

HISTORY OF PHILIPPINE DIGITALIZATION

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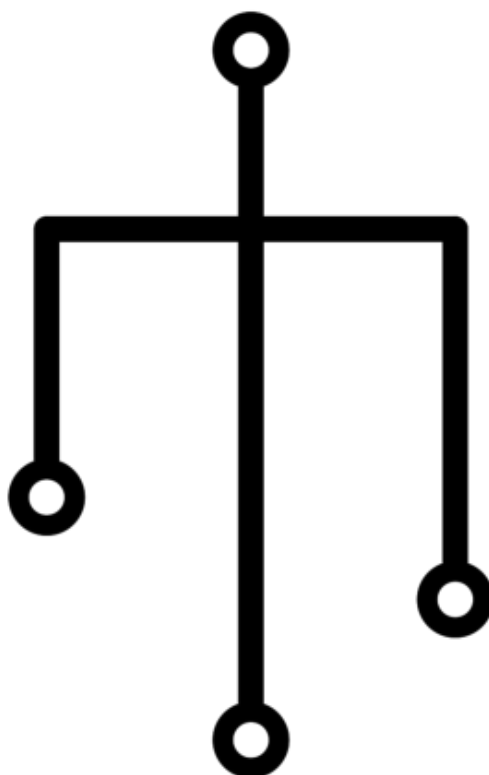


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Abstract

This paper entitled "History of Digitalization in the Philippines" discusses digitalization in the Philippines with a particular emphasis on the roots and current status of its information and communications technology (ICT). This research suggests that although the Philippines is one of the early colonial countries in Asia-Pacific to obtain and use early-digitized technologies, the foreign-dependent economic model under its colonial masters and neoliberalism-oriented leaders had hampered the industrialization of the country most notably in the 1960s-70s. The lost momentum to industrialize, along with economic policies that are foreign-oriented, caused the Philippines to become dependent on the service industry. The lack of national industry and grand political plan to do so lead the Philippine ICT to be highly reliant on foreign technologies and software which has a negative impact on the pace of current digitalization in the Philippines.

Introduction

Like most countries in the world today, the Philippines has been a member of the digital world. Filipinos being the most active users of social media have been plastered throughout the internet (Gonzalez, 2019). The term “peennoise” used to mock “Pinoys” or Filipino online gamers for their unpopular toxic behavior has made rounds in the international gaming community as well. The online omnipresence of Filipinos has not ceased despite having the slowest internet connection in comparison with its neighbors (TopTenPh 2017). There is no denial, then, that the daily lives of Filipinos have a wide participation in digital platforms, albeit not fully digitalized. But this transformation did not just happen in a snap—and its history is what this paper is attempting to write.

The discussion will be divided into five parts of discussion: (1) definition of “digitalization”; (2) the proto-digital technology in the Philippines; (3) the post-War Philippines and early computers; (4) mobile phones, texting, and internet: radical digitalization; and (5) synergy of smartphones and internet: a great leap in digitalization.

What is Digitalization?

Based on the analysis of collated sources, Schumacher, Sihn, and Erol (2016) defines digitalization as “the social implications of increased computer-assistance, new media and communication platforms for the economy, society and culture” which focuses on macro-level effects such as digital media infrastructure; communication platforms; social structure; cultural aspects and knowledge production and management, among others. This is not to be confused with the

term “digitization” which refers to the “conversion of continuous analog, noisy and smoothly varying information into clear bits of 1s and 0s” and focuses on the micro-level aspect of technological advancement such as the shift from analog to digital signals; changes in electrical components; and dematerialization of information (2016). Although different from one another, digitization is an inseparable aspect of digitalization, as the changes in the former serve as one of the integral indicators for the latter.

As such, with the emphasis on the term “computer assistance”, this historical essay will largely focus on the impact of computer technologies on the Filipino people on societal and cultural levels in the context of Philippine history. Television, radio, and other non-computer technologies will also be discussed, albeit in minor detail, as they have played and still play a huge role as media and communications platforms up to this day.

