

ENGG 481 Final Essay

From The Telephone to The Smartphone: Investigating Their Impacts on Society



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Introduction

In our modern era, technological breakthroughs have not simply reflected societal changes—but have actively reshaped them. Innovations in communication, from telephones and emails to contemporary social media platforms, have driven shifts in how we connect, interact, and define our social and cultural norms. As Langdon Winner insightfully observed, “artifacts have politics,” highlighting how the design and implementation of technology inherently direct social outcomes [1]. Similarly, Neil Postman argued that technology carries its own imperatives that shape our behaviours and beliefs [2]. In this essay, we argue that the telephone, in the 19th and 20th centuries, and the mobile smartphone, in the 21st century, served and continue to serve as emblematic artifacts that have shaped and continue to shape society, respectively. This is carried out by exploring how these tools have played a decisive role in sculpting the landscape of social behaviour and cultural dynamics through examining a range of historical and present-day events and perspectives. We begin by examining historical events and perspectives of the telephone in the 19th and 20th centuries and the varied positive and negative impacts on different cultural and social groups, including Indigenous communities and those in the ‘Global South’¹. We then transition into a discussion of the modern-day smartphone, illustrating how certain ‘features’ of the smartphone – such as social media – have served to remedy some of the limitations and flaws associated with the traditional telephone, especially as they pertain to Indigenous groups and those in the Global South. Alongside this, we unravel the positives and negatives associated with the mobile smartphone in the modern

¹ This term refers to countries with lesser access to economic and/or social resources compared to countries in North America and Europe [41],[42].

day. Then, we discuss some of the ethical implications that stem from these impacts. Finally, we make closing remarks regarding the impacts associated with the traditional telephone and the modern day smartphone on society, highlighting how both have shaped the way we live and the need for prudence around how we handle and use these technologies.

Part 1 - The Telephone

To begin diving deeper into investigating the influence that the telephone had on society, let us first assess the historical events and perspectives that were revealed as the telephone was initially introduced in society as this gives a good jumping-off point from which we can base later interpretations on. The telephone was invented by Alexander Graham Bell in 1876. Subsequently, the Bell Telephone Company was established in 1877 by Alexander Graham Bell [3]. As a consequence of the telephone becoming commercialized through Bell Telephone Company, this triggered rapid innovation and industrialization of telecommunications and allowed for the establishment of vast communication networks. These commercialized networks solved people's problems of communication over large distances and spurred accelerated business and market expansion [4]. But, besides altering *how* people communicate in regards to their personal and professional lives, the telephone also changed the *nature* or *essence* of communication itself, due to the spontaneous nature of the communications networks and the fact that the telephones allowed for a more intimate transmission of the human voice [5], [6]. This change aligns with McLuhan's axiom, "The medium is the message," by indicating that the 'how' in communication affects the communication itself and the social behaviours associated with it [7]. Indeed, how people communicated via telecommunications was distinct from conventional face-to-face communication in that it "blurred the boundaries

between public and private life, introducing a *continuous* flow of conversation that reshaped etiquette and expectations about immediacy and presence” [8]. While these remarks apply primarily to North America and other regions in the ‘Global North’² during the late 19th and early 20th centuries, Indigenous communities and those in the Global South experienced different trajectories. According to J.D. Ryder and D.G. Fink, “By enabling instantaneous, one-on-one voice communication, the telephone restructured social dynamics—promoting immediacy and personal intimacy in a way that, while beneficial in urban and industrial settings, sometimes disrupted the communal fabric and collective cultural identity of indigenous groups” [4]. In terms of how the traditional telephone affected Indigenous communication, we observe that there was this unwieldy *dual* outlook, whereby there was a positive response to the increased sense of connectivity between *individuals* across larger distances, but a negative response to the lack of reinforcement of *group* oral storytelling traditions. According to a synthesis of Indigenous perspectives as documented by Indigenous scholars T. Joseph and L. Simpson:

When the telephone first reached our communities, it was celebrated as a miracle of modern connectivity—a means to speak with distant relatives. Yet, over time, we observed that its one-on-one, instantaneous nature began to erode our collective oral storytelling rituals. The sacred practice of gathering as a community to share stories, songs, and traditions was gradually replaced by isolated voice calls. This shift, while

² This is a term used to describe a group of countries characterized by advanced economies, high levels of technological development, robust infrastructure, and political and economic stability [43], [44].

empowering individual connection, subtly fragmented the communal tapestry that had sustained our culture for generations [9], [10].

