Information Literacy: Importance and Consequences*

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Abstract

The brief for this lecture in honour of Prof. Gabriel A. Bernardo, the doyen of Philippine librarianship, was twofold — to explore what promotes informed societies and responsible citizenry, and to examine the supposition that there is a role for libraries in a democratic society. The paper takes the position that such an endeavour in the digital age must extend to all information professionals and informed individuals, since librarians are part of the information profession, and each is an individual, a citizen, an educator, and an information practitioner. It also proposes that discussion about informed societies and responsible citizenry is based on the proposition that societies and individuals have agency, that they can and do make informed decisions concerning governments and governance, that they must be informationally literate, a concept that includes the many literacies that emerge and overlap in the current, dynamic information environment.

The paper raises important issues of trust, ethics, allegations and responsibilities concerning the technology giants, in particularly search engines and social media. The intention of this paper was not to be partisan in these issues and debates, or to provide answers. Rather it was to persuade the readers that media and digital literacy mandate an awareness of these issues. Importantly, it was my objective to argue that not being literate in these matters has dire consequences for informed societies and responsible citizenry; and to argue that information professionals, in all their roles, have a critical part to play in this endeavour.

Keywords: Gabriel A. Bernardo memorial lecture, digital literacy, media literacy, information professions

INTRODUCTION

I would like to thank the University of the Philippines School of Library and Information Studies for the honour of presenting the 41st Gabriel A. Bernardo Memorial Lecture on informed societies and responsible citizenry, and the role of libraries in a democratic society. Gabriel Bernardo was "the thinker who plans, organises and administers the proper utilisation of materials and human resources of his library" (Verzosa, 1963, p. 527) but that was many years ago, and I am quite sure that he would approve of my extending the role of libraries in such an endeavour to all information professionals and informed individuals.

Any discussion about informed societies and responsible citizenry is based on the proposition that societies and individuals have agency, that they can and do make informed decisions concerning governments and governance. Such agency is built on the premise that societies and their citizens are informationally literate. In this paper, I will examine what information literacy entails in the first quarter of the 21st century and beyond in any civil society, including the Philippines. The paper explores some of the many issues, discussions and debates surrounding the myriad ways of finding information in the digital age. Through these lenses, I contend there are serious consequences of not being informationally literate. Finally, I will offer some strategies that those in the information professions, as individuals, citizens, educators, and information practitioners can employ to further such literacies.

WHAT IS INFORMATION LITERACY IN THE 21ST CENTURY?

According to a framework developed by the Association of College Research Libraries (ARCL, 2016), information literacy is a complex and dynamic concept. It expands the traditional Big6 model (see Eisenberg,

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2003; Eisenberg et al., 2010, p. E5420) that emphasises an understanding of literacy based on *problem-solving*, a research process that defines the information problem, determining and locating sources (including technology competencies and digital sources), using and engaging with the information, synthesising, and evaluating information. The ARCL framework incorporates notions of collaborative production and the sharing of information in participatory digital environments. It also contains fundamental keywords suggesting information literacy is a *reflective* discovery of information, an understanding how information is *produced* and *valued*, that its use *creates new knowledge*, enables *ethical* participation in *communities* of learning, and that information *authority* is *constructed* and *contextual* (p. 8). This is a similar position to that taken by Annemaree Lloyd (2019) who offered the definition that information literacy is "a practice that is enacted in a social setting ...a suite of activities and skills that reference structured and embodied knowledges and ways of knowing relevant to the context" (p. 1475).

However, no single definition can adequately show the full complexity and nuances of the knowledge, requirements, and competencies for responsible citizenship in the digital age, nor for the implications for information professionals as practitioners and instructors. Historically, information literacy was, and still is, often incorrectly conflated with "library instruction" (Head et al., 2020, p. 8). However, as early as 2002 institutions such as the European Union and the United Nations (specifically UNESCO) were concerned with a broader remit of education in information technologies in the developing digital environment (Tornero, 2004; WSIS Executive Secretariat, 2004). In fact, UNESCO from the last decades of the 20th century, was concerned with education about the media, asking the question "how can anyone become a fully functioning citizen in a democratic society if he/she is manipulated by commercial media?" (Thoman, 1990). Thus, any discussion of such information literacy must include myriad other literacies—including digital literacy, media literacy, visual literacy, civic literacy, and what has been called metaliteracy.