Proto-digital Technology in the Philippines

Although the Philippines had experienced relative peace during the Commonwealth, the economic status of the country was not that different from a few decades earlier, during the last years of the Spanish rule. Aside from having Filipino leaders, the Philippines was still tied to and dependent on the economic policies of its new colonial master—the United States. To be more specific, the United States treated the Philippines as a source of cheap raw materials for its factories, and a market for its surplus goods (Owen, 1971).

The earliest presence of proto-digital technology in the Philippines can be traced back to the 1920s when the Pacific Commercial Company of Manila acquired sets of

tabulating machines from the American company Computing Tabulating Recording Company, followed by the Insurance Company of Manila in 1930 (IBM, 2003). The tabulating machines are electromechanical devices that are used to input, summarize, sort, and report various data by punching holes on punched cards, with each hole corresponding to specific information (U.S Census Bureau, 2020). Most famous for its hastening of the 1890 United States census, the tabulating machine by Herman Hollerith branched out in a versatile set of purposes, as it was used for producing statistical data for schools, industries, and government (Lorge, 1942). The Computing Tabulating Recording Company (CTR), which later became the International Business and Machines Corporation in 1924, became the biggest provider of digital machines in the Philippines from its market entry in 1925 until the 1980s (IBM, 2003).

The entry of advanced technology in the Philippines during this time is not surprising as it was part of the global industrialization trend in developing countries in South, East, and Southeast Asia since 1870 (Bénétrix, O'Rourke, and Williamson, 2012). It should be noted, however, that these technologies were minimal and only present in businesses—mostly from foreigners and the transformed principales families—and not on a wide and national scale. By 1913, the industrial output of the country grew up to 6.3 per annum even out-matching the pace of countries like Korea, Taiwan, and India (de Dios and Williamson, 2013).

Although it is difficult to convey the impact of the early digitalization in the Philippines due to the lack of sources presenting the exact number of institutions that utilized tabulating machines in their operations in the 1920s up to the start of World War II, the momentum of the industrial development and economic growth—

highly-dependent on an export-oriented economy—of the Philippines from 1920 until 1938 leads us to infer that the introduction of proto-digital technologies played a notable role in development and growth, albeit minimal. To parallel the experience and effect from the United States, tabulating machines were still an important tool in fostering more effective procedures for managing records, even on a minuscule amount in the commercial and industrial sectors (Norberg, 1990).

The Post-War Philippines and Early Computers

The economic crises in the United States and central Europe and the rise of Nazi party in Germany served as catalysts for World War II and disrupted the eminent “independence” of the Philippines under the American rule (Gordon, 2008; Boyte-White, 2020). The Philippines was completely obliterated after the Japanese occupation and Manila was even named as the “Warsaw of Asia” due to the massive destruction of infrastructure and deaths of Filipinos (Sebastian, Manguera, and Rosales, 2014). About one million Filipinos died in 1942 to 1945 and it was estimated that the GDP of the country was reduced to 30 percent from its pre-war state (Sicat, 2019). Most of the financial and relief aids used by the Commonwealth government for the immediate revival during this period came from the American military, the United Nations Relief and Recovery Agency (UNRRA), and the little resources left of the government itself (2019).

The systematic rehabilitation of the neo-colonial Philippines started in 1947 to 1950 with funds coming from the American institution Philippine War Damage Commission (PWC) as a form of war compensation with a total worth of \$400 million for the year 1947 and \$57 million for the year 1950 (Delgado, 1952). Some of the

beneficiaries from the private sector were unable to receive their full compensation until the project ended in March of 1951; nevertheless, the majority of the private sectors were united that it greatly helped them to rehabilitate and recover (1952). These rehabilitation funds, however, came with a price in the form of an amendment known as parity rights that was ratified on March 11, 1947. Under this agreement, American corporations were given the same rights as Filipinos in terms of utilizing and developing the natural resources (e.g., minerals) and owning public utilities such as communication and transportation (Sebastian, Manguera, and Rosales, 2014).

