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### **Domestication of Smartphones Among Adolescents in Brunei Darussalam**

Amin Diyani Ahad, School of Business & Economics, Universiti Brunei Darussalam, Bandar Seri Begawan, Brunei Darussalam  
Muhammad Anshari, School of Business & Economics, Universiti Brunei Darussalam, Bandar Seri Begawan, Brunei Darussalam  
Abdur Razzaq, Universitas Islam Negeri Raden Fatah, Palembang, Indonesia

#### **ABSTRACT**

This article describes how smartphones have converged into multifunctional personal devices. Smartphones are equipped with features such as Internet access, cameras (pictures and videos) and MP3 players. While a majority of previous research investigated the use and effects of mobile phones and young people, these studies focused on the Western context. A qualitative research method was used to investigate the research questions. Specifically, focus groups and in-depth interviews were used to collect data. Nevertheless, while a growing number of studies has investigated mobile phone use by teenagers in non-western countries, there is little research on smartphone uses and their implications to teenagers in an Islamic context. This article examines the uses of smartphones by, and their implications to, Bruneian teenagers. The research seeks to map and understand the complex forces that influence and challenge the socio-cultural values and religious beliefs of teenagers in a non-Western, Malay, Islamic society such as Brunei.

#### **KEYWORDS**

Brunei Darussalam, Domestication of Media & Technology, Smartphone, Value

#### **INTRODUCTION**

With rapid technological advancements, from a mere mobile talking device, smartphones have converged into a multi-purpose communication medium with progressively improved features, multiple functions and latest applications (e.g. mobile Internet, mobile chat, social-networking sites, etc.). In general, research suggests that young people today have grown up with smartphones. They are commonly regarded as the most enthusiastic and extensive users of new technologies; they are quick to adopt; and they are creative, flexible, and ubiquitously connected to the world (Ito, 2005; Grinter, Goggin, 2006; Ahad & Anshari, 2017). Statistics show that an accelerated growth of mobile phone use is highest among young people or youths. They consume more media technologies and in many different ways (Hill-Wood, et al., 2009). Hence, it becomes apparent that smartphones are commonplace and most influential in young peoples' everyday lives. In relation to this, a majority of studies have pointed to the complex issues surrounding mobile phone use (or non-use) either in the West (Green, 2003; Kaseniemi, 2003; Campbell, 2005; Weerakkody, 2008; Walsh, 2009) or in the non-western context (Myraki, 2005; Ibrahim, 2008; Hijaz-Omari & Ribak, 2008); either for good or bad, or as opportunities or threats (Mackay, 1997; Weerakkody, 2008; Ibrahim, 2008).

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# Domestication of Smartphones Among Adolescents in Brunei Darussalam

*by* Abdur Razzaq

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# Domestication of Smartphones Among Adolescents in Brunei Darussalam

Annie Dayani Ahad, School of Business & Economics, <sup>1</sup>Universiti Brunei Darussalam, Bandar Seri Begawan, Brunei Darussalam

Muhammad Anshari, School of Business & Economics, <sup>1</sup>Universiti Brunei Darussalam, Bandar Seri Begawan, Brunei Darussalam

<sup>8</sup>Abdur Razzaq, Universitas Islam Negeri Raden Fatah, Palembang, Indonesia

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## INTRODUCTION

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These studies have demonstrated that smartphones are widely adopted by young people or youths as they allowed better accessibility, mobility and emancipation; mobile phones also freed them from authoritative figures, particularly parents. But what does all this entail? Smartphones have also been associated with the ways teenagers communicate or micro-coordinate. They are also used for a variety of entertainment purposes and for sharing information (Green & Singleton, 2007; Wu, 2008; Hill-Wood et al., 2009). In addition, there are concerns about the impact of smartphone use such as poor academic performance (Campbell, 2005), smartphone addiction or dependency (Aoki & Downes, 2003; Walsh, 2009), and exposure to pornographic content (Ibahrine, 2008; Al-Rasheed, 2007; Rodzi, 2009; Chew, 2009). All these are associated with the prevalent use of mobile phones by young people.

This study has theoretical significance. One of the key contributions of the study is that it extends our understanding of the interaction between young people and mobile phones. It further addresses previous research on young people and mobile phones and the relevant issues surrounding them, in a continuously changing global environment. Generally, Jackson et al. (2006) reported that the nature of children's technology-based activities, for instance, is unclear because there are a limited number of studies and hardly any measures of actual use (compared to self-reported use). Also unclear are the relationships between young people's socio-demographic characteristics and technology use, either in the United States or elsewhere (Jackson et al., 2006).

The research questions examined in this study were: What are the intended and unintended consequences of smartphone use by Bruneian teenagers? To what extent does the use of smartphones by Bruneian teenagers uphold or challenge their socio-cultural values, their religious beliefs and their cultural identity?

## LITERATURE REVIEWS

Statistics show that in 2007, according to the Southeast Asia Mobile Communications and Mobile Data report (cited in Price 2008), Brunei's mobile penetration rate was one of the highest in South-east Asia, at approximately 114 per cent or 0.4 million subscribers in total. Indeed, this figure continues to rise and there is widespread use of mobile phones, particularly among young Bruneians, just as in any other country. According to Han (2009), there is increasing demand for mobile phones among the younger generations. Additionally, mobile phones which boast third-generation (3G) capabilities such as mobile Internet, mobile computing, and mobile chat, among others (e.g. text, call, music and camera or video) are popular among Bruneian teenagers (Han, 2009)

According to Han (2007), both teachers and students in Brunei admitted that mobile phones constitute a major problem at school as many students tend to abuse them, particularly in class, and this tends to affect their studies. An English teacher from a public school reported in Han's (2007) article said some students were caught using mobile phones in class to chat, to play music and games. The report also noted that students used their mobile phones at school for the purpose of 'showing off'. A teacher also said that parents trusted their children too much that they became less concerned about the negative implications of mobile phones such as poor academic performance.

