

# Chapter 14

## Connectivity and the Healthcare Market in Myanmar

John Walsh

April 2020

**This chapter should be cited as**

Walsh, J. (2020), 'Connectivity and the Healthcare Market in Myanmar', in Chen, L. and F. Kimura (eds.), *E-commerce Connectivity in ASEAN*. Jakarta, Indonesia: Economic Research Institute for ASEAN and East Asia, pp.279-301.

# Connectivity and the Healthcare Market in Myanmar

---

John Walsh

## 1. Introduction

After an extensive period of closure under an autocratic military regime, Myanmar has begun to open to the outside world at a rapid but uneven rate. This has brought about many contradictions that are not easily understood by outside observers. The same pattern is evident in the spread of mobile telephones and the Internet – information communication technology (ICT) – which has, in the course of 3 or 4 years, been transformed from the highly expensive preserve of a small urban elite to an almost ubiquitous reality. In every town and township, dozens of colourful Telenor and Ooredoo stores offer connectivity for a few kyats, whilst low-cost mobile telephones manufactured in China are easily available.<sup>1</sup> The penetration of ICT has changed from a few percent to more than 80% or 90% in just a few years (depending on the source) (Hynes, 2017). Yet access does not mean freedom. Strong laws promote censorship and journalists are jailed for seeking to do their jobs, and a culture of self-censorship inhibits most people from speaking out because they have such a high burden of evidence of what might well happen to them if they do bring themselves to the attention of the authorities.

The flows of information are, therefore, uneven and sometimes almost unidirectional. If people want to speak in favour of the national ideology (as framed by the lengthy rule of the previous military regime), they may do so freely and will receive enthusiastic support by like-minded individuals. However, anyone who would like to take an alternative approach faces not just the vile but tedious opprobrium of Internet trolls but also possible prosecution.

As a result, state ideology, nationalism, unity (i.e., obedience), uncritical support of the governing elite are mostly unchallenged in most popular media. In the past, popular media

---

<sup>1</sup>As in Cambodia (Ampornstira, 2016), private sector organisations are leading the way in introducing new services and applications, with little support from the public sector. Ooredoo, for example, has been responsible for bringing mobile money services to Myanmar (Mizzima, 2017).

included television, radio, newspapers, and magazines. Today, increasingly, popular media means Facebook. For most subscribers of low-cost ICT access packages, Facebook is provided for free whilst any other Internet application requires an additional fee that few people appreciate what benefits it would provide. For millions of people, therefore, who have suddenly been provided with an apparent cornucopia of new information and the benefits of connectivity, what they in fact find is that they have become a part of the Facebook community. Facebook is an extraordinarily popular Internet application that provides each user with an individual webpage that can be tailored with details of their profile and self-reported activities and opinions, as well as the opportunity to provide this information to other users deemed as 'friends' and, automatically, to receive similar information from those friends. Facebook has benefited greatly from network externalities – that is, the more that one's friends and family members are members of the network, the more valuable network membership becomes to the individual. Under these circumstances, it is clear that Facebook has become a significantly important means of communication. Although most people use this part of the Internet as a way to keep in touch with family and friends, it only needs one member of that mini-network to be subscribed to a user with social or political opinions for those social and political opinions to all other connected members. Owing to the propensity of people to take advantage of confirmation bias, this has resulted in users becoming immersed to a greater or lesser extent in a network in which only similar opinions are to be found.

It is evident from previous research (e.g., Khaing and Walsh [2016]) that most Myanmar people mistrust what they read on the Internet. This is not surprising given the years of propaganda spread by the previous military regime and its allies, and the disjunctions that people experience daily when what they experience is so very different from what they are told is happening. It is worth noting that the Myanmar national language (which is used by most ethnic minority Myanmar people even when it is not their first language) does not use the Roman alphabet and is not widely taught outside the country. Myanmar is, after all, still a poor country and of low importance to Facebook's global business (although it is banned completely in China). When called upon to provide evidence on some of their more questionable business practices, Facebook executives were obliged to admit that the company did not have sufficient technical capacity in Myanmar language to monitor all user sites for hate speech.

Overall, therefore, information seeking by ICT in Myanmar is not a value-free or non-ideological field of inquiry. Seeking information on health issues is even more complicated because of the limited amount of information available in Burmese, because of the

compromised level of trust in any form of official or apparently official discourse and, because most health services providing information on the Internet are associated with the private sector and provide goods and services that are beyond the ability of most people to afford. This chapter reports on research conducted in northern Myanmar on the use of ICT to search for health-related information. It builds upon previous studies by the author, occasionally in collaboration, of ICT usage in Myanmar and of aspects of healthcare in that country. The purpose of the research is, on the one hand, to understand, with a view to improving, how people use ICT to search for health-related information and, on the other hand, to understand better how the specific circumstances at this time affected and are affected by the spread of globalisation (access to ICT) and capitalism (private sector healthcare provision).

The chapter analyses the health system and the spread and knowledge of ICT use. It then describes the research methods used to collect data, presents the findings, discusses the findings in the light of the circumstances portrayed in this section, and recommends actions for various practitioners.

## 2. Healthcare in Myanmar

The public sector health organisations are listed in Table 14.1. There are also 193 private hospitals, 201 private specialist clinics, 3,911 private general clinics, and 776 private dental clinics, in addition to various civil sector organisations (Figure 14.1) (Latt et al., 2016).

