New Media

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When considering what leadership means in the context of new media, two distinct, but overlapping, versions of the past tell this story. However, the prologue to these histories is the rise of *computer culture*; first in the *work place* and subsequently in the *home*. The character of these developments is made most explicit by Klaus Mainzer (1998) who argues that the post-industrial world exists within the second computer age. This entails a shift from the inanimate processors that described the calculating machines of previous decades, to an era of autonomous computers, where machines learn and become more like biological life. A decade after Mainzer wrote, developments in artificial intelligence were beginning to encroach into the everyday world. Yet, as significant as these processes have been in developing the context within which new media could evolve, focusing on their histories would detract too far from the more recent history of *new media*. Indeed, what distinguishes a debate about new media, from a debate about the World Wide Web, the Internet, cyberspace or computers more generally, is how the concept of *media* has altered and been appropriated by different communities throughout this period. Thus, the concept of new media takes numerous forms, each with different roles within society and this chapter will endeavor to reveal why the new media cannot be treated as a singular entity.

The two histories that have currency when thinking about new media concern the *rise of the Internet* and the *transformation of traditional media outlets*, a discussion about which will form the first part of this chapter. Subsequently, it will examine specific features of new media, which have particular currency for debates about leadership. These are first the rise of *open source culture*, which has shaped the technical architecture of new media, but which has, more importantly, become a metaphor for how leadership and innovation ought to work in cyberspace. Subsequently, the chapter discusses how open source culture has given rise to new forms of economic labor online. This debate centers on the rise of *user generated content* – the catalyst that lead to *Time* magazine awarding its Person of the Year to "You" in 2007, drawing attention to the fact the Internet has been constituted by the ideas and creative expressions of every day people, rather than, for example, the creative industries.

Finally, this chapter will consider the implications of these changes for leaders within a range of organizations, drawing attention to the importance of individual, rather than just institutional investment or relying on public-relations officers to make indirect contributions to engagement on behalf of leaders. Perhaps the most important change that has occurred online, from the perspective of organizations, is how the process of communications and marketing, has been forced to retreat from a strong push, towards incremental small conversations that aim to go viral and which subsequently permit the

building of reputation and community in ways that have long term credibility. This is enabled by the architecture of new web environments, but notably through the way in which information is now distributed through Really Simple Syndication (RSS) and "mashing up" data, as the next section begins to explain.

The Rise of Internet

The early history of the Internet spans the popularization of Web 1.0 in the mid 1990s the growth of Web 2.0 in the mid 2000s and the emerging mobile era that followed. While the roots of these eras may be located within military applications (Salus 1995), early consumer based innovators in this version of new media history are Amazon, eBay, Google, and more recently, social media platforms, such as Second Life, Facebook, YouTube and Twitter. The cornerstone of their early development was rooted in the concept of interactivity and connectivity, whereby digital encounters provided new opportunities for interacting with others. Yet, it also encompassed the possibility of creating links between different forms of intellectual property, whether through the consumption of goods, or by the formation of virtual communities.

Early opportunities for online innovation were created through new worlds in the form of chat-rooms or Multi User Dungeons, which brought about a shift in how people experienced human communication (Haraway 1985; Turkle 1995). Such environments became new spaces for real-time social interaction, which would become a core feature of sustainable online communities. Even online networks – such as Facebook or Twitter - rely on this principle, where the most effective social networks are those that are most successful in bringing people together on a recurrent basis.

These new forms of human interaction were innovative and exciting since experiences within them challenged the boundaries of common concepts, such as the family, generational boundaries or sexuality (Rojek 1995). Cyberspace allowed people to escape from the values and constraints of lived, physical culture, both in terms of its commodification and its conventions (Rojek 1993). To this end, new media culture was seen as a system of emancipation, empowerment and agency, through which one could go anywhere and do anything. Moreover, outlaw hackers populated the Web and activists, utilizing it to disrupt the power base of dominant organizations and governments (Russell 2005). In this respect, the Internet became a place that championed the free distribution of information, and one may even conjecture that this has had a concomitant impact on what was expected from leaders in terms of access to information.