Another concern involving mobile phone use at school is mobile phone thefts (Han, 2007). During an Islamic Religious Knowledge Teachers' forum in Brunei, Roslan (2008) reported that despite schools providing telephones for students' use in case of emergency, 88 per cent of Bruneian students still took their mobile phones to school. In another report in 2009 by Brunei Times, young children were seen to be using mobile phones as most parents said they were necessary. For example, mobile phone was seen as essential for security, as the need arose and for convenience (Brunei Times, 2009).

There are worrying trends in regard to the younger generation misusing the Internet. Their study found that about 79 per cent of the Brunei population were online and the country had the highest Facebook penetration in Asia. At the same time, the report noted that international chat-room platforms were popular with young Bruneians because they used the platforms to meet strangers, for dating or even to offer sexual services. In March 2012, the Bruneian government rolled out new legislations concerning the Internet. The laws were designed to protect the young and vulnerable from using technology to pursue deviant behaviours such as child pornography, prostitution, and sexual activities with minors, sexual grooming, voyeurism and sexual exploitations (Bandial, 2012). In 2012, at a Child Online Protection workshop in Brunei, major concerns were expressed about misuse of personal information, personal address or location and also sexual images on social networking sites such as Facebook. Piri (2011) reported a study by Brunei Women and Child Abuse Investigation Unit, which revealed that 100 per cent of underage rape and unlawful carnal knowledge cases were caused by online meetings (excluding cases of abusing modesty and incest). The study showed a number of the perpetrators were children and some victims said they sought partners online via chat-rooms and Facebook, which led to their meeting with strangers and consenting to sexual acts. It must be noted that further research is needed because other relevant factors may also be involved behind the sexual assaults.

In light of all these, this study examined how Bruneian teenagers consumed or appropriated mobile phones, including the unintended consequences of mobile phone use by the teenagers.

## **DOMESTICATION OF MEDIA AND TECHNOLOGY**

The first theoretical framework used in this study is the domestication theory. Domestication focuses on the social relationships surrounding information communication technologies (ICTs). It involves a process of understanding the complexity of how ICTs are experienced in everyday life. As ICTs are acquired (consumed) in the public and private spheres, domestication investigates their symbolic meanings, the interactions and negotiations that take place between individuals within the wider social networks (Silverstone and Hirsch, 1994; Haddon, 2004, 2006).

Domestication has been described as 'taming the untamed' (Berker et. al., 2006). It provides valuable insights into how ICTs fit into the structures and routines of individuals' daily lives, those who negotiate their use or non-use of ICTs in association with others within their wider social environment. While it has been criticized for neglecting the social processes of production and some aspects of the technological content (Bakardjieva, 2005), domestication's benefits lie in its emphasis on several points. These include the recognition that technology is evolutionary, doubly articulated as object symbolized and as media with content; the focus on the user (as creative individuals) involving a non-linear, two-way process into how ICTs are integrated into their lives through appropriation, objectification, incorporation and conversion. As pointed out by Lie and Sorensen (1996, p.2), 'we adopt and adapt technologies, we shape and are shaped by them'. Domestication theory is thus useful to investigate the adoption, use and implication of mobile phone use by teenagers in the Bruneian context.

While past research studied the domestication of ICT in domestic settings such as the household (Silverstone, 1994; Bakardjieva, 2006), Silverstone (1994) argued the need to consider domestication outside this context, such as in the workplace or in educational institutions (e.g., Pierson, 2006; Hynes & Rommes, 2006). In any case, according to Haddon (1994), it is relatively important to also consider these contexts in the wider social environment, such as in the entire society or in different types of society (e.g., Norwegian society, in Skog, 2002; Chinese families, in Lim, 2006). Furthermore, domestication has been applied to investigate nuclear families, single-parent households, middle-class households, teleworkers, young elderly, and young adults, even groups of individuals; on various types of ICTs in the home or beyond, such as television, personal computers, the Internet and mobile phones (Anshari, et.al, 2016, 2017; Low & Anshari, 2013). Few studies have been published, (Haddon, 2007; Hijazi-Omari & Ribak, 2008) to the best of this researcher's knowledge, investigated the prevalent



convergence of technology known as 'mobile media', or mobile phone use and its implications, particularly among teenagers who represent the largest and most active group of the mobile phone population (Green & Singleton, 2007). Therefore, this study extends prior research into these areas through an understanding of the implications of mobile phone use by teenagers in an Islamic, non-western society such as Brunei Darussalam.

### Demographic Profile

Brunei Darussalam is located in South East Asia, on the island of Borneo. It has a land area of 5,765 sq. km, with an estimated population of about 406,200 in 2009 (Brunei Darussalam Newsletter; Information Department, n.d.), consisting predominantly of ethnic Malays (67%) and Chinese (15%). There are also Indians (12%) and other indigenous groups such as the Muruts, Dusuns and Ibans (6%). The official languages are Malay, English and Chinese, and the official religion is Islam, but Buddhism and Christianity are also practised. Brunei has four districts; namely the Brunei-Muara, Belait, Tutong and Temburong. Bandar Seri Begawan, the capital city of Brunei, is most densely populated and located in the Brunei-Muara district (Brunei Press, n.d.).

Brunei's Political and Legal Philosophy is Malay Islamic Monarchy. Brunei Darussalam was under British Protectorate from 1889 till it gained its full independence in 1984. His Majesty Sultan Haji Hassanal Bolkiah is the Sultan of Brunei. He is the head of state and also head of government of Brunei's Malay Islamic Monarchy or 'Melayu Islam Beraja' (MIB). The Malay Islamic Monarchy is the country's distinctive ideology which guides its life and government administration, "promoting Islam as the state religion and monarchical rule as the sole governing system, upholding the rights and privileges of the Brunei Malay race" (U.S Department of State, 2008). Apart from the Shari'a (Islamic law), applicable only to Muslims in the case of divorce, inheritance or sexual crimes (immoral activities such as adultery, close proximity between sexes in secluded areas, or illicit sex resulting in unlawful pregnancy), Bruneian judicial system practices the Secular law, originating from English common law (U.S Department of State, 2008). Meanwhile in Brunei, the Brunei government also prohibits the sale of alcohol.