EMERGENT DIGITAL LITERACIES

According to UNESCO (Law et al., 2018), digital literacy is:

> *...the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy. (p. 7)*

However, this definition does not provide any indication of how the concept developed with the emergence of the information or knowledge age or society in the last decades of the 20th century (Bell, 1973; Machlup, 1962, 1980). Since then, with each technological development new terms appeared, for example *computer literacy, internet literacy, network literacy* and *hyper-literacy* (Bawden, 2001; Castells, 1996; Fillmore, 1995; McClure, 1994). Mackey and Jacobson (2011) put forward a new term that integrates new and emerging technologies with various other literacies; that "[i]nformation literacy is the metaliteracy for a digital age because it provides the higher order thinking required to engage with multiple document types through various media formats in collaborative environments" (p. 70).

Such collaborative formats were driven by the development and subsequent exponential growth and influence of social media platforms or network services (SNS) in the first decade of this century. Social media obviously includes the notion of digital literacy, and just as obviously, it must include visual literacy which "involves the ability to understand, produce, and use culturally significant images, objects, and visible actions" (Felten, 2008, p. 60). As Ely noted as early as 1984, "visual literacy is part of the media world, conflating visual literacy, media literacy and visual communication" (Ely, 1984, p. 104).

MEDIA LITERACY AND ITS CONTEXT

The most ubiquitous of information communications overtime has been the media, that is, the notion of mass communication, whether in print or by broadcasting, and including journalism, propaganda, opinions, etcetera. Any type of communication consists of the message and its method of delivery, that is, the media and medium.[1] In the 21st century the medium, the conduit or vehicle of mass communication, is now primarily through the Internet, its websites, apps and social media platforms. And the media is the content (the message) is communicated through text, sound, data and images. The *media* is thus both.

The Information Society as it emerged in the later 20th century, based as it was on a *technological revolution* and its current shorthand ICTs (information and communication technologies), had enormous impact on media. We now speak of the 21st century as one of a media culture (Tornero & Varis, 2010). As already noted, countries and institutions have been concerned about the need for education about media (Morsy, 1984) and by the early 1990s it was generally realized that media education should be restated as media literacy (Altun, 2011).

In 2008, UNESCO, noting that it had "become apparent that the concepts underlying [both] media and information literacy are inextricably intertwined" (Moore, 2008, p. 4), introduced a media and information literacy (MIL) initiative. It described MIL as:

> *...a composite set of knowledge, skills, attitudes, competences and practices that allow effectively access, analyze, critically evaluate, interpret, use, create and disseminate information and media products with the use of existing means and tools on a creative, legal and ethical basis (UNESCO, 2021).*

I would argue that the separation of *information* from *media* products, as in the MIL definition, is not tenable; they cannot be separated in a media culture, media is information and information is media. Nevertheless, it is reasonable to say that whatever the particular permutation of media/information literacy, it is an overarching concept that is the starting point in many professional practices and academic disciplines. One can provide a long list of such professional literacies, particularly within an educational environment, for example agriculture (Vallera & Bodzin, 2016), science (National Academies of Sciences Engineering and Medicine, 2016) and law (Schimmel & Militello, 2007) literacies. Certainly, health literacy is immensely important for decision-making in public health, not least of which among ordinary citizens (see for example, Baker, 2006; Nutbeam, 2008), and particularly with high levels of misinformation concerning the COVID pandemic (Paakkari & Okan, 2020).

CULTURAL LITERACY

No matter what the definitions, information/digital literacy cannot be understood in isolation from its context; as Lankshear and Knoble (2006) have said "literacies are bound up with social, institutional and cultural relationships, and can only be understood when they are situated within their social, cultural and historical contexts" (p. 12). It requires 'meaning-making' in particular social worlds, involving social relationships (Hoechsmann & Poyntz, 2012, p. 140), that is, to take into consideration the social norms embedded in the culture and its social relationships.