The Indigenous perspective reveals that the telephone facilitated distant communication, but on the flip side, it began to “erode collective oral storytelling rituals.” So, we observe that the telephone was ‘far-reaching’ in its ability to *disrupt* cultural processes within cultural groups such as the Indigenous. Consequently, this fragmentation eroded the ‘communal tapestry.’ In contrast, for those residing in the Global South, there were significant economic, political, and infrastructural challenges that delayed the widespread adoption of telephone technology. Limited government funding, lower levels of industrialization, and geographic challenges meant that rural and remote areas experienced much *slower* deployment of telephone networks [11], [12]. As a result, these regions were left behind, creating a gap in access to communication tools; this sparked the start of what is referred to today as a ‘digital divide’³. The members of the Global South were behind socially and technologically due to this divide; this began to turn into a ‘self-reinforcing positive feedback loop’ whereby initial technological divides would exacerbate and things would become even more divided [13], [14]. As paraphrased by Mansell, “The exclusion of the Global South from 19th-century communication networks created a path dependency. Today’s digital inequalities are not new—they are an evolution of systemic neglect” [15].

³ According to De La Torre and Macias, “The digital divide is characterized by differences in the capability to access and use digital information technologies, leading to significant inequalities in information literacy, economic opportunities, and social inclusion” [31].

Part 2 - The Smartphone

Social Media as a Remedy

Now, unlike the traditional telephone, social media – a feature built into the mobile smartphone – has enabled Indigenous peoples’ and those in the Global South to combat some of the aforementioned issues. According to Indigenous scholar Marisa Duarte, social media allowed Indigenous peoples to reclaim a sense of cultural agency: “Social media enables Indigenous communities to control their own narratives. Hashtags like ‘#NativeTwitter’ create spaces where we define authenticity and resist the commodification of our cultures” [16]. One reason that social media could be *constructive* for Indigenous peoples is that its *structure* allows for more group dialogue and perspectives. This is captured well by the Australian Aboriginal scholar Carlson, “Telephones individualized communication, but social media revived our collective ways. WhatsApp groups for Indigenous land defenders span continents, something telephony never allowed” [17]. Earlier on, in the 1990s, bulletin board systems (BBSs) were particularly helpful in enabling the Indigenous peoples to coordinate legal disputes around land titles – Indigenous peoples in Canada and Australia were able to engage in greater activism around land titles [18]. As for members of the Global South, social media in the 1990s onward solved issues related to lack of critical infrastructure and funding. According to scholar P. Arora, “In much of the Global South, mobile phones became the first and only telecommunications device people ever owned. Social media platforms, optimized for mobile use, thrived in these contexts precisely because they required no landlines, fiber-optic cables, or centralized grids” [19]. Also, to this day, social media not only allows members of the Global South greater communication, but also greater advocacy, pushing for greater coordination relating to

resistance to state control and corruption [20]. For individuals residing in North America and Europe (the Global North), social media had a profound impact; the major historical events associated with the rise of social media in the Global North include the introduction of early social networking websites such as Friendster (2002), MySpace (2003), LinkedIn (2003), Facebook (2004) and Twitter (2006) [21]-[25]. Similar to the advent of the traditional telephone, social media within the Global North and society at large, fostered a 'culture of immediacy' for friends on the apps constantly checking in with other friends' updates and constantly getting notified about events. Although there was an increased sense of connectivity, the tradeoff – like the traditional telephone – was this immediacy itself. Also, these initial apps transformed culture in that they enabled people to curate their identities in ways that extended beyond traditional social roles, thereby altering cultural norms around authenticity and social presence - according to José van Dijck, “[these apps] provided new spaces for self-representation that reshaped personal identity and communal belonging” [26]. Overall, for members of the Global North, social media served to solve the problem of a rigid communication medium as depicted by the traditional telephone; you are only able to communicate through voice with the traditional telephone, and this can be limiting in terms of self-expression with others.

Cumulatively, through these events and perspectives applicable to the Global North as well as the Indigenous and Global South communities, we were able to get a glimpse of how social media, a feature built into the modern smartphone, was able to act as a solution against some of the negatives introduced by the traditional telephone. In the next section, we will explore further into investigating the smartphone's positive and negative impacts in the modern day, and then we will unpack the ethical implications that relate to those impacts.