In term of economic development, Brunei's main exports include crude oil, liquefied natural gas and petroleum products, with per capita gross domestic product (GDP) over US\$36,000 (International Monetary Fund, 2009). Brunei government is also keen to diversify its economy through various aspects, particularly by strengthening its tourism and banking sectors. Following this, Brunei has a vision in human resources building; it focuses on areas such as ICT literacy and full ICT integration in education, skilled training towards a sustainable and qualified ICT generation and the electronic government realization (Brunei Press, n.d.)

While, Telekom Brunei Berhad (TelBru), DST Communications (DSTCom) and Progresif are the three leading telecommunications service providers in Brunei. In 2007, the approximate total number of Internet users in Brunei was 45 per cent or 180,000 (U.S Department of State, 2008). Bruneians can opt to use broadband, wireless, third-generation (3G) mobile or dial-up Internet connections. According to the 2007 Southeast Asia Mobile Communications and Mobile Data report (cited in Price 2008), Brunei's mobile penetration rate is one of the highest in South-east Asia, at about 114 per cent. Established in 2003, the Authority for Info-communications Technology Industry (AITI) is a statutory body responsible for telecommunications and radio communications regulation and ICT industry development (AITI Brunei, n.d.). AITI and the Attorney-General Chambers have also been appointed in 2006 to advise Internet service providers, who are assumed to monitor any content contrary to public interest, national harmony, social morals, traditional and Islamic values through its national Malay Islamic Monarchy ideology. (U.S Department of State, 2008).

The Bruneian values, attitudes and general behaviour are commonly influenced by the Malay Islamic Monarchy, the country's distinctive ideology. The traditional socio-cultural values and attitudes are historically shaped by the Bruneian identity, being a Malay (or Chinese and other indigenous ethnics), and Muslim (or Buddhist, Christian or 'Free-thinker') under the Sultanate's Monarchy. Some

of these values and attitudes include respect for the elderly, good manners, honesty, trustworthiness, hardwork and obedience to religious practices and obligations to Allah (Brunei Press, n.d.).

## **METHODS**

This section focuses on the relevance of these research strategies to achieve the research objective. It includes a description of the sampling procedure and data analysis techniques used during the study. The section later concludes with the justifications for the triangulation of methods. The study explored how Bruneian teenagers use (domesticate) their mobile phones, including their motivations or frustrations in using their mobile phones. Teachers and parents were included in this study to enable the researcher to investigate and understand their perspectives on teenagers' use of mobile phones in public places (schools) and in private spaces (homes). A total of 143 Bruneian teenagers between the ages of 13 and 19, involving males and females, across the country were recruited. It is convenience sampling technique by selecting participants because of ease of their volunteering, their availability and easy access. The study deployed convenience sampling because geographically between the states in Brunei is in close proximity. The teenagers are easy to reach and easy for researchers to contact and, therefore, convenient in our research. In addition, convenience sampling offers speed at which data can be collected and contact individuals that are randomly selected to be a part of the focus group and in-depth study. The teenagers were selected because they represented the largest percentage of the Brunei population and also because they owned mobile phones (Salim, 2008; Han, 2009). Furthermore, the teenage years represented an important transition period between childhood and adulthood (Richter, 2006). This provided an opportunity for the teenagers to be heard, to narrate how they negotiated their experiences with mobile phones individually or collectively, which could be different from the adults (Kaufman et al., 2002; Green & Hill, 2005). Focus groups and in-depth interviews were used in this study to investigate the Bruneian teenagers' use of mobile phones and the implications of using mobile phones. We divided participants into some groups with similar educational backgrounds and genders to help them share ideas more easily. The session each group was not last more than around two hours to avoid participants become tired and lose interest after that time. Questions were open-ended to allow participants good scope for discussion. The group started with introductory questions that address the general topic. The moderator posed questions that move from the general to the specific. Then, ending questions were used to get the participants to summarize their opinions.

## **FINDINGS AND DISCUSSION**

This section presents the results of focus group discussions with Bruneian teenagers. It illustrates the processes through which the teenagers decide to appropriate or reject mobile phones, the teenagers' mobile phone usage patterns, rules and regulations for mobile phone use, and implications of mobile phones in the everyday lives of the teenagers. The interview questions explored issues such as when the teenagers first owned their mobile phones, the number of mobile phones they owned, how and why they adopted or rejected mobile phones, the significant factors involved in this process, how they used mobile phones (e.g. at home, in school), as well as what they perceived as the implications of using mobile phones in the Bruneian context?

### **Mobile Phone Ownership: Adopters and Users**

The discussions showed that 127 of the 143 Bruneian teenagers who participated in the focus groups said they owned mobile phones. They also said their parents bought the mobile phones for them or made the decision whether or not they should have mobile phones. In 2001, the widespread use of mobile phones in Brunei had begun and as the years passed, the prices of mobile phones started to drop. Consequently, it was not surprising to note the prevalent use of mobile phones by the teenagers.

In Brunei, parents have three options when they buy mobile phones. They can do so by cash, by credit or through a customer product loan.

When the teenagers were asked when they first owned their mobile phones, in general, those teenagers who owned mobile phones reported they acquired their first mobile phones at the age of 11 or 12 or 13, specifically between Year 6 and Year 7 of school. In Brunei, a student could be 11, 12 or 13 years old in Year 6 or 7, depending on the age (i.e., 3 or 4 years old) when they first start school. However, there were 10 teenagers who said they first owned their mobile phones at the age of 10 or less, between Year 3 and Year 5 of school. These findings indicate that Bruneian parents have no objection to buying mobile phones for their children. The discussions revealed that in the past two to eight years, the teenagers who participated in the focus groups owned at least one or more mobile phones. More than half (127) of the students said they owned their third or fifth mobile phone. They said this was because they had experienced a series of 'broken' mobile phones (as they refer to it; e.g. keypad and screen faults, camera glitch, switch button problem). There were some other teenagers who admitted that, owing to technological developments and boredom, new mobile phone models in the market seem to attract their attention because the new models were 'advanced,' 'attractive,' 'fun' and 'cooler.' This raises an important question about how the teenagers actually use their mobile phones.