Indeed, the pursuit of freedom defined early examples of intellectual leadership that surrounded the growth of new media, championed through such literary works as William Gibson's (1984) *Neuromancer* and theorized by early scholars such as Howard Rheingold (1993) and Sherry Turkle (1984). These themes pervade more recent explorations of how people experiment with their identity online (Valkenburg, Schouten, and Peter 2005). While there are numerous examples of how this is played out, perhaps one of the most interesting was the 2010 episode named *#cablegate* on Twitter, the online system for communicating very short text messages that had become very popular at the time.

Cablegate is the term given to the controversy surrounding the publication of classified United States diplomatic cable leaks in 2010, published online by WikiLeaks, the new media organization. Cablegate was a story that requires explanation in the context of new media, centering on the increased importance of freedom of information in a digital era. It is likely to be a story about cyberspace that will live on for years to come, as have the discussions about other landmark events, such as the 1993 symbolic rape in LAMBDAMOO, an online community that was a significant text-based predecessor of the later graphic-based virtual worlds (Dibbell 1995). Other examples include the eBay auction of a human kidney (Boyd 2002) and activism surrounding the Iran elections of 2009, where Twitter was said to have been influential.

Admittedly, these episodes are often characterized by an absence of clear evidence to support the claim that they were transformative - for example, that Twitter changed the 2009 Iran election. However, it is often discussed in traditional media forms that the Internet had been a prominent catalyst for change. In the case of Iran 2009, the debate seemed more to be about the Western world gaining a glimpse of what was taking place in an election that would have, otherwise, been impenetrable to understand while it was happening, due to the restrictions placed on foreign media.

What distinguished Cablegate was the manner in which public participation in the event spread via Web 2.0 environments, notably Twitter. First, this entailed controversy about why the Twitter hashtags *#wikileaks* and *#cablegate* were not trending. In turn, this led some Twitter users to claim that Twitter had been censoring specific terms in their search database, a claim that Twitter denied by explaining how trending works. Second, these concerns were exacerbated by the fact that certain websites hosting the leaked information were rapidly disappearing from servers, which quickly brought into question the integrity of internet service providers and the foundational proposition that, if something was available on the web, it could not simply disappear as a result of political pressures. The Internet was supposed to be a distributed information system. Yet, due to the sensitivity of the leaked information, various organizations became implicated in the matter. For example, the MasterCard and Visa credit card companies stopped payments to WikiLeaks, and hactivists calling themselves Anonymous staged brief denial of service attacks on several websites in retaliation.

In this case, knowledge about what was taking place in real-time was experienced for many people through the short messages sent through Twitter, using the tags *#cablegate* and *#wikileaks* to draw together all contributors. Users interested in this issue would always include these key terms in their tweets so that others could follow the progress of the conversation. Thus, the case became symbolic of the expectation that new media has the capacity to make an important contribution to the public sphere, where traditional media forms may fail. Moreover, all of this took place alongside allegations of sexual offences towards Julian Assange, the Editor in Chief of WikiLeaks.

Yet, the expectation that new media should change society in critical ways means that the impact of new media may also be exaggerated or even misrepresented - the human kidney story in eBay is often described as having been little more than a prank. Nevertheless, it was a news story that was discussed widely in the press. There are numerous examples of organizations that have staged similar stories that turned out to be little more than pranks,

as part of a PR campaign. For instance, Ron's Angels was a website that claimed to auction human sperm and ova, thus allowing people to purchase the genes of their children. It turned out that Ron Harris – a successful pornographic film director – was not running any such organization at all, but the provocation alone allowed a debate to take place in society that may otherwise have not. Indeed, during the early 2000s, second wave web theorists criticized the utopian expectations of new media, drawing attention to the lack of evidence to support the claim that they allow us to transcend physical world boundaries. Discoveries in empirical research that physical offline dimensions were simply imported to online environments had tangible impacts on how innovators approach an understanding of new media culture. For instance, it became apparent that the World Wide Web may exacerbate problems of inequality – such as by the inaccessibility of many websites.