Positive and Negative Impacts of The Smartphone

In this section, we dive deep into the positive and negative impacts of the smartphone in the modern day. We will focus specifically on investigating how the *smartphone* impacted society due to its built-in *manifold* functionality enabling features such as telecommunications and social media usage, and since – according to the Pew Research Center – many more North Americans are using their smartphones as a means of both calling others and using social media rather than traditional landlines [27]. Today, smartphones enable users to make calls, play games, text, and connect with friends through social media. This amalgamation of many functionalities has led to many positive and negative impacts that extend and differ from our discussion of the traditional telephone. Key positive impacts include enhanced connectivity and communication globally; easier access to social networks and better ability to maintain and grow those networks; civic engagement; creation and spread of companies; access to critical information revolving around education, healthcare, and banking; and, greater creativity within society. Notable negative impacts include digital addiction and distraction; privacy and security concerns; social isolation and shallow interactions; cyberbullying, harassment, misinformation and frauds; and, inequalities and digital divide [28]-[31]. To examine more deeply the positive impacts, let us first discuss the first iPhone launched in 2007 by Apple. The launch of the first iPhone in 2007 is widely regarded as a pivotal moment in mobile communication history, where it solved problems stemming from a lack of portability and instantaneous communication relating to the traditional telephone. According to the IEEE History Center, "The iPhone solved the longstanding problem of portability by unifying multiple communication functions in a single, hand-held device, thereby enabling users to carry an entire personal computer in their

pocket” [32]. Moreover, besides the portability features and instantaneous access, the iPhone - unlike most previous mobile phones - allowed for greater multimedia and data usage. This enabled users to connect with others through other mediums besides telecommunications such as the Internet, social media, and so forth [32]. Thus, the first iPhone was marked as a significant technological event that reshaped society and culture by enabling greater communication - via *instant* messaging and calling as well as *portability* - between individuals on a *global* scale [33],[34]. Unfortunately, this global connectivity and multimodal functionality as depicted with the first iPhone and other smartphones introduced and/or exacerbated many negative impacts on societies, such as political interference, data breaches, privacy breaches, increased digital divide, and social isolation. For instance, this increased connectivity and multimodal functionality allowed for political actors internationally to more easily interfere and manipulate with country elections thereby disrupting other countries’ political and governmental processes; this was concretely displayed through the 2016 U.S. election interference scandal – according to scholar R. Jones, “The 2016 U.S. election marked a watershed moment when smartphones, through their integration with social media, became conduits for foreign political interference—demonstrating that these devices, while fostering global connectivity, also enabled the rapid and targeted spread of misinformation” [35]. Besides the 2016 U.S. election interference, there was also the 2014 iCloud data breach that leaked many inappropriate images of celebrities. It was stated by IEEE that “The infamous iCloud breach of 2014 exposed the private data of numerous celebrities, underscoring how the convergence of smartphones with cloud services can precipitate large-scale data breaches and compromise personal privacy” [36]. One important remark to note here is that there appears to

be a trend or pattern between increasing features and functionalities, as well as increased *connectivity* – such as social media usage, iCloud storage options, and Internet access – and increasing *vulnerabilities*, on the global scale. This trend was absent in traditional telephone usage in the 19th and 20th centuries. Therefore, even though there were fewer features or capabilities with traditional telephones, users didn't need to be concerned about safety or privacy. Although, with traditional telephones, the inherent dearth of multimodal functionality and connectivity via lack of social media and other features limits collective group expression and the ability to enable national and international communication at a lower cost via not having to set up cellular infrastructure (using social media rather than landlines or fiber optics). Hence, we can glimpse at the *complexity* surrounding the tradeoffs between the traditional telephone and the modern day smartphone and their impacts on society. We end this section by claiming that these complexities and tradeoffs all lend forth to varying ethical implications. In the next section, we detail important ethical implications as they pertain to smartphones in the modern day.