The study revealed that owing mobile phones for teenagers are considered as appropriate since Bruneian parents have no objection to buying mobile phones for their children. Thus, appropriation can become dependent on the individuals who ultimately make the decision to acquire mobile phones.

### **Factors Contributing to Mobile Phone Adoption and Use**

When asked how and why they adopted mobile phones, they said they were given their mobile phones because the phones were incorporated with practical benefits such as: convenience, transport micro-coordination (literally permits them to organize their daily activities, particularly in terms of transport arrangements to and from school), safety and emergency, gifts for good academic performance, as birthday gifts, as giveaways for no particular reason, peer pressure, and something inherited from siblings or handed over. Conversion, as the opposite of appropriation, is a process where technologies (meanings and uses) are converted or re-enter the public (outside) from the private (domestic) sphere. Mobile phones convers a message often with an objective of shaping a social status or social perception to the outside world.

Domestication in that regard uncovers the meanings and practices of mobile phones by teenagers, the patterns of space and time, as well as the wider social networks. Domestication theory therefore is a useful to understand a user's acceptance of mobile phones. Domestication becomes the central framework of this research. Mobile phones as a media and its contents are objectified in the individual's group or household discussion. Green (2002, p. 45) refers to this as the practice of locating mobile phone in a specified domestic space or environment, involving rearrangements of other objects. In addition, the incorporation phase of domestication looks at how the mobile phones are appropriately adjusted to teenagers' everyday life and routines.

### **Different Contexts of Mobile Phone Use**

There are several types of uses identified by the teenagers. These are classified into four categories: social networking; entertainment and personal; communication; and education. This study also identified how teenagers use their mobile phones at home, at school and in other public places.

When asked to explain how they use their mobile phones, the teenagers said their major use was to access the social networking site, 'Facebook' & WhatsApp. They also mentioned 'Twitter' but they use 'Facebook' or 'WhatsApp' more frequently. More than half of the teenagers said they were active social networking who constantly connect, chat or exchange messages with their friends, partners and families. In another focus group discussion, a teenage boy (School 2, Student Group1) reported



that an early morning routine was to access his social networking account: to chat, check and reply inbox messages. According to him, these social networking activities keep him awake and energetic.

Another popular use of mobile phones identified by Bruneian teenagers who participated in the focus groups was entertainment. The students frequently mentioned playing games and listening to music as two of the most common uses of their mobile phones. Often, the teenagers said they downloaded their favorite music or MP3 (Media Player 3) songs to their mobile phones. These downloaded songs were then set to the mobile phone's ringtones or message tones. The teenagers also downloaded mobile games, commonly 'Tibia', where they can play as well as chat with other game players. Other downloadable items were mobile themes (for their mobile phone display images) such as images of favorite artistes or idols and images of their hobbies (e.g. cars, scenes, cartoons). Additionally, the teenagers said they were also interested in browsing the Internet through their mobile phones for leisure activities such as YouTube-ing, watching music video, and searching for recent news, sports, hobbies, drama and favorite artists.

Although the teenagers used their mobile phones for accessing social networking and for entertainment purposes, they also described the functional use of their mobile phones as alarm clocks, organizers, reminders and as a device to record memories by taking pictures and videos. Although the teenagers used mobile phones as reminders or organizers, it did not translate into action, nor did it necessarily result into a positive outcome. In another focus group discussion, three teenagers explained that they used their mobile phones as their 'watches'.

Mobile phones were also commonly used by the teenagers for interpersonal communication purposes. The teenagers said the mobile phones enabled them to 'contact' their networks, particularly via WhatsApp Call or texting, regardless of time, space and location. The statements demonstrate that the teenagers were 'selective' when they make or receive calls and when they send or reply to text messages, depending on the circumstances. The situations include urgent matters, if the person is their partner, parents or friends and it could also be seasonal (e.g. during school holidays, events and examinations or announcement of results).

When the teenagers were asked who bought the mobile prepaid credits, they said repeatedly 'mum', 'dad' and 'parents'. The discussions showed that the teenagers were mostly dependent on their parents for their phone credits. But the teenagers also said that, sometimes, they would buy their mobile credits through their own pocket money or allowances, often meant for daily meals at school. The teenagers said that in certain situations, their parents give them a fixed 'mobile credit' budget every month. As a result, when they run out of credit, they said their mobile phones could become useless to them. This revelation demonstrates that when the teenagers are desperate, they could use their parents' mobile phones (even friends' mobile phones, as shown below) for their communication purposes.

Another use of mobile phones was to access the Internet for the purpose of school work or information search. Though rarely mentioned throughout the discussions, this pattern of mobile phone use was particularly obvious among teenagers who said they did not have any other means of accessing the Internet except with the use of their mobile phones. The appropriate use of mobile phones for the purpose of education, as an alternative learning tool at school, should be encouraged.