By way of example, Kathleen Obille (2018) speaks of the values or characteristics identified with Filipinos; social norms such as "*utang na loob* (indebtedness or being grateful), *hiya* (to feel shame or shyness), *delicadeza* (to be cautious), *pagtitiis* (to endure), *pakikisama* (to get along with) and *pagkakaibigan* (friendship)" (p. 552). Obille argues that these traits which ensure smooth interpersonal relations, are reflected in their behaviour online, particularly in their use of social media. Social media is extensively used in the Philippines, and Obille suggests that such values may be reflected in "liking" of posts and validation of opinions. However, the rise of political trolling (deliberatively provocative posting) in the Philippines (Cabañes & Cornelio, 2017) has led Renee Karunungan (2017) to plead "it's time we re-evaluate ourselves, check our values [my emphasis], and start becoming human again." This is possibly a plea for the use of non-confrontational language—the Filipino trait of *delicadeza*, to be cautious and to use non-confrontational language.

Finally, there one other type of literacy that is essential if citizens are to be informed and responsible members of civil society—civic literacy.

CIVIC LITERACY

> *...the knowledge and skills to participate effectively in civic life through knowing how to stay informed, understanding governmental processes, and knowing how to exercise the rights and obligations of citizenship at local, state, national, and global levels (Partnership for 21st Century Skills, 2019)*

I will return to the question that Elizabeth Thoman (1990) asked about manipulative commercial practices in her discussion concerning media literacy, but first, there is another important set of skills embodied in notions of civic and political literacies, which are not necessarily identical. Milner (2010) for example, believes that to be politically engaged, all citizens—the Internet generation in particular—have a need for "informed political participation", a phrase he suggests is synonymous with civic literacy, "since being politically informed and putting that information into practice are closely associated" (p. 17). However, the basis for both civic and political literacies is to be *informed*. This was pointed out by Crick and Porter (1978) when they stated that political literacy "involve[s] having notions of policy, of policy objectives, and an ability to recognise how well policy objectives had been achieved as well as being able to comprehend those of others ...[and] respond to them

[1] *Here, a nod to Marshall McLuhan and his not uncontroversial contribution to modern communication theories.*

morally" (p. 96). Milner (2010) also contends that to achieve political participation, education about political decision-making institutions and political issues is needed. This question of being informed includes how and where citizens find news concerning these issues.

According to the latest *Reuters Institute Digital News Report* (2021), the majority of respondents across all countries (74%) said they still prefer news that reflects a range of views and lets them decide what to think. However, the report notes that social media as a news source continues to be strong, especially with younger people and those with lower levels of education (p. 9). Indeed, only 25% of all people surveyed began looking for news on a website, and 18–24-year-olds (Generation Z) were twice as likely to use social media and apps (p. 10). The report also noted a "continuing move to closed messaging apps and more visual social media, as well as the continued widespread public concern over false or misleading information—especially Facebook and Facebook-owned messaging applications including WhatsApp" (p. 4). Of course, this stated concern does not denigrate the advantage of these apps for the immediacy of disseminating news concerning disasters and emergencies. In the Reuters' sample of Filipinos (2,029 interviewees), only 16% said they used print sources in the last week of the years 2016-2021, and across all ages, the use of social media and apps for getting news is extensive (see Table 1).[2]

Table 1
Social Media Platforms as Sources of News in the Philippines

Platform	Percentage of population
Facebook	73%
YouTube	53%
Facebook Messenger	36%
Twitter	19%
TikTok	6%

Source: Reuters Institute Digital News Report 2021.

It should be noted that there is a digital literacy standard for the Philippines (Republic of the Philippines. Department of Education, 2017) which mandates competencies in "navigating the digital global system to search for information and resources and communicate with others in everyday life" (Performance Standard D); "demonstrating ethical practices and values in using technology" including securing and protecting information privacy; and "digital higher order thinking—critically evaluate, share, utilize, and create digital content" (Performance Standard F). However, when asked about difficulties in popularizing, implementing and effectively disseminating this methodological standard, Filipino citizens noted several difficulties, including that of "contextualization, generalization from or lack of awareness of use cases[3]...[that there was a] need for training and development organization ...[and that there were] negative attitudes"[4] (Law et al., 2018, p. 109).

Of course, any type of information literacy not only stresses the selecting of sources, but also the ability to critically evaluate those sources. With so much information being delivered digitally via search engines, social media and other online applications, information literacy must include an understanding of the algorithms that select, curate and deliver that information. Indeed, Abigal Bakke suggests that all curricula should include algorithmic literacy. If as Lloyd (2019) suggests information literacy includes "how we understand and express our agency and our capacity to reflexively understand how information and knowledge is shaped" (p. 1476), then there is an enormous problem when algorithms deliver information, and we have no idea of how this is done and by whom. One needs therefore to question if in a digital, algorithmic world we really do have agency, that is the ability to act independently and to make our own free choices.