Ethical Implications of The Smartphone

Before discussing some of the ethical implications related to the smartphone in the modern day, it is helpful to clarify the distinction between the positive and negative impacts on society and the ethical implications arising from that. The ethical implications address the moral and *normative* aspects of technology such as privacy, surveillance, and power dynamics. Meanwhile, broader societal impacts encompass *measurable* changes in communication, economy, and cultural behaviour. Hence, this section will be more interpretative and normative compared to the previous paragraphs. Let us first discuss the ethical implications of privacy concerns

stemming from the negative impacts realized in the previous paragraph. In particular, we discuss the privacy concerns that stem from the increased connectivity and multimodal functionality features embedded in modern-day smartphones. Investigating first the work by 20th-century philosopher Michel Foucault, we observe how, in his seminal work *Discipline and Punish*, technological advances can be used as mechanisms for surveillance: “The mechanisms of surveillance, enabled by technological advances, are not merely neutral tools; they transform the very nature of power and subjectivity in society” [37]. Thus, according to Foucault, surveillance enabled by technological advances gives rise to *changing* power dynamics in society. This aspect highlighted by Foucault is particularly a cause for concern as it links directly to the idea of surveillance capitalism in the modern day, whereby a new economic order in which personal data is extracted from users by digital platforms—especially smartphones—and transformed into a commodity. This data is then exploited for profit, fundamentally shifting power dynamics in society. As scholar Zuboff states: “In the age of surveillance capitalism, personal data becomes the raw material for a new economic logic where *everything* is for sale” [38]. What adds to the sense of ethical calamity here are the *parallels* between Bentham’s ‘panopticon’ and this new structure of surveillance capitalism. Firstly, the elements of ‘visibility of power’ in the panopticon model relate to surveillance capitalistic structures in the sense that with surveillance capitalistic structures you know that your data is going *somewhere* - to one or more businesses, or to different governments. Secondly, the uncertainty of where your data is going reinforces the *unverifiability of power*. Both of these things lead to the *automatization* of power, whereby even if the surveillance is discontinuous in its actions, it is continuous in its effects. In modern-day, this means that you can't be sure that personal searches on Google or

personal activity on your phone won't be commodified and sold as profit to marketing companies. In turn, this surveillance feeds into individuals feeling like their freedom of expression is hampered as they are aware of the surveillance capitalist structures. Now, besides the ethical implications of privacy, we observe issues related to information overload; in particular, the 'time-space compression' created by the multimodal functionality of smartphones leads to increased strain on cognitive capacities and decreases overall wellbeing. Johnson states: "The paradox of connectivity is that while smartphones have enabled unprecedented global communication, the incessant barrage of notifications and information streams can overwhelm our cognitive capacities, leading to mental fatigue and decreased overall well-being" [39]. The ethical dilemma stems from the inherent tradeoff between communication and knowledge gained by spending time using the smartphone and mental health. There is a push towards learning more, doing more, and growing more, in a shorter time in society, and this directly conflicts with people's mental well-being and capacities. Moreover, this dilemma only becomes more pronounced as we cannot just get rid of the manifold functionalities from smart phones as they help in many other ways. As a final ethical issue to explore, we also see that smartphones contribute - directly or otherwise - to cultural homogenization and "North Americanization" of Indigenous cultures. Tewanee Joseph, a First Nations communicator, states: "Our traditional ways of storytelling are communal. When a technology designed for individual, instantaneous interactions becomes the primary medium, it risks diluting the collective narrative that has sustained our culture for generations." In a sense, this dilemma is similar to the previous one related to information overload as it is double-edged due to how it can foster greater connection in certain ways at the expense of other things,

whether that's decreased mental health, or, in this case, cultural homogenization. To summarize, the ethical landscape grows increasingly *complex*: while social media aids Indigenous communities in preserving oral culture – as depicted in section one – it simultaneously risks cultural homogenization, diluting collective narratives [9].

Final Remarks

Overall, we can now fathom some of the complexity associated with modern-day smartphones, and we especially see how this complexity rose compared to when the first telephones were introduced in the 19th century as smartphones became embedded with *multimodal functionalities* such as social media use and surfing the web. We touched upon a handful of events and perspectives that enabled a more nuanced discussion around the ethical implications of mobile smartphones. In short, we have given strong evidence supporting our claim that the telephone of the 19th and 20th centuries and the mobile smartphone of the 21st century impacted society in major ways. Based on such evidence, we believe that the impacts of the mobile smartphone are ‘quantified’ by the *depth* of their ethical implications. In general, smartphones will never go extinct – in fact, they will only multiply in terms of magnitude. However, for more constructive future use to better uplift the voices of Indigenous peoples and reduce the negative impact on society, an astute awareness and proactive response towards these devices is necessary.

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