Doctors and healthcare providers have historically been held in high regard in Myanmar. This is as true of shamans in traditional villages as it is of surgeons in contemporary society, partly because Buddhist traditions conflate virtue and position, reinforced by the belief that doctors generate good karma continuously as part of their work. Of course, not all doctors are treated as being of equal status, since the nature of the work is hierarchical, as too is the configuration of gender and ethnicity. On some occasions, these historical hierarchies become confused by the nature of modernity and the changes it brings. For example, in medical universities it is common for the highest-ranking opportunities (e.g. surgery) to be reserved for male students, whilst female students are offered the less prestigious places (e.g., physical therapy). As a result, Mandalay has a phalanx of highly-trained and skilled female physical therapists looking for rewarding work (Walsh and Lovichakorntikul, 2015).<sup>2</sup>

---

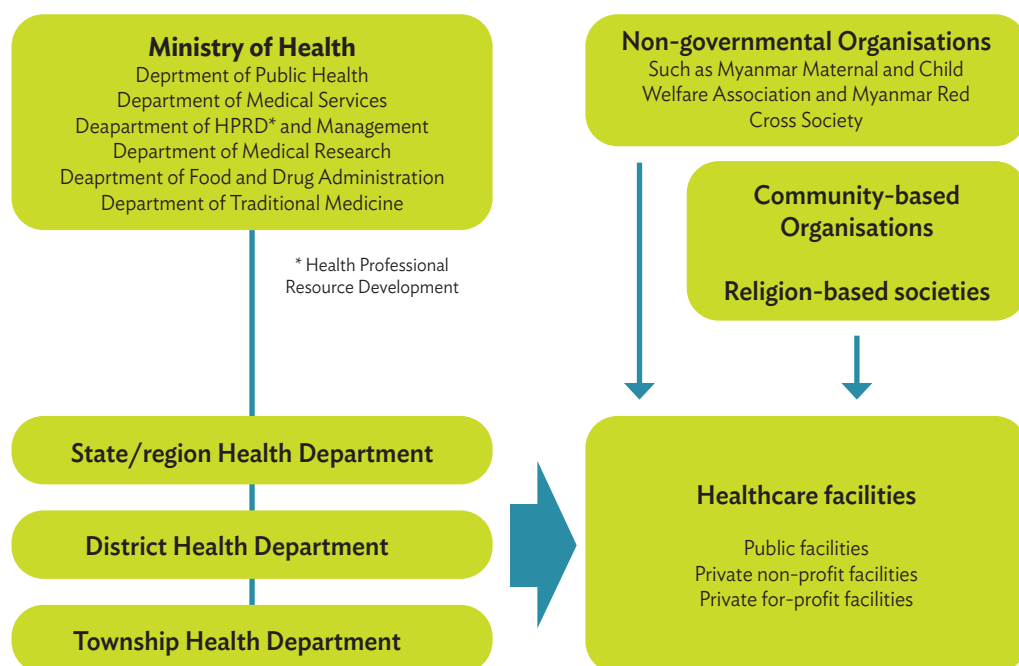
<sup>2</sup> It has been hoped that a recently invoked stage of the Association of Southeast Asian Nations (ASEAN) Economic Community, which enabled skilled workers to move to and work in any ASEAN country, would provide suitable opportunities for people in this situation. However, this appears not to have been the case.

**Table 14.1: Public Health Facilities in Myanmar, 2014**

<b>Curative and rehabilitative services</b>	<b>1,056</b>
General hospitals (up to 2,000 beds)	4
Specialist/teaching hospitals (100–1,200 beds)	50
Regional/state/district hospitals (200–500 beds)	55
Township hospitals (25–100 beds)	330
Station hospitals (16–25 beds)	617
<b>Preventive and public health services</b>	<b>2,199</b>
Primary and secondary health centres	87
Maternal and child health centres	348
Rural health centres	1,684
School health teams	80
<b>Traditional medicine</b>	<b>259</b>
Traditional medicine hospitals	16
Traditional medicine clinics	243

Source: Health in Myanmar (2014) in Latt et al. (2016).

**Figure 14.1: Healthcare System in Myanmar**



Source: Latt et al. (2016).

Unfortunately for them, most people are not aware of the nature of physical therapy and so do not value it. Instead, they will at need resort to traditional massage, which is available from partly trained or untrained personnel at a fraction of the price. This is a manifestation of a broader principle, which is that there are two main social sectors with respect to healthcare. The first sector, which is much the bigger of the two, consists of rural and urban poor with little disposable income to be used for health purposes and whose life situation resembles, as James C. Scott famously put it, a person who is standing in water up to the chin and who knows that any misstep or disturbance in the water might lead to disaster. People in this sector have little choice but to resort to the cheapest possible options when it comes to healthcare, including abstinence, traditional homespun remedies, and generic drugs. In business terms, these people are of little value to the private sector or, at least, not yet since industrialisation has not yet reached a stage when most people are able to participate in market-based healthcare services. The second sector is growing, albeit from a low base: the emergent middle class, who are able to take advantage of the new managerial and clerical positions created in manufacturing industry investment or in retail and distribution centres of newly arriving imported goods, including vehicles, farming equipment and, indeed, ICT equipment.

These are people who may, in general, be categorised as the aspirational bourgeois or middle class, urban in location and willing and able to spend money to meet their own and their family members' healthcare needs. These people will likely form a new market for cosmetic and voluntary healthcare procedures such as dental braces and whitening, cosmetic surgery, and eye-defect corrections. One parallel to consider in this respect is in neighbouring Thailand, where these activities have become prominent. Private healthcare sector actors will target people in this category for their growing healthcare provision services.

There is, of course, a third category of people: the wealthy and very wealthy who prospered under previous regimes, whether or not they were associated with them. These people have been permitted to travel internationally and have become accustomed to take advantage, at need, of the excellent services provided at Bangkok's leading hospitals and clinics (Maung and Walsh, 2014). It is unlikely that Myanmar will be able to replicate these international-status facilities in the foreseeable future. Consequently, this category will not be the principal focus of new healthcare providers although they will not be ignored if they can in some cases provide an acceptable alternative option to international care.

Although it has been possible to produce personnel capable of meeting current healthcare provision needs, this is not true of medical equipment and pharmaceuticals, which must be sourced from overseas and then imported for retail or else licensed from international

manufacturers. There are different options, depending on the degree of expense and status which are to be provided. High-end equipment is imported from Japan or a European country such as Germany. Often, Singapore is used as the location from which potential respondents may be selected. Lower down the scale is equipment from China and generic pharmaceuticals from India. A healthcare provider can select an option for the service provision intended overall or else adopt a portfolio approach in which patients are sorted into categories dependent on ability to pay. There are well-known business strategies that can be used to describe this situation accurately.