ALGORITHMS: FILTER BUBBLES, BIAS AND TRUST

> *The algorithms—useful and impressive as they are—have left us with a tangle of complications to unpick (Fry, 2018, p. 235)*

Algorithms are a finite sequence of well-defined, computer-implementable instructions, typically to solve a class of problems or to perform a computation. They are neither inherently good nor evil, but they have consequences—ethical, philosophical, psychological, and of responsibilities. Those who develop and use them within systems have enormous power and authority.

It has been long known that algorithmic systems harvest and store data about their users. In 2011, Larry Page, one of the founders of Google musing about adding personalized features to make Google more useful, said

> *...people need to trust us with their personal information, because we have a huge amount of data now and will have much more soon...Sensors are really cheap and getting cheaper. Storage is cheap. Cameras are cheap. People will generate enormous amounts of data. Everything you've ever heard, seen, or experienced will become searchable. Your whole life will be searchable (quoted in Edwards, 2011, p. 291)*

In the digital world of information algorithms have the ability to prioritise information for you (e.g., search engine ranking website results; YouTube suggesting what next to watch); they classify you in order to deliver selected content and associated links (and annoying ads); and they filter out or in, information based on data stored about you and your perceived interests. Such personalisation in effect, leads to gatekeeping, a role once played by journalism (Bruns, 2008; Pariser, 2011b). There is the additional complication that in this environment published material is often disaggregated and its delivery through social media, based on personal data trails for example, makes evaluation difficult (Head et al., 2020; Pariser, 2011b). All these factors raise the question is this a problem? And if it is, what are the implications for informed societies and responsible citizenry? And what can citizens and information professionals do about it?

By the 2000s, scholars began asking questions about the effects of algorithmic personalisation in both search engines and social media (Bozdag, 2013; Bruns, 2008; Pariser, 2011b; Sunstein, 2001, 2018). In 2001, building on Nicholas Negroponte's vision (1995), the legal scholar Cass Sunstein imaged The Daily Me in which people, "through technology are able to design their own newspapers and magazines ...containing exactly what they want and excluding what they do not want ...sort[ing] themselves into echo chambers of their own design". He argued that this supposedly utopian vision of complete 'personalization' would undermine democratic ideals" (Sunstein, 2001, pp. 1-6).[5]

Over ten years ago, Eli Pariser (2011a) galvanized his TED talk audiences by suggesting search engines and social media were doing "invisible algorithmic editing of the Web", in effect creating a "filter bubble" or "echo chamber", terms that according to Bruns (2019), have not been adequately defined. The notion of an algorithmic-driven information filter bubble has generated a great deal of attention and debate, from dire warnings of the detrimental consequences of users not knowing what content has been left out (Pariser, 2011b), to others who argued that the optimisation of content is beneficial for their users (Bruns, 2019; Goldman, 2005). Indeed, Bruns (2019, pp. 8–9) argues that there is little empirical evidence filter bubbles actually exist, speculating that moral panics around the "filter bubble" meme often also serve as part of a rear-guard defence of the old elites like mainstream media, that stand to lose the most from any change to the status quo.

This paper does not argue for or against either side of these debates. Its concern is if societies, their citizens, and their information professionals are to be informed and to have agency, they cannot be inert. They need to be aware of the existence of these questions about bias, manipulation and trust surrounding sources of information within the technology giants of search and social media. Commenting on their experiments on search engines ranking manipulations in at the time of elections, Epstein and Robertson (2015), concluded that of greater concern was the fact that when "people are unaware they are being manipulated, they tend to believe they have adopted their new thinking voluntarily" (p. E4520). Kosinski et al. (2013) contends that "liking" on Facebook can be used to "automatically and accurately predict a range of highly sensitive personal attributes including: sexual orientation, ethnicity, religious and political views, personality traits, intelligence, happiness, use of addictive substances, parental separation, age, and gender" (p. 5802).

And of trust? As noted above, Google needs "people need to trust us with their personal information" (quoted in Edwards, 2011, p. 291). When search and social media platforms use the powerful technologies of artificial intelligence (AI) and biotechnology to harvest personal data through sensors and eye-tracking front-facing cameras on your devices (Tsukayama & Romm, 2018), trust becomes both an issue and an imperative.