The favorable economic environment due to the aforementioned amendment, coupled with the quick revival of the business sector, also attracted foreign companies to invest and establish their businesses in the Philippines. The National Business Show in Manila—which exhibited leading-edge technologies of the era such as the keypunch, interpreter, sorter, alphabetical accounting machine, proof machine, test scoring machine, electric typewriters, and a time system—serves as clear evidence of the occurring revitalization in the private sector, particularly on business and technology (IBM, 2003). An example of early technology companies taking advantage of the foreign-friendly economic policies and the availability of cheap labor (as a result of economic damage of World War II) is the International Business Machines Corporation or IBM in 1953. IBM built its card manufacturing plant in Manila (2003). Infrastructural and operational improvement was not exclusive in the private sector as the Manila Railroad Company, one of the government offices that received financial aid from the PWC in the form of rolling stock helped them get back on track as it was able to mechanize its accounting operations using IBM machines by 1953 (IBM, 2003).

The post-war financial stimulus vaulted the economy to stability and to a progressive trend throughout the next decades. The Philippines was able to attain 7 percent per annum of growth from 1950 to 1972 thus exhibiting its continuing industrial growth along with other Asia-Pacific countries such as Japan, China, Korea, and Taiwan during this period (de Dios and Williamson, 2013). However, the same agreement also cemented the lack of independent framework of the Philippine economy that could be felt even half a century later. Along with the industrialization and increasing economic growth of the country also came the arrival of more advanced digital technologies that benefitted few businessowners and middle class citizens..

From the 1960s to the early 1980s, the acquisition of computer technologies of both private and public sectors had been sporadic and was concentrated on the few who had the capital to do so. Throughout this period, some government offices were able to purchase and install updated computer models for their specific functions. For instance, the Bureau of Lands acquired the first computer in the Philippines in 1960, the IBM 650, and used it for land survey computations; and the Manila Electric Company and Department of Agriculture and Natural Resources installed IBM System 370 models in 1973, followed by National Census and Statistics Office a year later (IBM, 2003). Higher education was able to catch up to the changes through time. As early as 1964, the Mapua Institute of Technology installed the IBM 1620 as a data processing system tool; a year later, the Education and Data Processing center opened in Manila; the University of the Philippines computer center was opened, equipped with an IBM System 360 Model 40 that was used for tasks related to research, registration, instruction, and administration in 1968; the University of the

Philippines Institute of Meteorology used an IBM 1130 for weather computations in 1974; and in a rare occasion in 1976, the IBM Philippines partnered with the National School for the Deaf to enroll its students in keypunch classes inside the facilities of the company (IBM, 2003).

Along with the slightly advancing economy, the business sector also pushed itself to ride and exploit the arrival of new technologies. To cite a few examples, the Central Azucarera de Tarlac installed the IBM 1440 and the Ysmael Steel Manufacturing Company started to use punched card equipment to control its expanding operations in auto-assembly and home appliances; the China Banking Corporation in Manila became the first bank in Southeast Asia to use multi-programming online banking by using IBM System/360 Model 30; the Philippine Packing Corporation used IBM System 370 115 in 1973; the Atlas Mining and Development Corporation used it to process commercial and mining data on a rare occasion in 1976; and by 1982, Bank of the Philippine Islands were the first to utilize IBM 3624, IBM's online automated teller machines (IBM, 2003). Despite the increasing political instability and the declaration of martial law by President Ferdinand Marcos in the early 70s, and the People Power Revolution in 1986, the flow of new digital technologies in the market did not stop during these two decades.