### 3. Mobile Telephones in Myanmar

The recent introduction of mobile communication in Myanmar is a potentially life-changing prospect for the country, one of the poorest in Southeast Asia. A quarter of its population is estimated to live in poverty, whilst the country as a whole performs poorly on most socio-economic indicators. There is much potential for mobile phones to play a role in socio-economic development, be it through access to services such as mobile money, or simply the access to information a mobile phone provides. It is estimated that 90% of wards and villages in the country already have a mobile signal. The Ministry of Posts and Telecom (MPT) began offering mobile services in 2013. In January 2014, Ooredoo and Telenor were granted licenses to provide mobile services, with commitments to provide 85% voice coverage within 5 years. These networks are expected to first cover the densely populated urban centres and gradually move outwards to rural areas, which do not currently have coverage.

Myanmar's mobile phone penetration reached 10% of the population in 2012–2013 whilst 2013–2014 saw a penetration of 27%. Penetration reached 90% by the end of 2018 (World Bank, 2019). Using high speed packet access (HSPA)<sup>3</sup> and long term evolution (LTE)<sup>4</sup> technologies, companies will install mobile communication (GSM) network providers, which are operating on the 3G (900MHz spectrum) and 4G LTE (the most advanced universal mobile telecommunications system [UMTS]<sup>5</sup> 900 technology).

---

<sup>3</sup> HSPA: a third-generation (3G) mobile communication technology offering faster data download speeds at the cost of upload speeds.

<sup>4</sup> LTE: a fourth-generation (4G) mobile communications standard offering data speeds up to 10 times faster than the current 3G network.

<sup>5</sup> UMTS: another third-generation (3G) technology commonly called W-CDMA (wideband CDMA). UMTS delivers faster data rates than EDGE due to how the data is coded and the spectral bandwidth used.

Myanmar's mobile subscription count grew 87% year on year, to 10.7 million at the end of September 2014, pushing mobile penetration to 19.9%, up from 12.5% at the end of 2013, according to global analyst firm Ovum in a press release on 12 March 2014. According to the compound annual growth rate of the latest forecast report, mobile subscriptions will grow at 21%, to reach 38.5 million by the end of 2019, up from 14.8 million at the end of 2014, as operators expand their networks to new cities and rural areas. Overall, Myanmar's mobile phone penetration rate is now about 60% of the population.

The provision of current and up-to-date information to the rural populace on current market prices of goods, market locations, simple food processing, weaving, dying, fashion and design, agricultural practices, amongst others, will increase productivity and income growth. Generally, information provision increases the resourcefulness of the local users as well as their standard of living. Health rural tele-density is low due to the scarcity of communication infrastructure in most parts of rural Myanmar – a scenario that has created the digital divide between urban and rural areas.

ICT infrastructure, especially mobile phones, must be extended to many rural areas to enhance their access to the benefits of telecommunication infrastructure.

### 3.1. About Mobile Telecom Operators in Myanmar

#### Myanmar Post and Telecommunication (MPT)

MPT, the largest 3G network in Myanmar, announced a nationwide 3G network expansion upgrade, increasing its 3G coverage to more than 90% of the country's population by early February 2016. According to their reports (Q1 2016), there are 18 million mobile subscriptions with licence in the 900MHz and 2.1GHz bands. MPT had a 46% market share, whilst number-two Telenor had a 37% market share, and third-place Ooredoo had a 16.5% market share.

#### Telenor Myanmar

Telenor Myanmar has the second-largest number of mobile subscriptions in Myanmar. On 30 January 2014, Telenor Group, ready to bring world-class telecom services to Myanmar, signed an agreement with Myanmar for a nationwide telecommunication licence. Their reports (Q2 2016) say there are 16.889 million mobile subscriptions with licence in the 900MHz and 2.1GHz bands, valid for 15 years. Telenor built a mobile network using HSPA and LTE-ready technologies and provided network coverage for 94% of the country's population by the end of April 2016. They launched in Myanmar by switching on the mobile network in Mandalay, the cultural city, on 27 September 2014, and the network is now



expanding into other cities and rural areas. Telenor 4G services have been available in Nay Pyi Taw since 7 July 2016 but are not available in Yangon, Mandalay, and the rest of Myanmar. Voice and data services over 2G and 3G commercially launched as an initial offering.

### Ooredoo Myanmar

Ooredoo Myanmar, the country's third-largest operator, launched a 4G service in parts of the three major cities — Yangon, Nay Pyi Taw, and Mandalay — making it the first to offer the high-speed service. In August 2014, Ooredoo signed an agreement with Myanmar for a nationwide telecommunication licence. Their reports (Q1 2016) say it has 6.9 million mobile subscriptions. Ooredoo's world-class network covered more than 85% of the Myanmar population by the end of April 2016, driven by the company's record investment in 3G and 4G technologies. By the end of 2018, the coverage of 3G and 4G network had reached 91% and 75% respectively (World Bank, 2019).

## 4. Research Methods

### 4.1. A Mixed Methods Approach

This project used a mixed methods approach to data collection for the purposes of triangulation and because there are two distinct groups of potential respondents. The first is the mass of the population who now are likely to have access to ICT and to have various needs with respect to healthcare but are unlikely to have expert knowledge of either area. In this case, a quantitative survey was deemed appropriate. In the second case, there is a relatively small number of individuals in northern Myanmar seeking to distribute information in healthcare through ICT for a variety of reasons. These individuals might be involved in marketing services to potential customers, but they might also be involved in a range of different activities such as seeking to use ICT to improve the dissemination of results from diagnostic laboratories to medical doctors, trying to provide alternatives to customers in the form of generic rather than branded medicines or various forms of traditional or Chinese medicine, or seeking to coordinate field clinics in a range of different rural and semi-rural locations for an itinerant specialist available in the region for a limited period of time. For these people, individual interviewing was deemed appropriate.