The historian and public intellectual Yuval Harari, in an interview said of the power and authority of the technology giants:

> *...liberal democracy trusts in the feelings of human beings, and that worked as long as nobody could understand your feelings better than yourself—or your mother. But if there is an algorithm that understands you better than your mother and you don't even understand that this is happening, then liberal democracy will become an emotional puppet show. (Thompson, 2018)*

[2]*The annual Reuters Institute Digital News Reports cover many countries; in the 2021 report analysis was for 46 markets, with an increased emphasis on the Global South.*
[3]*Among other countries making the same comment were Australia and China.*
[4]*Although an Australia interviewed in this survey noted "while attitudes are important and should be a part of digital competence assessment, what constitutes an attitude can be confusing and attitude shouldn't be merged with knowledge and skills as competence". See the discussion in this paper about cultural literacy.*

[5]*For an interesting discussion about filter bubbles and democratic theories, Bozdag, E., & Van Den Hoven, J. (2015). Breaking the filter bubble: democracy and design. Ethics and information technology, 17(4), 249-265. 10.1007/s10676-015-9380-y*

As users of the search and social media platforms one needs to heed the warning of Hannah Fry (2018, p. 26) not to blindly follow wherever technology leads you to go. There are considerations concerning the implications for privacy (see for example, Sætra, 2019; Zwitter, 2014), and for democracy as suggested by Harari and others (for example, Helbing et al., 2019).

THE ASYMMETRIC POWER OF TECHNOLOGY: A FRAMEWORK OF CONSEQUENCES

> *...the real problem of humanity is the following: we have paleolithic emotions, medieval institutions, and God-like technology. (Wilson, 2009)*

If we take seriously the statement of Larry Page, "your whole life will be searchable" (quoted in Edwards, 2011, p. 291), we need to consider the implications and consequences of the power of the search and social media platforms becoming technology giants in what van Dijck et al. (2018) call "the platform society". Helbing et al. (2019) noted that "the trend goes from programming computers to programming people" (p. 28). David Schultz, when considering search engine bias (see Epstein & Robertson, 2015), alarmingly commented "what we're talking about here is a means of mind control on a massive scale that there is no precedent for in human history" (para. 1).

The "emergent logic of accumulation in the networked sphere" is the concept of surveillance capitalism (Zuboff, 2015), in which people are the product that the technology giants are selling. Within the social media space, it is "the attention economy", that is, tracking the users' mental engagement on a particular item of information (Harris, 2017). Zuboff and others writing about surveillance capitalism, suggest there is a new economic order which claims human experience as free raw material for hidden commercial extraction, prediction, and sales.[6] Furthermore, they contend that it is a parasitic economic logic in which the production of goods and services is subordinated to a new global architecture of behavioural modification. Tristan Harris, a former ethicist with Google, has said

> *...a business model that is infused in the social communications infrastructure that 3 billion people live by, and are dependent on, is misaligned with the fabric of society and specifically poses a kind of existential threat to democracy and a functioning society. (Harris, 2020)*

Whether one considers these notions to be credible or exaggerated, the reality is that the current business model of technological giants is based on advertising. One has only to examine the 2020 advertising revenues of Google (USD 146.92 billion) and Facebook (approx. USD 84,2 billion) to consider the possibility of this proposition.[7]

It is these concepts which give the technology giants of the search and social media platforms great power.

WHOSE RESPONSIBILITY

It has been said that where there is great power there comes great responsibility.[8] We therefore ask, who is responsible? Should it be governments, through communications laws and regulations or should the search and social media platform companies be self-regulatory? Scholars and commentators are concerned that the search and social media platforms do not consider that they have an ethical duty of care (Harris, 2017; Zuboff, 2015). Axel Bruns (2019) writes of the social media platforms "at present there is an acute need to compel them (through regulatory or other means) to do more to remove extremist accounts, prevent the circulation of disinformation, and open themselves to independent scholarly scrutiny" (p. 9). The extraordinary allegations of the Facebook whistle blower, Frances Haugen (2021) who detailed how the company was "deliberate in its efforts to keep people, including children, hooked to its service" is one of many calling for regulation. Harris (2020) in his testimony to the U.S. Senate argued that "we are moving from a lawful society to an unlawful virtual internet society, and that is what we have to change; if nations have physical borders protection, then why not digital borders protection?"