## DISCUSSION

In domestication theory, information and communication technologies (ICTs) are involved in every aspect of the following four processes: appropriation, objectification, incorporation and conversion (Silverstone, Hirsch and Morley, 1994, p. 21; Figure 1). These processes of domestication investigate the integration of new technologies into the everyday life of an individual or group of individuals: from the moment the technologies are appropriated into the private space from the public sphere, to the moment where the technologies' meanings and practices are continuously renegotiated in the process, or re-enters the public sphere from the private space. Green (2002, p. 43) argues that

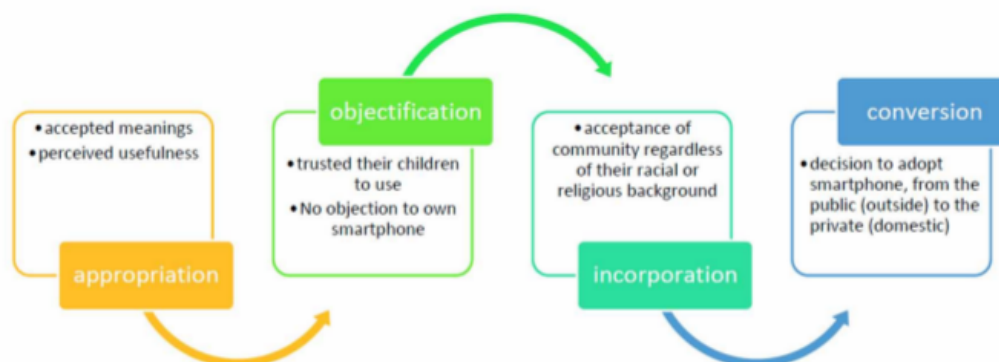
the domestication process is a multi-stage process where “as technology is domesticated within the household, the household is correspondingly technologized”. Details of each of these processes are elaborated in subsequent paragraphs.

In relation to the adoption of mobile phones by Bruneian teenagers, this study found that one of the important factors that facilitate or hinder the use of mobile phones was the teenagers’ parents and their attitudes toward mobile phones. This study found that parents created their own meanings of mobile phones (e.g. as necessities, as trends, as gifts) and how access (such as affordability) and perceived usefulness (such as for convenience in communication, safety and emergency) were equally crucial to mobile phone adoption. This conforms to the appropriation process of domesticating technologies where, according to Pierson (2006), the individuals’ creative or accepted meanings of the technologies as well as access and perceived usefulness of the technologies are crucial before any appropriation can occur.

Nevertheless, while most parents said they had no objection to buying mobile phones for their children, some others said they would not allow their children to own mobile phones. Thus, the ownership of mobile phone therefore depends on the individual parent who ultimately makes the decision whether or not to allow their children to adopt or use a technology (Green, 2002). However, while domestication theory argues this point, the appropriation of mobile phones can also be dependent on other individuals, such as an ‘aunt’ in the case of one teenager in this study. This finding is somewhat similar to previous studies (e.g. Hijazi-Omari & Ribak, 2008) in which it was reported in 2003 that Palestinian girls in Israel owned mobile phones as a symbol of ‘having a boyfriend’ or as a sign of a romantic relationship. Thus, the appropriation of mobile phones was significantly dependent on the Palestinian girls’ ‘partner’ or ‘boyfriend’, not on their parents or themselves. This situation was particularly inevitable due to the conservative, strict Muslim parents who controlled their daughters’ behaviour, as well as who rejected and perceived the mobile phone as a technology that can cause liberalization effects. In Brunei, there are also strict Muslim parents. However, this study found that a majority of the parents, regardless of their racial or religious background, allowed their teenage children to own mobile phones despite their concerns over the negative influence that mobile phones might have on the children. A majority of parents in this study reported that they trusted their teenage children to use their mobile phones in appropriate and responsible ways.

Appropriation implies the process where an object or technology is acquired and appropriated upon ownership and use by an individual or the household. It involves the individual’s decision to adopt or not to adopt the technology, from the public (outside) to the private (domestic) sphere (Green,

Figure 1. Mobile phone usage in domestication theory



2002) or that formal to moral economy transfer where commodity turns into object (Silverstone, 1994, p. 22). Through 'commodification', ICTs obtain their public meanings, the material and symbolic meanings from relevant industries and commercial networks. These in turn depend on the individual who will similarly construct their own creative ICT meanings but 'access' to the new technologies and their perceived usefulness are also crucial before any appropriation can occur (Pierson, 2006, p. 211). Hyness and Rommes (2006, p. 128) argue that appropriation can only occur when individuals have accepted the public meanings of the new technologies and transformed them into their own objects of desire (or non-desirable), which some translate into the decision to appropriate while some don't see the relevance to their lives. Appropriation thus can become dependent on the individuals who ultimately make the decision to acquire the new technologies.

Haddon (2006) further describes how domestication processes have in fact also included the moment even before technology gets appropriated, where primary discussion occurs about the decision to acquire the technology or not. This perspective fundamentally examines the changing relationships of the individual with ICT in the long run. Domestication in that regard is an on-going process, not just a one-off event (Haddon, 2006). It is a theoretical framework that uncovers the meanings and practices of technology by individuals, the patterns of space and time, as well as the wider social networks. Domestication theory therefore is a useful, non-linear theoretical framework to understand an individual's acceptance, usage or rejection of ICTs.

Another valuable dimension of domestication is that it recognizes technology not just as an object being symbolized but also as a media that carries with it functional values, roles and meanings. Technologies are thus 'doubly articulated' (Silverstone and Hirsch, 1994) carrying public meanings into the private realm of the household (Hartmann, 2006). This implies a complex meaning-making process when consuming technologies. It is thus important to note that the type of research methods adopted should be critically justified in order to investigate this complexity of technology or media in terms of both content and context. For example, while quantitative research provides useful development and behavior trends, qualitative research studies reveal even valuable or 'differentiated' information (Hartmann, 2006). An analysis of these issues has been presented in the research methodology section. Thus, in support to Green's (2002) argument, this study also demonstrates that in a multi-stage process of domestication, not only the household or home is technologised or technologically affected, but the institutions such as the schools was also technologised or technologically affected.