The quantitative survey built explicitly on the first phase of the research, which achieved a sample of 411 Myanmar respondents and 200 Vietnamese respondents; a smaller sample of 200 Myanmar respondents was taken, divided into two locations. An original questionnaire was devised by the researcher based on existing knowledge and the framework alluded to in

the first section. The questionnaire was tested by an experienced, bilingual field researcher who could use an English questionnaire, ask the questions in Burmese, and recode the results in English. Minor modifications were suggested by the pilot test and then incorporated into the questionnaire used in the main part of the research.<sup>6</sup>

Returned questionnaires were checked for completeness, then codified, and the results entered into the PSPP statistical software spreadsheet. PSPP is a free, open-source software programme capable of conducting statistical tests sufficient for the needs of this research study. Various statistical tests were employed, and the results incorporated into the findings section, which follows.

In terms of the qualitative research, various methods were, out of necessity, used to contact the relevant individuals. These included personal interviews, e-mail exchanges, and personal interviews by the field researchers. Efforts were made either to record the conversation or else to make extensive notes for subsequent transcription.

The language of transcription was English. A semi-structured question agenda was constructed to encourage each conversation to be related to the core issues of interest, but also to develop in other directions if the respondent possessed specialist or expert information about which it would not have been relevant to ask other respondents. A combination of purposive and snowball sampling techniques was used to identify and approach potential respondents. A problem with snowball sampling is that of excessive homogeneity of the sample and, for this reason, the purposive sampling approach was also used.

Data collected by both quantitative and qualitative means were entered into a conceptual database together with the secondary literature, which included the first phase of the current research project and other papers developed from it and from other related projects. The research database also incorporated notes from the field researchers' field notes diary. The researchers were encouraged to take notes and to make them available for the database. The diaries may be useful for recording details that might have affected the interviews. For example, some of the fieldwork took place when Facebook executives were being asked to provide evidence to government committees from the United Kingdom and the United States, and this was covered in the Myanmar media – something useful to know because respondents might have been more sensitive to the issues.

---

<sup>6</sup>A convenience sampling technique was employed in each of the two research sites, supplemented by a measure of purposive sampling when there was a possibility of under-representation of people in some demographic categories. In particular, previous research had indicated that, especially in rural areas, there is a danger of under-representation of women when some potential respondents, perhaps embarrassed by their limited level of education, were unwilling to participate.

### 4.2. Limitations

All research projects, of course, are constrained by time, space, and budget, and the fieldwork in Myanmar had additional limitations.

The first is the lack of infrastructure in much of the country and, particularly, outside the urban areas. This is true of transportation infrastructure, and many stretches of the few roads that do exist are not effectively paved, which means they quickly become impassable during the monsoon season, with the effects persisting for much of the rest of the year. Then it is difficult, expensive, and time-consuming to conduct research, especially outside the urban areas, which could have an impact on the extent to which the sample accurately represents the population.

The urban areas and Mandalay in particular are witnessing an influx of workers from rural areas looking for manufacturing jobs, and many live in self-created housing of questionable legal status. Their presence likely means that population estimates for the city and its environs will be incorrect and, also, owing to their legal status, the workers are unlikely to be willing to participate in any form of research.

Generally, Myanmar society displays a greater systematic and structural gender bias than other Mekong countries. Boys tend to be better educated than girls and are also awarded more prestigious positions if they are accepted by universities. This situation occurs at all levels of society and the implication is that women are often under-represented in research. In this study, the possibility was countered by purposive sampling when it was thought that such bias might exist and, so, would be minimised.

Myanmar is ethnically diverse. Most members of an ethnic minority, apart from those who are few in number, tend to live in a state or region that has the same name. As a result of the impacts of colonisation, decolonisation, and subsequent political events, many ethnic minority groups have a desire for autonomy, sometimes expressed in conflict. Some parts of the country are therefore difficult or impossible to research, and so it cannot be claimed that any research project of this sort is generalisable to all regions of the country. In addition, most ethnic minority people speak as a first language a language that is neither Burmese, the language of the Burman majority or English, which are the languages of the research team. Not only is this a limitation to the research because it means some significant portions of the population could not be reached but it also changes the nature of the relationship between these individuals and ICT. Information available in the Burmese language is scant but is much more than that in Kachin, Karen, Mon, Chin, and other minority languages. This, not to

mention different cultural practices and modes of cultural production, will have a significant impact upon information-seeking processes.

Finally, across Myanmar society, many are cautious of talking to anyone who might be in a position of authority. The researcher, no matter how well trained and experienced, is asking questions of an individual who has some reason to be wary about such an interaction. In some cases, the potential respondent will avoid participation. In others, the respondent believes that giving the supposedly correct responses will be rewarded in some way whilst, conversely, giving supposedly incorrect answers will bring about some kind of sanction. It is not always possible for the researcher to be able to determine this, so it might represent some form of bias in the findings.

In each of these cases, the researchers sought to understand the phenomena involved and to take such steps as were possible to identify cases that might be problematic and remedy them, or else excuse the respondent from participation. The use of triangulation was also important through seeking to examine data from different perspectives to evaluate whether they were correctly identified and valid. The reader will form an opinion on the extent to which this has been achieved.

## 5. Findings

### 5.1. Introductory Findings

Based on the qualitative research, ICT is considered to be a technology suitable for younger people and, in a society where seniority depends to a considerable degree on age, that means more junior people. It has been argued that people who reach the level of seniority of a doctor or clinician will be less likely to use ICT. If they do so, it will be only to delegate basic administrative work to staff members. Of course, it would be wrong to characterise all senior people in the same way and there will be many exceptions.

