acronyms

WCDMA - Wideband Code Divison Multiple Access

GSM - Global System for Mobile

MW - Mega Watt

Suggestions for Further Research

Although I was able to arrange meetings with a number of businesses and millennials, there was one name left off my list. Ncell, the telecommunications company which has revolutionised the smartphone service in Nepal declined to be interviewed after various attempts. It would be of the utmost importance to include an interview with a representative from Ncell in further research.

Further understanding Nepal as a developing country would be an effective research topic, as the economy must develop in order for the phone to follow suit. Topics such as Nepal's hydropower resources, online banking, and the future of the government are particularly intriguing.