### Symbol of Status

In relation to the implications of mobile phone use for communication purposes, this study is also in agreement with earlier studies (Geser, 2006; Oksman & Rautiainen, 2002; Ling & Yttri, 2002; Kasesniemi & Rautiainen, 2002; Yoon, 2003; Hijazi-Omari & Ribak, 2008) which found that mobile phones helped to strengthen, maintain and extend social and romantic relationships. Indeed, this particular finding is consistent with Boneva et al.'s (2006) study, which found that mobile phones allowed a private and personal space to socialise in the confinement of people's own time. This study found that while the teenagers used their mobile phones wherever and whenever at home, either in the family room, or in front of their parents, however, some female teenagers said they would be more comfortable using their mobile phones in their own space, for example, their bedroom, or anywhere beyond their parents' knowledge. This highlights how similar young people use their mobile phones for emancipation, to communicate with peers without parents' knowledge or control (Green, 2001; Skog, 2002; Ling, 2004; Taylor & Harper, 2002; Oksman & Rautiainen, 2003; Miyaki, 2005; Ito, 2005; Ling & Yttri, 2006; Ibahrine, 2008; Hijazi-Omari & Ribak, 2008; Karim, et al., 2010; Kumjonmenukul, 2011). Similar to Ito (2005), like Japanese parents, Bruneian parents do not allow romantic relationships among school children, although some parents do. But mobile phones provide the means to communicate between partners, without their parents or siblings monitoring.

Overall, this study validates the usefulness of domestication theory as a theoretical approach for understanding the complexity of everyday life and technology's place within its dynamics, rituals,



rules, routines and patterns (Berker et al., 2006, p. 1). However, this study also corroborates with the findings of Hartmann (2006) and Ward (2006), where in negotiating technological use or non-use, it is often not without problems or challenges. The results of this study also point to what Silverstone's (cited in Lally, 2000) and Haddon (2004) described, that domestication as a process involves making technology, in this case the mobile phones, on the teenagers' own rule or power. As evidenced, some teenagers, particularly among boys who admitted how they use mobile phones to watch, distribute and record sexually explicit contents, thus making technology to their own rules (needs or desires) or power (abilities) which contradicts their religious beliefs and practices. However, in contrast, this negotiation does not necessarily signify the teenagers' identities as they claimed that they are still Bruneian Malays and Muslims. The results thus revealed that the implications of mobile phone use have thus challenged the teenagers' own social-cultural values and religious beliefs and practices. Domestication is indeed a user-centred concept used to focus on Bruneian teenagers in this study and their use of mobile phones at home and at school. This supports Bakardjieva's (2006) and Silverstone's (2006) arguments.

While this study confirms previous findings in the literature on domestication theory in terms of how the mobile phone as a technology represents teenagers' status, in certain cases, some teenagers said mobile phones was not necessarily associated with one's status. For example, urban teenagers reported how there could be many factors that must be considered before making assumptions about one's status such as what they wear, including where or how they bought the mobile phones. This study also contradicts in terms of how domestication is placing technology such as the mobile phones into rituals and routines, because in this study, the teenagers also used their mobile phones in unconventional ways such as the use of SMS messages in short abbreviations, with 'emoticons' or emotions, the use of mobile phones as watches and also the use of mobile phones for making miss calls associated with codes.

## CONCLUSION

The theoretical frameworks of this thesis is domestication, which focuses on understanding the complexity of teenagers and their use of mobile phones, as well as their interactions and negotiations between them, particularly within the wider social networks (Silverstone and Hirsch, 1994; Haddon, 2004). The findings of this study extend prior research into these areas through an understanding of the uses of mobile phones by Bruneian teenagers in a Malay, Islamic society. The findings of this study have a number of important implications for the theoretical frameworks of domestication. The results of this study provide a new understanding of the individuals involved in making the ultimate decision to adopt or not to adopt technology for young people. This study has shown that in the process of domesticating mobile phones by Bruneian teenagers, the use of the technology by the teenagers depends on the parents' willingness to permit the teenagers to own and adopt mobile phones.

## REFERENCES

- Ahad, A. D., & Anshari, M. (2017). Smartphone habits among youth: Uses and gratification theory. *Journal of Cyber Behavior, Psychology and Learning*, 7(1), 65–75. doi:10.4018/IJCBPL.2017010105
- Al-Rasheed, A. (2007, April 25). Porn dominates Saudi mobile use. *BBC News*. Retrieved from <http://news.bbc.co.uk/2/hi/6592123.stm>
- Anshari, M., Alas, Y., Sabtu, N. I., & Yunus, N. (2016). A Survey Study of Smartphones Behavior in Brunei: A Proposal of Modelling Big Data Strategies. *International Journal of Cyber Behavior, Psychology and Learning*, 6(1), 60–72. doi:10.4018/IJCBPL.2016010104
- Anshari, M., Almunawar, M. N., Shahrill, M., Wicaksono, D. K., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference? *Education and Information Technologies*, 22(6), 3063–3079. doi:10.1007/s10639-017-9572-7
- Aoki, K., & Downes, E. J. (2003). An analysis of young people's use of and attitudes toward cell phones. *Telematics and Informatics*, 20(4), 349–364. doi:10.1016/S0736-5853(03)00018-2
- Bakardjieva, M. (2005). *Internet Society: The internet in everyday life*. London: Sage Publications.
- Bakardjieva, M. (2006). Domestication running wild. From the moral economy of the household to the mores of a culture. In T. Berker, M. Hartmann, W. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 62–78). London: Open University Press.
- Bandial, Q. A. (2012, December 26). Nod for new laws to better protect public. *The Brunei Times*. Retrieved from <http://www.bt.com.bn/news-national/2012/12/26/nod-new-laws-better-protect-public>
- Berker, T., Hartmann, M., Punie, W., & Ward, K. (2006). *Domestication of media and technology*. London: Open University Press.
- Boneva, B., Quinn, A., Kraut, R., Kiesler, S., & Shklovski, I. (2006). Teenage communication in the instant messaging era. In R. Kraut, M. Brynin, & S. Kiesler (Eds.), *Computers, phones and the internet: Domesticating*. Brunei Press. (n.d.) *About Brunei*. Retrieved July 17, 2009, from <http://www.bruneipress.com.bn/brunei/brunei.html#Population>
- Campbell, M. A. (2005). The impact of the mobile phone on young people's social life. Retrieved September 25, 2012, from <http://eprints.qut.edu.au/3492/>
- Chew, C. (2009, September 20). In Singapore, more teens get porn via mobile phones. *The Sunday Times*. Retrieved from <http://www.techxav.com/2009/09/20/in-singapore-more-teens-get-porn-via-mobile-phones/>
- Geser, H. (2006, March). Is the cell phone undermining the social order? Understanding mobile technology from a sociological perspective. *Knowledge, Technology & Policy*, 19(1), 8–18. doi:10.1007/s12130-006-1010-x
- Goggin, G. (2006). *Cell phone culture: Mobile technology in everyday life*. New York: Routledge.
- Green, E., & Singleton, C. (2007). Mobile selves: Gender, ethnicity and mobile phones in the everyday lives of young Pakistani-British women and men. *Information Communication and Society*, 10(4), 506–527. doi:10.1080/13691180701560036
- Green, N. (2003). Outwardly Mobile: Young People and Mobile Technologies. In J. E. Katz (Ed.), *Machines that become us: The social context of personal communication technology* (pp. 201–217). New Brunswick, N.J: Transaction Publishers.
- Grinter, R. E., Palen, L., & Eldridge, M. (2006). Chatting with teenagers: Considering the place of chat technologies in teen life. *Journal of the ACM Transactions on Computer-Human Interaction*, 13(4), 423–447. doi:10.1145/1188816.1188817
- Haddon, L. (2004). *Information and communication technologies in everyday life: A concise introduction and research guide*. Oxford: Berg.
- Han, F. (2009, April 24). Rising demand for 3G mobile phones. *Brudirect.com*. Retrieved from <http://www.brudirect.com/DailyInfo/News/Archive/Apr09/24/nite22.htm>