One respondent observed of the overall picture:

Doctors are not expert in using computers. Doctors do not want to use ICT in healthcare because they are afraid someone will copy their treatment if they use ICT. They are not familiar with technology. Famous doctors just use handwriting to control loyal patients so they do not go to other doctors when they need treatment. As well as in this way, doctors are preventing their treatment. But this is a very wrong method and because of this old way many patients died. Some doctors do not remember their handwriting and gave the wrong treatment. Even though a private hospital asks doctors to put treatment data into

the hospital's main server, they do not follow it. They just want to be the main person and dominate in a hospital more than the hospital. So, power balance is high from the doctor's sides. The worst thing is that doctors do not let patients know what kind of medicine they are using.

There are several issues to unpack here, which were also reported by other respondents:

- Insufficient infrastructure. Myanmar's organisations lack the technology that is taken for granted in developed countries, including credible credit card transactions; hospitals and clinics must deal in cash, which represents a security threat. Patient records are not centralised; details are kept in handwritten folders, which hampers coordination when patients visit more than one clinic or when notes are damaged or lost (or can no longer be read). Doctors maintain control over medications as if they were their own intellectual property, not to be shared with anyone else. In some cases, these problems are eased incrementally as new technology is introduced in start-up ventures, but legacy issues will stretch some way into the future.
- Status quo. Inevitably, some people benefit from maintaining the status quo. Doctors protect their power and status by not sharing their knowledge with those who might use it to cure patients. Doctors see each other as competitors rather than colleagues.
- ICT use as reshaping power relations. Some see ICT as a threat, whilst others see it as an opportunity.

Facebook tends to funnel users towards a single set of sites relating to health issues. Reliance on overly homogeneous information will maintain power relations and block information flows and means of change. As one respondent observed: 'Doctors should not be the first priority in healthcare industry improvement. So more international private hospitals are needed where ICT are used. Doctors should not be the authority in hospitals and on patients because they are just employees'. There is a sense amongst respondents that, as in other parts of society, senior figures have been exploiting the current system for their own ends rather than upholding the Hippocratic oath. People tend to see the private sector as a possible means of dissolving existing bonds and enabling a reconfiguration of power relations and resources, which, because they will be organised by the market, will be more dynamic and efficient.

Most respondents had been using Internet applications for only a short time and tend to use them mainly for keeping in touch with friends and family members. The current use of ICT in the healthcare industry and in seeking information about it is limited and there are some important reasons why uptake of the tools will continue to be limited.

The role of non-governmental organisations and of faith-based cross-border networks is important in this context. They can be more technologically advanced than the stakeholders with which they interact, and they may play a role in mediating between stakeholders' inability to use the tools appropriately and more effective use inspired by example. In many parts of Myanmar, these organisations lead the way in driving societal change. There is a role for them in sourcing new information and means of action, which might then be implemented on the ground. For example, research into drug use and rehabilitation in Kachin State in northern Myanmar indicated that most forms of treatment were old-fashioned and unhelpful, and that new thinking is required. Since many people are religious (Baptists, primarily), there is a role for churches and their members to introduce more advanced methods from overseas.

### 5.2. Quantitative Findings

A total of 203 questionnaires were collected in and around Mandalay in north central Myanmar. Mandalay is the historical capital of northern Myanmar and was previously the royal seat. It has a population of approximately 1.2 million people, with many more moving in from the countryside in search of jobs arising from rapid industrialisation. Nevertheless, the area remains primarily agricultural with some prospects for exporting if transportation infrastructure and quality assurance problems can be overcome.

In terms of the location of respondents, the following results were obtained.

**Table 14.2: Location of Respondents**

	%
City	46.8
Sol	12.3
Shan	12.3
Gabo	9.9
Lon Taung, Industrial Zone, Amarapura, Pa Thein Gyi (each)	4.9
Total	100
<i>N</i>	203

*N* = number of sample.  
Source: Original research.

Approximately half of the sample (city + industrial zone = 51.7%) is urban, whilst the sample from the remaining villages (48.3%) was rural. Overall, 58.1% of the sample was male and 41.9% female, which confirms the difficulty in obtaining responses from women. In terms of age, 34.2% of respondents were 18–30, 40.6% were 31–50, and 25.2% were 51+. For household size, 11.0% had 3 or fewer members, 66.0% had 4–6 members, and 23.0% had 7

or more members. There were significantly more male respondents than women in the rural setting ( $p = 0.016^*$ )<sup>7</sup> and household sizes were significantly higher in rural areas ( $p = 0.041^*$ ).

Land was farmed by 35.0% of the total sample, all of whom were in a rural setting. The mean amount of land farmed was 5.2 acres (approximately 2.1 hectares) with a standard deviation of 3.7 acres, which further indicates the low level of land ownership and its impact on poverty eradication. Five respondents farmed land, with a mean of 4.3 acres, they did not own.

**Table 14.3: Occupations of Respondents**

%	Urban	Rural	Overall
Student	11.2	3.1	7.1
Government official	3.1	3.1	3.1
Business owner	18.4	1.0	9.7
Full-time worker	63.3	12.2	37.8
Retired	1.0	0	0.5
Housewife	3.1	1.0	2.0
Farmer	0	79.6	39.8
<i>N</i>	98	98	196
<i>P</i>	0.000**		

*N* = number of sample, *P* = level of significance.

\*\* = result significant at the 0.01 level.

Source: Original research.

The occupations of respondents showed a statistically significant distribution.

As would be expected, then, most of the people in rural settings were involved in agriculture, whilst most of those in the urban sector were in full-time non-farm employment or business owners.

Overall, 98.5% of the total sample, and 100% of those in urban settings, owned a mobile telephone, although this is not a statistically significant result. There was no statistically significant difference in mobile telephone ownership when it came to gender.

That people distinguish between Facebook and the Internet is demonstrated by the fact that 76.2% of the sample reported that they had access to the former and just 46.3% to the latter. Patterns of use and length of ownership were similar.