Although newer computer technologies have been coming to the Philippines in this period, this does not automatically translate to overall economic prosperity. The decades of the 1970s to 1980s were also periods of massive unemployment and poor growth in manufacturing (de Dios and Williamson, 2013). This is largely due to the failed transition from ISI (Import-Substitution-Industrialization) to LIEO/EOI (Labor-Intensive-Export-Oriented/Export-Oriented-Industrialization) program of

industrialization that caused increasing debt and wider liberalization of the economy due to the structural adjustment loans agreed upon by the government of President Marcos and the World Bank (Ofreneo, 2014). This shift in the economic paradigm also caused an imbalance in competition between the local and foreign markets, with the former on the losing side. This downward trend in industrialization and economy caused by economic liberalization persisted—and even went deeper through privatization of important public services and assets—during the next administrations of Corazon Aquino and Fidel V. Ramos (2014). Unfortunately, the economy of the Philippines was unable to regain the momentum of industrial growth it needed to be able to compete with other Asia-Pacific countries and mostly relied on the remittances of the OFW (Overseas Filipino Workers) until the 2000s.

Mobile Phones, Texting, and Internet: Radical Digitalization

The decades of the 1990s to 2010s are the witnesses for the birth and growth of the two digital technologies that pushed the digitalization of the Filipino society to new horizons: the cell phone and the internet. However, telephones and snail mail were the main means of communication of Filipinos until the early 2000s; on the other hand, the television and radio, since its widespread availability in the 1950s, remains as the main channel for the majority of the Filipino for information access until the introduction of smartphones and social media a decade after.

For the majority of the late 1980s to early 1990s, the Philippine Long Distance Telephone Company (PLDT Inc), the largest communications operator since the late 1920s, has had a monopoly on the telecommunications market, particularly on landline services. Initially owned by Americans in 1928, PLDT was sold to a group of

Filipino businessmen by the General Telephone and Electronics Corporation in 1967 (Philippine Stock Exchange [PSE], 2020). Owning and operating 10 data centers in the entire country, PLDT offers its wireless and fixed line communication services under the brand names “Smart”, “Sun Cellular”, and “TNT” and “PLDT Home” and “PLDT Enterprise”, respectively (2020). It was in 1994 when one of its main competitors, the first foreign company Globe Telecom, entered the market which was originally named Globe Wireless Limited in 1935. In 2016, the company approved the 50% company share acquisition of Vega Telecom (VTI) from San Miguel Corporation and another 50% to PLDT (2020). Globe Telecom currently owns three data centres in the Philippines (Cloudscene, 2021).

Although there were attempts from Congress to disperse the control of PLDT, the telco giant was able to stop the entry of new competitors in the industry. PLDT was even able to absorb new participants in the industry, such as Smart Communications in 1999. The duopoly of PLDT and Globe in the telecommunications industry, although other telecommunications companies would enter the market in 2015 onwards, would affect the digitalization experience of the Filipinos until today.

Mobile Phone and Texting

The first cellular network in the Philippines was built by PLDT in 1987 (Salac and Kim, 2016). However, the prepaid and postpaid SMS services were introduced in 1994 by the ISLACOM (which will be under Globe in 2001) and are considered to be the first digital mobile communication in the Philippines (2016). SMART communications made texting more available to more Filipinos by offering cheaper communications plans; and by 1997, it shared the majority of the telecommunications market and became the largest mobile network (2016). For the

first nine months of 2020, PLDT had a Php 60 billion worth of revenue, which is 15% higher than it had last year (Smart, 2020). Using mobile phones, more popularly known locally as cell phones, became such a widespread phenomenon that there were at least 41 subscriptions for every 100 people in 2005 (World Bank Group). The rapid increase in the number of people using mobile phones, primarily because of calling and texting, as the main means of communication in the early 2000s is due to its inexpensiveness in terms of installment and monthly fees in comparison with its mainstream alternative, the telephone. Also, due to it not requiring any fixed line to be used, cell phones offered better accessibility to consumers that have been previously unable to be reached by landline services (Lichauco, 2001). For the same reason, mobile texting remains as one of the major tools of communications of the Filipinos years later. Foreign mobile phone brands have dominated the Philippine market since it became a staple of the daily lives of Filipinos since the 1990's. A survey about mobile phones conducted in 2008 showed that Nokia was the most used brand with 44% shared answers from respondents, followed by Sony Ericsson, Motorola, and Samsung (Olandres, 2008).