Additionally it became apparent that there was a growing *digital divide* which required strategic thinking to address. The concept of the digital divide is apparent throughout digital cultural studies, though Hayden and Ball-Rokeach (2007) provide a useful update to the critique, demonstrating that the problem with the divide is cultural as well as technical. The problem was increasingly about *digital literacy*, as every month a new platform emerged online calling for users to learn something new and reconsider how they use a computer or a mobile device. A further dimension to this concern was the realization that the absence of standard web design protocols meant that accessibility was only sporadically addressed and organizations like the World Wide Web Consortium (W3C) emerged as a leader in developing a recognizable standard to which website designers would be asked to adhere. In any case, leadership in this context involved realizing that the Internet did *not* provide the panacea for society's social problems that some believed it would bring about and adapting accordingly.

Transformation of Old Media

The second trajectory in the history of new media describes how traditional media structures changed throughout the development of digital and web based technologies. This story is also complex and involves examining different types of "old media" organization. However, it includes such prominent examples as the *Time Warner* and *AOL* merger for $163 billion that occurred around the time that the "dot com" bubble burst. This version of history also encompasses the adaptation of traditional media organizations to new media environments and the rise of new media organizations, such as Google. The significance of this cannot be overstated when trying to understand how it has positioned the media industries around new media, as Kellner (2004: 34) explains, when discussing what became *AOL Time Warner*: "This union brought together two huge corporations involved in TV, film, magazines, newspapers, books, information databases, computers, and other media, suggesting a coming synthesis of media and computer culture, of entertainment and information in a new infotainment society."

Their subsequent separation is also important, when trying to understand how the different creative media industries have positioned themselves around new media start-up companies over the decades around 2000 and how power relations have gone through various transformations. It is unequivocal to claim that traditional forms of media have been quick to adapt to the emergence of new media. Indeed, in some ways, they have

constituted innovation in new media. For example, the dominance of certain news agencies continued despite fragmenting audiences. Some broadcasters diversified their portfolio by either creating new television channels or by offering more variety in viewing by using interactive television. For example, the UK's BBC, created such channels as BBC3, BBC4, BBC News 24, Children's BBC and expanded its BBC World Service over the first decade of the twenty-first century.

For the printed press, media change was apparent in various forms, in part due to the capacity of digital technology. For instance, in the USA, the Huffington Post launched in 2005 as a new model of *online* news publishing. In addition to its core staff, it relied on around 3,000 prominent figures to blog content to its site, thus augmenting its primary staff contributions. Content was integrated within the main sections, where both staff writers and open editorial writers occupied the same stage. As well, free news wire services like Project Syndicate provided access to a wide range of public intellectuals and content from minor press organizations to source content. Of course, these examples say nothing of the thousands of new media outlets that may be characterized as citizen journalism environments, which were often doing the work of journalism. Perhaps one of the most relevant dimensions of the rise of news blogs was that their existence signified a rejection of institutional authority (Wall 2007: 167), which itself can convey learning points for leaders within such institutions. Thus, the blogger may be seen as the heroic champion of freedom, opposed to the organized and character of the media, which has financial profit as its bottom line.

This utilization of non-staff writers was not unusual to the press – op eds and feature writers were a common part of newspapers for years - but it may signal an increasingly important part of the printed press infrastructure. A similar transformation took place in the UK, in various ways. For example, the *Guardian* newspaper, created space for prominent intellectuals to occupy their online territory of the Guardian newspaper. Also in the UK, the Independent launched a scaled down version of its newspaper for 20p – rather than the daily £1 – which aimed to rebuild its readership. A core need here was to develop new markets, and some papers, such as the *Times* adopted a pay-wall structure online to create new subscriber markets.