While the world waits for either the technology giants act responsibly in the interests of civil society or for national or international governments to regulate against any egregious overreach of power, it remains the responsibility of the digital citizens. I would argue that the first step is to be digitally literate. This implies an understanding of privacy issues in the digital sphere, and within this environment to develop an understanding of and an ability to apply all the other literacies discussed in this paper. It also implies taking responsibility for individual information practices, such as making critical evaluations of online tools and to constantly updating knowledge of the digital landscape, and to follow ethical discussions and the regulatory aspects of technologically-delivered information.

CONSEQUENCES OF NOT BEING LITERATE: IMPLICATIONS FOR INFORMATION PROFESSIONALS

The issues and questions that have been addressed in this paper raise many questions and concerns for information professionals as practitioners, educators and as individual citizens. It is obvious that in all three roles, we need to be highly digitally literate. As an individual, constantly updating your knowledge of the digital landscapes seems a daunting challenge, which at one level, can fall under conventional continuing professional development through both formal and informal methods (Julien, 2018). Formal methods can be international cooperative initiatives like the Training Centre Network for Librarianship and Information Science (Robinson & Glosiene, 2007), and many national and international professional associations and consortia. However, many of the formal methods may not meet individual development needs (Greenhow et al., 2019), and in an environment where the use of social media is ubiquitous, many scholars have suggested that the use of social media platforms can be used to build communities for sharing knowledge and resources (Corcoran & McGuinness, 2014; Luo & Hostetler, 2020) and for establishing mentoring relationships (Krutka et al., 2017).

In one's role as an information professional, it is important to forge key trusted partnerships with community-based organisations (Detlor et al., 2020), such as with public libraries "as part of the educational ecosystem and as resources for promoting digital and information literacy" (Horrigan, 2015, p. 5). In matters of local, national, and cultural information, partnering with local newspapers (print or digital) that maybe considered trusted sources and therefore can extend literacies for responsible and informed citizenship. This could include, for example, the provision of factual information to counterbalance mis- or disinformation concerning public health (Henrich & Holmes, 2011); as a way to increase social inclusion among ethnic populations (Katz et al., 2012); or citizen participation in local heritage planning and implementation (Swensen et al., 2012).

Finally, reaching out to community groups and non-government organisations, local businesses, and industries in particular fields of study, and to professional associations such as health and legal professions, all of which have specialised knowledge and expertise that can be passed on. The development of strategic partnerships with these organisations, could not only deliver aspects of continuing professional information, but also collaborate in workshops, projects or internships (Hobbs & Coiro, 2016).

CONCLUSIONS

The brief for this lecture in honour of Prof. Gabriel A. Bernardo, the doyen of Philippine librarianship, was twofold. To explore what promotes informed societies and responsible citizenry, and to examine the supposition that there is a role for libraries in a democratic society. I have taken position that in the 21st century—the digital age—such an endeavour must extend to all information professionals and informed individuals, since librarians are part of the information profession, and each is an individual, a citizen, an educator, and an information practitioner. The paper assumes that to be informed is to be informationally literate, a concept that includes the many literacies that emerge and overlap in the current, dynamic information environment.

In this paper, I have raised what I consider to be some of the important issues within this digital environment. These include a discussion of the algorithms that drive the information world of search and social media platforms, their filtering of content based on personal preferences, and their perceived biases. I have also introduced issues of trust, ethics and allegations that have been raised by scholars and commentators that these technology giants work on business models that are detrimental to individuals and society, and ipso facto, to democratic principles. These questions hopefully have raised the reader's awareness of the power and responsibilities of the technology companies that deliver information content, and leads them to ask if there is a problem, and if the answer is yes, what should be done about it?

The intention of this paper was not to be partisan in these issues and debates, or to provide answers. Rather it was to persuade the readers that media and digital literacy mandate an awareness of these issues. Importantly, it was my objective to argue that not being literate in these matters has dire consequences for informed societies and responsible citizenry; and to argue that information professionals, in all their roles, have a critical part to play in this endeavour.

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[6]One of the more infamous incidents of social media data harvesting is the 2010 Cambridge Analytica scandal; see Isaak, J., & Hanna, M. J. (2018). User data privacy: Facebook, Cambridge Analytica, and privacy protection. Computer, 51(8), 56-59. 10.1109/MC.2018.3191268
[7]Source: Statista.com
[8]Winston Churchill, among many

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