Aside from making the communications of the people faster and easier, the digitalization of communication made by mobile phones also had social effects on Filipino consumers. For instance, commercial farmers, even those from far-flung areas, were able to access price information, report income, and increase the trust in traders (Roa, 2012). In addition to logistical ease, texting also had a sociolinguistic impact on Filipinos, as evidenced by the rise of "Generation Txt" comprised of teenagers and young professionals that have developed their own texting language in the late 1990s to adapt to the character limits for SMS texting (Lichauco, 2001).

New groups popularly known as “clans” emerged later on, consisting mostly of young adults formed to meet and interact with new friends and to pursue common interests (Tupaz, 2012). The increase in social reach of an individual did not always convey positive outcomes, as telephone scams that were prevalent in the past decades jumped onto mobile phones as a new platform (Araneta, 2008). In a sense, texting enlarged the social network of Filipinos, who were previously limited to relatives and friends, to a new group of people who also sought new company to interact with. Still, the digital divide brought by the lack of cell sites outside major cities hampered Filipinos from maximizing the possible benefits of mobile phone communication during the past decades as there were only thousands built at that time—Smart only had 4,565 in 2004 in comparison with the 4.7 million that the telecom has as of 2021 (Smart, 2004, as cited from Smith, 2004; nPerf, 2021). And the digital divide in terms of infrastructure is still stark to this day, as the cell sites in the Philippines are mostly concentrated in NCR, and Central and Southern Luzon, whereas the Eastern Luzon and Eastern Mindanao hardly have any (2021).

Cell phones also created socio-political impacts. Among these is the enactment of laws such as the RA 8792, more commonly known as “E-Commerce Law”, and government bodies such as ITECC (Information Technology Electronic Commerce Council) to correspond with the changes that the new digital technologies brought (Romulo, 2020). But perhaps the most astonishing impact that texting brought to Filipino society—and their history itself—was its cataclysmic effect on the removal from power of President Joseph Estrada in 2001 during EDSA II. The public outrage calling for Estrada to step down from power and an ongoing impeachment trial due to his involvement in cases of corruption was stoked even further by the “Text

Brigade" calling for people to go out on the streets to protest and rally for his ouster (Bociurkiw, 2001). The number of daily texts jumped to 70 million from the usual 30 million in the last days of his trials and the day of EDSA II itself and was considered as the first "E-Revolution" in the history of the world (Lichauco, 2001).

The Internet

The genesis of internet connection in the Philippines could be pinpointed to the year 1994 when PHNet connected to Sprint in the United States via 64/kbps link (Salac and Kim, 2016). By 1997, the registered internet users in the Philippines reached the numbers of 85,000; and by the year 2000 "yahoo.com.ph" was introduced by Yahoo Computer Services (2016). Despite the increasing number of Filipinos diving on the internet, it would take at least a decade before it penetrates and becomes an essential part of the majority of the populace. Nevertheless, its prematurity did not stop it from being an active catalyst for changing the social landscape of the Filipino—albeit on a small scale—in the first decade of the 21st century.

The Asia Foundation, in partnership with various local organizations, held the Philippine Blogging Summit in 2005 with the agenda of technological furtherance in the country (Tapnio and Rood, 2011). The same group would, later on, push human rights advocacy work and campaign for Digital Activism in the years to come (2011). Probably the most ostensive example of how the internet jolted the political landscape of the Philippines was the "Boto Mo, Ipatrol Mo" election campaign of ABS-CBN (the largest broadcasting institution in the country) that started in 2009 (Ressa, 2009). In partnership with several education and media institutions, the campaign aimed to make Filipino citizens more active participants in the 2010 election by

serving as a platform where they could report their political grievances and monitor the events before and during the said elections primarily through the internet and mobile phones (Philstar, 2010). Sourced from their websites and social media accounts, Bayan Mo Ipatrol Mo gathered 50,000 participants for this campaign (2010).