- Hijazi-Omari, H., & Ribak, R. (2008). Playing with fire: On the domestication of the mobile phone among Palestinian teenage girls in Israel. *Information Communication and Society, 11*(2), 149–166. doi:10.1080/13691180801934099
- Hill-Wood, E., Wellington, P., & Rossi, L. (2009). *Media & Internet: How teenagers consume media*. Retrieved October 14, 2009, from <http://media.ft.com/cms/c3852b2e-6f9a-11de-bfc5-00144feabdc0.pdf>
- Hynes, D., & Rommes, E. (2006). 'Fitting the internet into our lives': IT courses for disadvantaged users. In T. Berker, M. Hartmann, W. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 125–142). London: Open University Press.
- Ibahrine, M. (2008). Mobile communication and socio-political change in the Arab world. In J. E. Katz (Ed.), *Handbook of mobile communication studies* (pp. 257–272). Cambridge: MIT Press. doi:10.7551/mitpress/9780262113120.003.0019
- Ito, M. (2005). Mobile phones, Japanese youth, and the re-placement of social contact. In R. Ling & P. E. Pedersen (Eds.), *Mobile Communications: Re-negotiation of the Social Sphere* (pp. 131–148). London: Springer-Verlag. doi:10.1007/1-84628-248-9\_9
- Jackson, L. A., Eye, A. V., Biocca, F. A., Barbatsis, G., Zhao, Y., & Fitzgerald, H. E. (2006). Children's home Internet use: Antecedents and psychological, social, and academic consequences. In R. Kraut, M. Brynin, & S. Kiesler (Eds.), *Computers, Phones, and the Internet: Domesticating Information Technology* (pp. 145–166). New York: Oxford University Press.
- Karim, N. S. A., Oyebisi, I. O., & Mahmud, M. (2010). Mobile phone appropriation of students and staff at an institution of higher learning. *Campus-Wide Information Systems, 27*(4), 263–276. doi:10.1108/10650741011073806
- Kasesniemi, E. L. (2003). *Mobile Messages: Young people and a New communication culture*. Tampere: Tampere University Press.
- Kasesniemi, E. L., & Rautiainen, P. (2002, January). Mobile culture of children and teenagers in Finland. In J. E. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, Private talk, Public performance* (pp. 170–192). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511489471.014
- Kaufman, N. H., Rizzini, I., Wilson, K., & Bush, M. (2002). The Impact of global economic, political, and social transformations on the lives of children; A framework for analysis. In N. H. Kaufman, I. Rizzini, K. Wilson, & M. Bush (Eds.), *Globalization and Children: Exploring Potentials for Enhancing Opportunities in the Lives of Children and Youth* (pp. 3–18). New York: Plenum Publishers.
- Kumjonmenukul, P. (2011). The Behavior of Young people when using mobile phones and its impact on Thai culture and lifestyle: A case study of Kalasin Municipality in Kalasin Province. *American Journal of Scientific Research, 22*, 57–64.
- Lim, S. S. (2006). From cultural to information revolution. ICT domestication by middle-class Chinese families. In T. Berker, M. Hartmann, W. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 185–201). London: Open University Press.
- Ling, R., & Yttri, B. (2002). Hyper-coordination via mobile phones in Norway. In J. E. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, Private talk, Public performance* (pp. 139–169). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511489471.013
- Low, K. C. P., & Anshari, M. (2013). Incorporating social customer relationship management in negotiation. *International Journal of Electronic Customer Relationship Management, 7*(3/4), 239–252. doi:10.1504/IJECRM.2013.060700
- Mackay, H. (1997). *Consumption and everyday life: Culture, media and identities*. London: Sage Publications.
- Miyaki, Y. (2005). *Keitai* use among Japanese Elementary and Junior High School students. In M. Ito, D. Okabe, & M. Matsuda (Eds.), *Personal, Portable, Pedestrian: Mobile phones in Japanese life* (pp. 277–299). London: MIT Press.