**Table 14.4: Frequency of Use of Facebook and the Internet and Length of Ownership of Access**

%	Facebook	Internet		Facebook	Internet
Several times a day	43.5	40.9	Less than 6 months	13.4	6.5
Once a day	37.7	34.4	6 months–1 year	27.4	18.3
Every few days	12.3	20.4	1–2 years	26.0	28.0
Less often than that	6.5	4.3	More than 2 years	32.2	47.3
N	154	92		146	93

N = number of sample.  
Source: Original research.

Most users access Facebook and the Internet at least once a day and more than half have had access for more than 1 year, meaning market penetration has been intensive in the last couple of years, leading to market saturation. Operators are expected to begin positioning themselves more competitively in providing features and services rather than just access.

Respondents were next asked a series of questions relating to their use of mobile telephones to search for different types of health information. The following results were obtained:

**Table 14.5: Searching for Health Information with Mobile Telephones**

% saying 'yes'	Overall	Male	Female	P	Urban	Rural	P	% <sup>a</sup>	% <sup>b</sup>
Search for general health information	23.5	18.1	31.0	0.079	35.6	10.4	0.000**	29.9	49.5
Search for health for a specific purpose	17.6	15.5	20.5	0.545	29.1	5.2	0.000**	22.9	38.0
Search for doctor or clinic	12.5	9.5	16.7	0.208	8.7	16.7	0.069	16.2	26.9
Make appointments with doctor or clinics	21.7	19.3	25.0	0.585	13.7	30.2	0.008**	26.3	42.9
Search for medicines or other health related products	15.5	12.1	20.2	0.289	21.2	9.4	0.066	20.1	33.3
Search for female health issues	13.5	5.2	25.0	0.000**	23.1	3.1	0.000**	17.5	29.0
Search for love and relationship information	18.5	19.0	17.9	0.932	15.4	21.9	0.084	23.4	38.7
Share opinions and ideas about health issues with other people	16.6	13.0	21.4	0.267	18.5	14.6	0.447	21.6	36.9

<sup>a</sup>= percentage of respondents who are not facebook users, <sup>b</sup>=percentage of respondents who are facebook users.

\* = result significant at the 0.05 level, \*\* = result significant at the 0.01 level.

Source: Original research.



## E-commerce Connectivity in ASEAN

The first thing to note from these results is that few people use their mobile telephones for any of the health-related activities considered here. There is no activity or demographic group in which more than half the respondents answered positively.

The second thing to note is that women tend to look for health information more often than men do. This is not surprising as women are more likely to be responsible for the healthcare of children and other dependents. However, the gender differences led to a statistically significant result only on one occasion.

Third, several statistically significant results were obtained from examining setting. Urban respondents are significantly more likely to search for general or specific health information and for information on female health. On the other hand, rural respondents are significantly more likely to use their mobile telephones to make appointments with doctors or clinics than urban respondents. There is certainly an urban–rural divide, which was identified in the previous phase of research and has reappeared here.

Finally, it is clear in every case that Facebook users are more likely to participate in these health-related activities than non-users, and that Internet users are more likely again to be involved than Facebook users. It is evident that there is scope for every category of respondent to have more opportunities to obtain information and to interact with others with the goal of being better informed on health.

Respondents were next asked about other possible sources of health information, with the following results:

**Table 14.6: Analysis of Information Sources for Health Information**

% saying 'yes'	Overall	Male	Female	P	Urban	Rural	P	% <sup>a</sup>	% <sup>b</sup>
Family members	97.5	98.3	96.5	0.353	97.1	98.0	0.700	97.4	96.8
Friends and neighbours	76.2	79.5	71.8	0.203	65.4	87.8	0.000**	73.4	67.7
Work colleagues	46.5	47.0	45.9	0.874	36.5	57.1	0.003**	48.1	41.9
Doctor	85.2	86.3	83.5	0.581	91.4	78.6	0.011*	83.8	74.2
Pharmacist	38.6	43.6	31.8	0.088	38.5	38.8	0.963	35.1	31.2
Newspaper	7.4	6.0	9.4	0.359	9.6	5.1	0.221	9.1	14.0
Radio	5.9	3.4	9.4	0.075	6.7	5.1	0.625	5.2	7.5
Television	7.9	6.0	10.6	0.231	12.5	3.1	0.013*	8.4	9.7
Other	1.5	1.7	1.2	0.757	1.9	1.0	0.596	1.9	3.2

<sup>a</sup>= percentage of respondents who are not facebook users, <sup>b</sup>=percentage of respondents who are facebook users.

\* = result significant at the 0.05 level, \*\* = result significant at the 0.01 level.

Source: Original research.

These results indicate both similarities with and differences from the previous results. One type of difference is the much higher levels of consultation when it came to, in particular, family members, friends and neighbours, and doctors. Nearly everyone consults family members, for example. It is noteworthy that pharmacists are important sources of information and should not be ignored when it comes to planning healthcare campaigns. It is also noteworthy that, in the case of health information, Facebook and the Internet are now more important sources than newspapers, radio, and television.

Women were noticeably less likely to consult sources that might require them to leave the house (e.g., friends and neighbours, work colleagues, doctors, and pharmacists) and more likely to consult sources that can be accessed within the house (e.g., newspapers, radio, and television).

However, these are not statistically significant results.

The urban–rural divide is again prominent here. Rural respondents are significantly more likely to consult friends and neighbours and work colleagues than are urban residents, who in turn are significantly more likely to consult doctors and television, presumably for access-related issues.

Finally, it is evident that Facebook and, particularly, Internet users are less likely on average to consult people (family members, friends and neighbours, work colleagues, doctors, and pharmacists) but more likely to consult other sources (newspapers, radio, and television). It is not possible to determine whether there is a causal relationship affecting these results.