Given all of these changes, it would be untrue to say that traditional media organizations were slow to adopt new media platforms. Indeed, news media organizations were second only to celebrities in the highest ranking twitter accounts. In December 2010, the online rating service Twitaholic.com reported that the Cable News Network (CNN) was leading. The Twitter rankings reveal the North American bias in its user base, so one may not extrapolate too much from this statistic, but it certainly suggests that the previous wave of media companies were moving into the new media.

Media Change

Together, these two histories provide a comprehensive characterization of 20 years of media change. Yet, each of them stands opposed to other trends towards media change, which have to do with the way that citizens and, traditionally, non-media began to use media technologies to create their own communication channels. Examples of this range from public institutions that set up their own television channels – such as the European Union or arts organizations, such as the Foundation for Art and Creative Technology – to artists who are creating new media artifacts as commentaries on media

culture, or as a way of designing new cultures of media engagement. For example, consider Steve Lambert's *AddArt*, which created a plug-in for the Web browser Firefox, which would transform advertisements presented by Google into art works. In so doing, Lambert's intervention may be seen as a critique of new media culture by transforming the user experience of the platform and subverting the financial model on which Google specifically but web 2.0 companies more generally, is based. Alternatively, the *Yes Men* created a fake version of the *New York Times*, which was distributed around Manhattan, with such headlines as "Iraq War Ends."

For each of these historical trends – indeed, for the different sectors with which they are associated - different principles of new media leadership are evident. For some, new media is a device that celebrates the repoliticization of the public sphere, disrupting the relationships between organizations, governments and individuals. For others, new media offer the opportunity to create new aesthetic propositions, which may be simply providing a space for people to express their intellectual or creative talent, or a way of simply selling more products. Of course, these different interpretations of new media are not mutually exclusive.

Yet, given these competing histories, an enduring question remains about where leadership begins in the context of new media. Does it begin within the avant garde art work of the *Yes M*en, or through the creation of the BBC iPlayer? While often the most well resourced organizations have the best opportunities to innovate – as may be said of the BBC iPlayer - it is also apparent that new media start-up organizations often contribute in critical ways to significant media change. Indeed, some of the biggest success stories online have been just like this, as might be said of all relatively new, new media giants, like Facebook, Twitter or YouTube.

As well, one of the central debates of each of these histories is whether the media change that took place was a change in kind or in degree. Thus, can we observe a disruption to the way that media operates, or do new media simply replicate traditional media structures and forms, as have been evident for the large part of the 20th century? Clearly, the answer involves a mixture of the two, but establishing which aspects are clearly transformative and which are more of the same, is crucial to understanding where leadership occurs.

Equally, there are clear differences in how new media leadership occurs in different sectors. Consider the contribution to imagining the new media era by avant garde NetArt movements, one dimension that characterizes this work is the gradual erosion of the concept of authorship, where artists are often known through their collective community – such as the Critical Art Ensemble. This erosion of authorship may indicate the desire to move away from a culture where individuals – and thus, the notion of leadership often championed in popular culture through the concept of celebrity - are the locus of credit and where the collaborative character of societal participation is given due acknowledgement. After all, what often characterizes new media innovation is processes of collaboration, as may be said of Wikipedia (Stacey 2008).

Alternatively, leadership in traditional broadcast organizations has involved finding ways of commanding a significant presence within new media environments, perhaps one good example of which is CNN's (owned by Time Warner) YouTube channel. Indeed, examining the most prominent accounts within Twitter, it is evident that personalities that occupy the mass media sphere remain the most successful Twitter users, at least in terms of

audience following. Of course, counting Twitter followers may not be a particularly useful method to evaluate leadership online, a more effective method would look at how content influences followers. For example, Klout.com uses 35 variables from Facebook and Twitter to estimate online influence.