The adaptation of the neoliberal economic framework introduced by powerful western countries such as the United States and United Kingdom causing the Philippine economic policies to be consistent with the neoliberal paradigm of World Trade Organization since 1995 until the present catalyzed and cemented the service industry—especially those related to outsourcing—to be the central labor industry of the Philippines (Bello, 2009). The globalization-inclined economic policies due to the adaptation of neoliberal economic framework, cheap labor, fluency of Filipino students and graduates in the English language and the introduction of the internet in the Philippines also resulted in a new type of service industry that would, later on, constitute a big part of the economy and labor aspect of the country: the Business Process Outsourcing (BPO) Industry. BPOs offer auxiliary and extension services to a client company; the majority and most popular of BPO industries in the Philippines are the customer service industry (Bauto, 2019). Its origins can be traced back to 1992 when the Accenture group established its first contact center in the Philippines (Natividad, 2015). In just more than a decade in 2005, the Philippines got 3% of the global BPO market, which translates to 2.4% of the country's GDP (2015). The growth rate of the BPO industry was so fast that by 2010 it was named the BPO Capital of the World (Bauto, 2019). By 2013, the revenue of the BPO industry climbed up to \$15.5 billion and had 900,000 full-time employees (from just 638,000 in 2011)

(Natividad, 2015). This fast pace growth and penetration of BPO industry in the Philippine economy can be attributed to two main factors: (1) English fluency of the majority of its population compared to nearby countries; and (2) cheap labor and the weak structural safety net for workers (McMillan 2016). Despite its continued growth, the BPO industry had and still has cases of labor malpractice. The latest is connected to unfair working conditions and compensations, and working hazards some BPO workers are facing during the COVID-19 pandemic (Galant, 2020).

On the socio-cultural side, the internet also gave rise to internet cafes and the E-Sports scene in the Philippines. Internet cafes—more popularly known as “com shop”—are businesses offering rental services for their computers, with usage spanning from browsing, typing, playing video games, among others. With customers composed mostly of male teenagers, playing video games—either over LAN or online—is the most availed service in internet cafes (Bringula, 2013). It is hard to ascertain the exact year when internet cafes were established in the Philippines, although accounts say that they have been around since the late 1990s (Morada 2010). It is safe to state that by the early 2000s, internet cafes had reached a significantly large customer base and a firm footing in Philippine commerce, as nationwide tournaments for games such as DotA 2 (Defense of the Ancients) and Ragnarok Online were already taking place in 2003 (Palacios 2014). More than a decade later, the E-Sports scene in the Philippines would prove to have a vibrant and thriving community as evidenced by the victory of two E-Sports teams Mineski Pro Team and TNC Pro Team in the DotA 2 International 2018, with the prize pool of \$25.5 million (Subido, 2019).

For only a decade of development, the Philippine internet connection reached an

average speed of 1886.55 kbps as of 2007. In comparison to its previously reported performance, it considerably escaped its former limitations and became more accessible to a wider range of Filipino consumers—many of whom were unaware of the existence of such technology—through the internet, cafes (of course, the access to computer technology itself) (Trading Economics, 2021). It produced subcultures that have been impactful to teenagers and young adults up to this day. And although the percentage of internet users in the Philippines increased from 0.006% in 1998 to 36% in 2012, it is still crystal-clear that the majority of the Filipinos did not have internet access (World Bank, 2014). It is the rise and spread of smartphones that would deliver the internet to the hands of an outstanding number of Filipinos in the 2010s onward.