Respondents were next asked about their attitudes towards Chinese or traditional medicine and their preferences between generic and branded medicines. Overall, 75.3% of all respondents answered that they did use Chinese medicine, 18.9% preferred generic medicines, 8.0% preferred branded medicines, and 73.1% said that it depended on the situation. Further investigation revealed that both Facebook and Internet users were significantly less likely to take Chinese medicine than non-users ( $p = 0.001^{**}$  and  $0.000^{**}$ , respectively). Generic medicines were significantly preferred in rural settings ( $p = 0.006^{**}$ ) and branded medicines were significantly preferred by Facebook ( $p = 0.043^*$ ) and Internet ( $p = 0.013^*$ ) users.

The next part of the questionnaire related to satisfaction with various aspects of healthcare respondents received. The overall results were as follows:

**Table 14.7: Satisfaction with Health Services Received**

%	Strongly disagree	Disagree	Neither agree not disagree	Agree	Strongly agree
I am happy with the health services I receive	0.5	41.8	40.3	17.4	0
Healthcare services are expensive	6.5	0	21.9	67.2	4.5
Healthcare services are convenient to access	0.5	46.2	32.7	20.1	0.5
I can find the medicines I need	1.5	17.5	34.5	45.5	1.0
I can find the doctor or clinic I need	1.5	26.2	32.7	39.1	0.5
I can find information about health issues	0	33.3	30.9	35.8	0
I can find information about healthy eating	0	29.9	39.3	30.9	0

Source: Original research.

These results indicate that large proportions of people are dissatisfied with the healthcare services they receive: 42.3% are not happy, 71.7% think healthcare is expensive, and 33.3% cannot find information about health issues.

In the following analysis, these results are recalculated into mean scores, with a low of 1 (strongly disagree) to a high of 5 (strongly agree):

**Table 14.8: Analysis of Satisfaction with Health Services Received**

Mean score	Overall	Male	Female	P	Urban	Rural	P	%	%
I am happy with the health services I receive	2.75	2.68	2.85	0.324	3.04	2.60	0.000**	2.89	3.02
Healthcare services are expensive	3.70	3.68	3.73	0.854	3.65	3.74	0.049*	3.63	3.63
Healthcare services are convenient to access	2.74	2.76	2.71	0.610	2.85	2.62	0.155	2.82	2.93
I can find the medicines I need	3.26	3.30	3.23	0.568	3.25	3.29	0.236	3.37	3.62
I can find the doctor or clinic I need	3.11	3.10	3.12	0.221	3.10	3.12	0.403	3.22	3.49
I can find information about health issues	3.02	3.00	3.06	0.593	3.16	2.95	0.010*	3.12	3.32
I can find information about healthy eating	3.01	2.95	3.10	0.405	3.17	2.84	0.000**	3.05	3.27

<sup>a</sup>= percentage of respondents who are not facebook users, <sup>b</sup>=percentage of respondents who are facebook users.

\* = result significant at the 0.05 level, \*\* = result significant at the 0.01 level.

Source: Original research.

It is notable that women tend to respond more positively to each of these questions than the men do, but not to the extent that the results are statistically significant. It is also noticeable that respondents with access to Facebook and the Internet have generally higher-than-average levels of satisfaction, particularly with respect to information gathering.

The urban–rural divide is again influential here, with rural respondents being significantly more likely to disagree that they are satisfied with their health services and to think such services are expensive. They are also significantly less likely to think they are able to access information about health or about healthy eating.

Respondents were next asked whether they thought there was anything that could be done to improve the health services where they live.

This is clearly a subject of importance to respondents, since as many as 34.0% responded, which is higher than is usually the case in surveys such as this. The complete list of responses is as follows:

**Table 14.9: Comments about Improving Healthcare Services**

Infrastructure should be better
Public medical check-up programme
General healthcare talk and books should be provided
Emergency healthcare services should be provided for remote areas and villages
Government should provide a doctor at every village
More updated machines and medicine should be provided in rural areas
Remote hospitals and less knowledgeable nurses should upgrade their skills
Specialist doctors are required
Health information should be easy to access in rural areas and health talks should be provided in all villages
Affordable and good quality services are important
Doctors should upgrade their skills
Doctors should visit and provide health information about cancer and how to prevent it
Public hospitals should provide more care and services for rural people. Government assistance programmes are crucial for us
Private healthcare centres should have affordable prices
Healthcare information should be available in every corner of villages
There should be more doctors and nurses in remote areas
My daughter passed away because of a hospital. Districts and villages should have clinics
Rural people have less knowledge about health
Every village should have a doctor
Government healthcare services are very weak
Healthcare service providers do not want to come to rural areas. As a result, people in rural areas have less knowledge about health problems and diseases

## E-commerce Connectivity in ASEAN

Rural health development programmes should be established

Convenient and affordable services should be provided in rural areas. We have to go to the city if something happens

Healthcare services are very expensive compared to our income

Women's healthcare and awareness campaigns should be established in villages

There should be a mindset change first

Motivation is important for healthcare providers. Training and support materials should be sufficient to provide good service to the public.

Recruit more doctors and nurses

Full support to healthcare staff is important

Mutual understanding should develop between service providers and service receivers

Less expensive labs are necessary

Less expensive health screening packages should be available for people with normal income

Patient and professional nurses and doctors are important everywhere

Healthcare support services should be provided by the government to the public for free

Health awareness campaigns should be set up

Faster and cheaper healthcare services should be provided by the government to every corner of the country

Medical education should be changed and updated

It is important to upgrade to special care for elderly people

Professional healthcare providers are important in every place

Background of healthcare education should change

More up to date help from healthcare services is necessary in every part of the country

Faster service should be provided in public hospitals and public hospitals should provide affordably priced services for normal income families

Talented doctors are required

Government should provide up to date machines and overseas training for healthcare providers

More public healthcare staff should be appointed in hospitals and clinics

Public health service should be improved

Government hospitals should be improved for the public

Updated websites are required

More up to date machines and training are required

24 hour public healthcare services should be available in every township

Health services should be strongly reliable

Warm and enthusiastic service from mostly nurses, who give a hand rather than wait for money

Clinic opening times are fixed

Whenever I want to see the doctor, there is no one available. So health service needs to become available 24 hours

More public health services

Time can be saved with stand-by doctors

24 hour hotline service should be set up by Healthcare Service companies (we can't always trust Internet!) that provide human engagement

Faster response hotlines are required

Patient nurses, skilful doctors and better information departments are required

I think it can be done to improve the health service but it needs to be perfect for all kinds of people

Healthcare awareness programmes should be established

Sex education should be provided for the prevention of unwanted pregnancies

There should be more private healthcare centres and poly clinics

Overseas training is important

Well trained and motivated staff should be constantly available to provide care

Pregnant women should be taken care of at any time

Need more practical training in healthcare field

Not enough medicine in government hospital

Services of staff from Hospitals must improve

Should use Burmese language in hospital (or) clinic

We need mobile clinic in our village

Source: Original research.