In each case, it is clear how the media industries have always been dynamic in their adoption of new technology. Indeed, many have been at the heart of innovation. It is also apparent that, when thinking about new media leadership, old media organizations are among the first to innovate, as they become increasingly reliant on developing new audiences to sustain their organizations. However, one of the fundamental tensions here is the repositioning of such organizations' intellectual property since, as new media require the opening up of IP to "sharing" content across platforms, this can be seen to frustrate the control of IP. However, this model is also changing through what may termed "open source culture."

Open Source Culture

From very early on, a driving principle of innovation in new media has been the development of *open source culture*. As indicated earlier, this concept has two primary derivations, first as a technical methodology for developing software, but also as a loosely characterized philosophical approach to working, that has shaped numerous processes within digital culture. Its technical derivation relates to methods of programming, whereby developers of software would make available (open) the *source code* of a program, in order to allow third parties to understand how it has been developed and to contribute to its improvement. A substantial history of open source is available elsewhere (e.g. Sowe, Stamelos, and Samoladas 2008), but the crucial elements to highlight here concern the way that software is utilized and developed by user communities which, in term, becomes constitutive of new media culture. Consider the earlier – but still concurrent – development of freeware, which permits an end user to access a piece of software without needing to pay for a license. In contrast, open source software, in addition to being freely available for end use, would allow that user to help develop the software and improve it for the entire community.

The term *open source* has also become symbolic of innovative working practice in new media communities, championing the value of sharing rather than protecting intellectual property. The implications of this shift are far reaching and provide further insight into what characterizes leadership values in new media. To the extent that the software is developed by a distributed community, the concept of single person ownership makes less sense, calling for a rejection of copyright and the rise of embracing what some call "copyleft," a form of copyright that makes available a piece of software for development by third parties, while ensuring that all subsequent versions remain free to use as well.

If one examines the development of Creative Commons as some indication of a copyleft movement, it is apparent that leadership involves the combined force of scholarly research or intellectual communities and the adoption by industry leaders. Indeed, Pavlik (2001: xv), claims that leadership in new media culture will require collaboration between "the academy and journalists," in order to allow journalism to fulfill its democratic function. We may even identify how current market leaders in digital culture have begun

in academic settings, such as Facebook, which began life in Harvard or Creative Commons, the foundation of which was intimately connected to the work of university professors Lawrence Lessig (2001). One may further argue that the revitalization of the public intellectual derives from these circumstances as thought leaders such as Clay Shirky (1995) have been able to occupy the public imagination about the future of communication. Moreover, such developments as the Electronic Frontier Foundation (EFF), founded by John Perry Barlow and Mitch Kapor, which undertakes advocacy on behalf of freedom of speech, information privacy, and other causes connected to the new media.

New Economics and Freemium Labor

The kind of legacy advocacy undertaken by the EFF may extend naturally into the way in which new forms of free labor have merged online. When *Time* magazine awarded Person of the Year to "You," it drew attention to the contributions people make online through user generated content. The importance of this was reinforced three years later when *Time* awarded the same title in 2010 to Mark Zuckerberg, CEO of Facebook. With over 500 million users, Facebook has become a symbol of the web 2.0 era, which has elevated the contributions of the average web user, principally by providing a non-technical means through which anyone with access to a web browser and minimal knowledge can publish and share content without having to learn any markup language like HTML or XML. To this end, "You" became the driving labor force within the new media economic model, and the goal of many organizations would be to transform this into money.

What characterizes these new forms of labor in monetary terms is the development of new models of accruing economic value and this exploration tells us a great deal about how leadership is changing in an era of new media. Notably, there have emerged two primary models through which new media organizations are making money. The first is through the sale of user generated data – browser history, for example, which translates into more sophisticated, targeting advertizing strategies. Facebook and Google are among the most successful social media examples of this economic model.