The Synergy of Smartphones and Internet: Great Leap in Digitalization

Since the early years of the 2010s until today, smartphones have been the device mostly used by Filipinos to connect to the internet. In comparison to previous models and brands of mobile phones, smartphones offer more versatility because of the many programs that can be installed from its App Store, especially with social media networking applications such as Facebook, Twitter, and YouTube, among others. The number of mobile phone users in the Philippines in 2014 was 65.4% of the population; in the same year, the country was also branded as the fastest-growing internet population in five years with a 531% growth (Statista, 2016; Salac and Kim, 2016). This rate growth rate is not surprising because, in 2015, 60% of consumers were subscribed to 2.1-5 GB of mobile broadband plans, a higher rate compared to the 40% in 2014 (Camus, 2015).

As Filipinos gained more access to the internet using smartphones, their use of social media and its impact on their lives became broader and deeper. Social media networks have been in the Philippines since the early 2000s, with Facebook being around as early as 2004. However, Filipinos still had limited access, as most Filipinos only accessed them through Internet Cafes as a big chunk of the population did not yet have network connections at home (D'Onfro, 2015). As of 2018, the number of Filipinos who use social media reached 76 million (Gonzales, 2019). In the same year, the average time Filipinos spent on social media was 4 hours and 8 minutes per day, ranking as number one in global statistics for seven years since 2012 (Adel, 2019). Sixty-seven percent of them used their mobile phones to connect to their social media accounts (Gonzales, 2019).

At this point, there is no doubt that social media have become completely intertwined with the daily lives of Filipinos—both personally and professionally. It is an understatement to say that social media radically changed the way Filipinos communicate and interact with one another, specifically with the introduction of free media sharing and chat from Facebook, for example, that was almost impossible to be carried out by the majority who only had texting and calling at their arsenal wherein the number of characters and time of call were limited and not free. Aside from making it easier to connect with relatives and acquaintances, social media pushed the extent of a social circle of an individual even further, almost removing the boundaries of possible interactions; but inversely detaching them from the traditional social network. With the ability to provide a platform for uploading images, videos, and other types of media, social media became a powerful tool for information dissemination, with the media giants from television, radio, and print

quick to jump and utilize its potential. Social media also became a hub of a new type of entertainment in the form of Facebook Pages where posts would revolve around a specific set of topics—the most famous of which are the meme pages.

Social networking sites also boosted the commercial sector. It did not only provide big corporations with wider marketing, but it also served as a new platform for SMEs (small and mid-size enterprises) to join and compete for the newer and larger pool of consumers. Even those without formal business set-ups were able to join in this growing market. This became more apparent during the 2020 COVID-19 pandemic, where Filipinos tried to maximize the capability of social media as a marketing tool as they resorted to selling different types of products—most notably foods and other necessities—due to the rising unemployment rate, and lack of public transportation and mobility, and closure of businesses as a safety measure (Barreiro, 2020).

Aside from social media, smartphones, through its applications, also provided new possibilities for the commercial sector. Grab, and Angkas offered vehicle-for-hire services that can be used by its users for transportation and delivery of a wide range of products, most especially food and beverages. These service providers are also in partnership with applications such as Zomato and FoodPanda that offer a catalog of a wide range of food restaurants that are in proximity to the area of customers.

Indeed, smartphones and social media have brought a lot of positive effects on the lives of Filipinos since they were introduced almost a decade ago. But things are not all bright and light colors, as these have some drawbacks on Philippine society as well. The biggest problems to this date would be the privacy and security issues associated with the unethical usage of user data, as well as the overarching effect of the digital divide. Systematically monitored and gathered from the digital activities

(mostly from social media) of users and sent collectively in Big Data by an analytics group, corporations can buy and use these data to their advantage by any means possible without the full awareness on the part of users (Jain et al., 2016). This poses a serious problem in terms of privacy because outside of advertisement purposes, harvested data can be used to assess the creditworthiness of an individual when applying for a bank account, medical insurance, mortgage, etc. thereby affecting their career opportunities and life as a whole without their knowledge and consent. Aside from the individual level, the unethical use of Big Data can produce a socio-political effect, as evidenced by the use of the data of Filipino Facebook users by Cambridge Analytica that paved the political victory of President Rodrigo Duterte in his presidential campaign in 2016 (Gutierrez, 2018). Although social media can usher the exchange of ideas from different people and advancement of the public sphere, various interests and political groups have been utilizing troll farms to actively disrupt the digital public discourse and impose their political agendas and interests (Mahtani and Cabato, 2019). One of its results is the creation of the political branding of “DDS” and “Dilawan”, with the former referring to the supporters of the current administration of President Duterte and the latter of the Liberal Party in the Philippines (but mostly refer to the supporters of the Aquino family, including presidents Corazon and Benigno “Noy” Aquino).