It is evident from this list that the following factors are considered particularly important:

- Healthcare services of good quality should be available in all parts of the country.
- Various aspects of existing healthcare should be improved.
- Government services, in particular, should be improved. There were few comments about the private sector.

Respondents were also given the opportunity to add any other comments and six did so. However, the comments mostly echoed those made with respect to the previous question.

## 6. Discussion

Mobile telephones have flooded into Myanmar over the last few years and are now ubiquitous. Access to the Internet has been made available at a low price and, to some extent, the government trusts the people. Inevitably, there have been negative aspects, as some people have abused the privilege through hate speech and spreading false news and bigoted content. Nevertheless, access to information and a more mature attitude towards it has been spreading. The research reported on here supports the literature that argues for the benefits of spreading information. As Crome and Williams (2006: 270) wrote:

The new technologies .. in as much as they furnish cultural models which are not initially rooted in the local content but are immediately formed in view of

the broadest diffusion across the surface of the globe, provide a remarkable means of overcoming the obstacle traditional culture opposes to the recording, transfer and communication of information.

Introducing new technologies has led to social revolution that has helped sweep away social relations irrelevant in the 21st century. For example, knowledge and wisdom can no longer be claimed to be the preserve of the elderly and the wealthy. Just about anyone can obtain access to information databases, interact with them, and even contribute to them. This remains innovative and important in Myanmar.

Information access is empowering as the results here demonstrate. People who have access to Facebook and the Internet are able to make more informed decisions about their healthcare. Empowerment should contribute to democratising society, although that will take time and false steps will be made along the way. People with raised expectations may be disappointed but they can help create the conditions under which better healthcare services can be provided.

Although there are some methodological problems associated with conducting research of this sort, the consistency of the results and the credible patterns of responses together suggest that the approach can work well. It would be helpful if the research team included members who can speak ethnic-minority languages.

Since mobile telecommunications have only recently become predominant in Myanmar, research into their use is also new and this research contributes to knowledge on the topic.

## 7. Conclusion

This chapter describes research on the use of mobile telecommunications and the Internet in Myanmar with respect to healthcare services. Both quantitative and qualitative methods were used to obtain data. A consistent and coherent pattern of results was obtained despite the methodological problems of gaining access to all members of the population and the limitations of time and space.

Mobile telephones have become ubiquitous in Myanmar and market penetration has risen from a few percent to nearly 100% within a few years. Along with telephones, online applications have also become widely available. In part because of the way services have been marketed, most people seem to see Facebook as either not being part of the Internet or as the whole of the Internet. This poses problems and places additional responsibility on Facebook management when it comes to contentious issues and problems associated with division and hate speech.

The use of mobile telecommunications to search for healthcare information and services is still at its formative stage. There is scope for stakeholders to help mould people's use of these tools and to promote healthcare information to the public.

## References

- Agamben, G. (1998), *Homo Sacer: Sovereign Power and Bare Life*, translated by Daniel Heller-Roazen. Stanford, CA: Stanford University Press.
- Ampornstira, F. (2016), 'Foreign Direct Investment in Cambodia's Telecommunications Industry', *Nepalese Journal of Management Science and Research*, 1(1), pp.55–64.
- Audjarint, W. (2017), 'FB 'Likes' Can Constitute Criminal Conspiracy in Eyes of Law Enforcers', *The Nation*, 12 May. <http://www.nationmultimedia.com/news/national/30314936> (accessed 1 September 2018).
- Crome, K. and J. Williams (eds.) (2006), *The Lyotard Reader and Guide*. New York, NY: Columbia University Press.
- Hynes, C. (2017), 'Internet Use Is on the Rise in Myanmar, but Better Options Are Needed', *Forbes*, 22 September. <https://www.forbes.com/sites/chynes/2017/09/22/Internet-use-is-on-the-rise-in-myanmar-but-better-options-are-needed/#41703c6a448e> (accessed 1 September 2018).
- Khaing, M.M. and J. Walsh (2016), 'Impact of Mobile Phones on Rural Livelihoods Assets in Rural Myanmar: A Study of Patheingyi Township and Madaya Township, Mandalay Division', *International Review of Management and Development Sciences*, 1(1), pp.38–65.
- Latt, N.N. et al. (2016), 'Healthcare in Myanmar', *Nagoya Journal of Medical Science*, 78(2), pp.123–34.
- Maung, N.L.Y. and J. Walsh (2014), 'Decision Factors in Medical Tourism: Evidence from Burmese Visitors to a Hospital in Bangkok', *Journal of Economics and Behavioral Studies*, 6(2), pp.84–94.
- Mizzima (2017), 'Ooredoo to Launch Mobile Money Services in Myanmar', 27 April. <http://www.mizzima.com/business-domestic/ooredoo-launch-mobile-money-services-myanmar> (accessed 1 September 2018).
- Walsh, J. and P. Lovichakorntikul (2015), 'Thitsar-Yazar Hospital: A Case Study of Mandalay's Economic and Social Change', *The Myanmar Journal*, 2(1), pp.1–10.
- World Bank (2019), *World Development Indicators 2019*. Washington, DC: World Bank.