- Oksman, V., & Rautiainen, P. (2003). "Perhaps it is a body part": How the mobile phone became an organic part of the everyday lives of Finnish children and teenagers. In J. E. Katz (Ed.), *Machines that become us: The social context of personal communication technology* (pp. 293–308). New Brunswick, NJ: Transaction Publishers.
- Pierson, J. (2006). Domestication at work in small businesses. In T. Berker, M. Hartmann, W. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 205–223). London: Open University Press.
- Piri, S. (2011, September 6). Cases of underage sex on the rise. *The Brunei Times*. Retrieved from <http://www.bt.com.bn/news-national/2011/09/06/cases-underage-sex-rise>
- Price, J. (2008, May 8). 7.2Mbps! DST 3G 2 cool 2 blieve – K? *The Brunei Times*. Retrieved from [http://www.bt.com.bn/en/science\\_technology/2008/05/08/7\\_2mbps\\_dst\\_3g\\_2\\_cool\\_2\\_b\\_lieve\\_k](http://www.bt.com.bn/en/science_technology/2008/05/08/7_2mbps_dst_3g_2_cool_2_b_lieve_k)
- Richter, L. M. (2006). Studying adolescence. *Science. New Series.*, 312(5782), 1902–1905. PMID:16809526
- Rodzi, N. H. (2009, September 23). Hooked on phones; Malay Mail survey shows technology has got people dependent on it. *The Malay Mail*. Retrieved from <http://www.mmail.com.my/content/13906-hooked-phones>
- Roslan, H. (2008, November 18). 88 per cent of students bring mobile phones to schools. *The Brunei Times*. Retrieved from [http://www.bt.com.bn/home\\_news/2008/11/18/88\\_per\\_cent\\_of\\_students\\_bring\\_mobile\\_phones\\_to\\_schools](http://www.bt.com.bn/home_news/2008/11/18/88_per_cent_of_students_bring_mobile_phones_to_schools)
- Salim, P. (2008). *The role of mobile phones in the lives of young people in Brunei Darussalam* [Masters Thesis]. Universiti Brunei Darussalam. Retrieved from [http://202.160.7.83/cgi-bin/infoviewer/igp\\_infoviewer\\_cpe/load\\_framework?catalog\\_item\\_id=500a602e&sid=75cc4aae9b14407c4df0fd03d589083d&language=en](http://202.160.7.83/cgi-bin/infoviewer/igp_infoviewer_cpe/load_framework?catalog_item_id=500a602e&sid=75cc4aae9b14407c4df0fd03d589083d&language=en)
- Silverstone, R. (1994). *Television and everyday life*. London: Routledge. doi:10.4324/9780203358948
- Silverstone, R. (2006). Domesticating domestication: Reflections on the life of a concept. In T. Berker, M. Hartmann, W. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 229–247). London: Open University Press.
- Silverstone, R., & Hirsch, E. (1994). *Consuming technologies: Media and Information in Domestic Spaces*. London: Routledge.
- Skog, B. (2002). Mobiles and the Norwegian teen: identity, gender and class. In J. E. Katz (Ed.), *Machines that become us: The social context of personal communication technology* (pp. 201–217). New Brunswick, NJ: Transaction Publishers. doi:10.1017/CBO9780511489471.020
- Sorensen, K. H. (2006). Domestication: the enactment of technology. In T. Berker, M. Hartmann, W. Punie et al. (Eds.), *Domestication of Media and Technology*. London: Open University Press.
- Taylor, A. S., & Harper, R. (2002, April). Age-old practices in the 'new world': a study of gift-giving between teenage mobile phone users. *Paper presented at the SIGCHI conference on Human factors in computing systems: Changing our world, changing ourselves*. ACM.
- U.S Department of State. (2008). Bureau of Democracy, Human Rights, and Labor. Retrieved November 15-2009 from <http://www.state.gov/drl/rls/hrrpt/2007/100514.htm>
- Walsh, S. P. (2009). *A Psychosocial approach to understanding young Australians' mobile phone behaviour* [Doctoral dissertation]. Queensland University of Technology. Retrieved from [http://eprints.qut.edu.au/29799/1/Shari\\_Walsh\\_Thesis.pdf](http://eprints.qut.edu.au/29799/1/Shari_Walsh_Thesis.pdf)
- Weerakkody, N. D. (2008). Mobile phones and children: An Australian perspective. *Issues in Informing Science and Information Technology*, 5, 459–475. doi:10.28945/1021
- Wu, J. (2008). *Teens' mobile activities*. Retrieved November 22, 2009, from [http://s3.amazonaws.com/thearf-org-aux-assets/downloads/cnc/youth/2008-08-19\\_ARF\\_Youth\\_Wu.pdf](http://s3.amazonaws.com/thearf-org-aux-assets/downloads/cnc/youth/2008-08-19_ARF_Youth_Wu.pdf)
- Yoon, K. (2003). Retraditionalizing the Mobile: Young people's sociality and mobile phone use in Seoul, South Korea. *European Journal of Cultural Studies*, 6(3), 327–343. doi:10.1177/13675494030063004

*Muhammad Dayani Anshari is a researcher and lecturer. He received his BMIS (Hons) from International Islamic University Malaysia, his Master of IT (E-Business) from James Cook University Australia, and his PhD program from Universiti Brunei Darussalam. His professional experience started when he was an IT Business Analyst at Astra International. He earned a Research Fellowship from The Government Republic of China (Taiwan) at National Taiwan University 2014 and a Research Fellowship from King Saud University The Kingdom of Saudi Arabia 2009. He was awarded Best Paper and Presenter Award International Conference on ASEAN Studies 2 (ICONAS2) at Chulalongkorn University Bangkok, Thailand in 2015. He won Best Paper and Presenter Award, ASEAN Graduate Business Economic Programs Doctoral Colloquium April 2013, at Gadjah Mada University Indonesia. He is a recipient of Graduate Research Scholarship PhD program at UBD.*

*Annie Dayani has served as a lecturer at the School of Business and Economics UBD since 2001. She graduated from UBD with a Bachelor of Business Administration. Under UBD study exchange program and earned a Diploma in European Management Science from University Kent, Canterbury, UK. Her Master's Degree is in Applied Information Technology from Monash University Australia. In 2013, she completed her PhD in Communication Technology at University of Queensland, Australia. Her research interests include business and management, information systems and e-government as well as knowledge management.*

*Abdur Razzaq is senior lecturer and researcher at Universitas Islam Negeri Raden Fatah, Palembang - Indonesia. He is also active public speaker sharing his knowledge and expertise in social science, education and Area studies.*

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