In a sense, the biggest transformation that the combination of social media and smartphones made in the communication of Filipinos is the shift of the flow of information from the monological to dialogical. From being mere acceptors of information coming from traditional multimedia such as television, radio, newspapers, films, etc., Filipinos became the producer of content and information

consumed by other users as well. Traditional media no longer has the monopoly of knowledge, as information production and exchange are now diffused among different users in social media networks and are more accessible by many through smartphones. But the swift and wide access to social media makes it vulnerable to people with large capital to utilize its unending potential to serve their interests. Social media as public spheres for the expansion of discourse and members of society has been polluted by different interest groups, and the contamination they have created leaks outside the screens of cellphones.

Evaluation

The Philippines has an extensive history of digitalization going as far back as the 1920s despite it being concentrated on the economically well-off individuals, specifically the former principales, emerging Filipino middle class, and foreign businessmen. Although it was not able to keep up with the latest technological development of the United States during the early 20th century despite being its colony, the Philippines was ahead of its contemporary Asia-Pacific countries during this period—with Japan as an exemption. The momentum continued even as the country was recovering from the havocs of World War 2, and the pace of industrialization and overall economic prosperity was sustained throughout the post-war era—although by this time East Asian countries like China, Korea, and Taiwan joined the fray. Both public and private sectors reaped the benefits of the flow of new technologies until the combination of political and economic stability disturbed the country in the late 1970s and early 1980s.

Economic stability was regained in the early 1990s and together with a liberalized

economy the early stages of telecommunications came forth through mobile phones and the internet. Throughout its decade of prominence as the peak digital technology, mobile phones, with its text messaging feature, brought a radical change in the Philippine society in the field of communication, and especially, politics. The internet, on the other hand, was maximized by Filipinos despite being short in avenues of access and had a major effect on the socio-cultural aspect of their lives. The monolith BPO industry is the prime and living example of it.

The arrival of smartphones, however, was the main propeller of the most radical change in digitalization history in the Philippines. It was through this device that most of the Filipino people from all echelons of society could access and become a participant on the internet. Smartphones caused a great leap in communications, commerce, and politics. Smartphones made it easier for people to join the digital public sphere and public discourse by making social media even more available to a greater number of people. But the spread and penetration of social media in the lives of many Filipinos is not all fun and games, as the issues of data privacy and security, political divisiveness, and manipulation still lurk in the corner of the newly digitized world.

As of this day, most of the marginalized Filipinos, who constitute the majority of the population, are still left behind in all aspects of development, unable to join and use the benefits of new digital technologies. The interaction between man and technology has long been present since humans learned to wield stone tools—the user and the item shape one another. But in the 21st century, the development of technology seems to be too fast, like an overflowing ravine, on which humans are having difficulty to maneuver and paddle the boat amidst the raging water. Although

this sounds like the dilemma of a first-world country, the Philippines and the Filipinos, as a part of the globalized world, have a say and vital role in the overall digitalization. Despite being in the middle of a never-slowng flow of development, the present is and will always be the perfect time for Filipinos to rethink, reevaluate and actualize new techniques on how to ride the never-slowng wave of digitalization of society in which the majority—and not the abled few—can be part of and finally enjoy the journey. But the problem will persist if the digital divide caused by unequally large ownership of the economy and politics by few individuals—both Filipinos and foreigners—is left unaddressed, and would only cause a “domino effect of lag” for the digital progression that is for the people.

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