The second model is through the *freemium* (*free* plus *premium*) principle whereby software is developed and published for free, in the hope of a large uptake, which would give rise to a an extended user community that is willing to pay a premium for additional functionality. A number of good examples exist that demonstrate this model. However, it is also useful to see emerging companies who adopt a similar model, such as *Prezi* a "zooming presentation" software, which uses Flash and a web-based interface. Prezi offers a number of license options, including a free public license and an educational license, each with different levels of functionality. As of 2010, Prezi offered three kinds of "license." The public license was free and offered 100 megabytes of storage space. The "enjoy" option offered 500 megabytes plus the ability to control the privacy and watermark status of the content, costing $59 per year. The "pro" option added the ability to work offline, offered 2000 megabytes, and cost $159 per year. Given that individual presentations in Prezi could easily exceed the 100 megabyte limit of a free account, the incentive to purchase a "pro" license was attractive.

At the heart of these new models of developing web 2.0 platforms is the utilization of "user generated content," which fuels the exchange across

various platforms. For example, in the application Slideshare, users upload and share their presentations, the content of which is then used to create targeted advertizing within the web-based interface. Facebook may be thought of as an application aggregator – perhaps one of the most successful – allowing users to both upload direct to Facebook or to embed content from other applications, such as Flickr, YouTube and so on.

However, while this sharing of content has become a necessary part of successful web strategies, there are still challenges that organizations or leaders may face in orientating themselves or their organizations around these new spaces. For instance, it may be said that there exists considerable uncertainty about how to treat the public space of Twitter correspondence. For instance, English Member of Parliament Gareth Compton had charges brought against him when tweeting: "Can someone please stone Yasmin Alibhai-Brown to death? I shan't tell Amnesty if you don't. It would be a blessing, really." Compton subsequently admitted wrongdoing and that his comment was meant as humor, but it is one of many examples where a social media user has failed to realize the implications – both legal and moral – of this publishing device. Yet, despite such catastrophic errors, Compton at least was producing his own content on twitter rather than employing a press officer to do it for him and this coheres with a further priority when thinking about new media leadership, that of personal investment.

Personal Engagement as Leaders

Recent transformations in new media culture have enabled individuals to be more directly connected to each other in a public online setting. Where email enabled fast paced private exchanges, social media allows private correspondence to become public and part of the "attention economy" (Davenport and Beck 2001) that drives new media culture. This aspect of the new media environment speaks to two trends that emerged online. The first is the shift from anonymity to hyper-visibility. Thus, if the Web 1.0 era was shaped by identity play, experimentation and the desire to experience human interaction without the burden of knowledge about the other, the Web 2.0 era may be seen as a response to this, perhaps even a growing confidence in digital users. In this era, most successful online platforms were predicated on sharing content about one's identity, whether this is photographs, video, or text. Moreover, public commentary on the content of others further reinforces that visibility.

Leadership within the new media climate requires personal engagement, rather than simply relying on press officers or web strategists to undertake the direct communication on behalf of the leader. Indeed, choosing to rely on such institutional communications alone can be a major public relations error, or, at least, will lead to very limited impact on a community. This is because a key dimension of successful web strategies is the development of *trust* between individuals, and one of the most effective ways to achieve this is to allow direct interaction between people. Numerous studies have identified trust as a crucial aspect of digital culture, whether it is searching for information about health (Wyatt, Henwood and Hart 2005) or buying an item from eBay. In fact, within such platforms as eBay, the development of trust occurred through building reputation, an increasingly common feature of social media culture. Of course, this creates additional burdens and responsibilities for leaders. For instance, platforms like Twitter

function most effectively when users are able to undertake regular and sustained contributions, engaging with other users directly in conversation. Yet, this may require the use of mobile technology in order to make time for such activity, which might also mean additional work outside of office hours.

As well, social media may even transform the role of certain people within organizations, notably public relations (PR) officers. While it is unlikely to make them redundant, the expectations of a PR officer may change and require more direct interaction with the community of followers. This transformation also speaks to changes in the news cycle. Thus, PR is not a practice that relies on a singular notion of how the media work. The notion of a PR has changed, as has the place where journalists can be reached. For example, specific principles about where a logo is placed within a page or on a website makes little sense in a climate where RSS feeds enter mobile phones without any branding except perhaps for an image icon to convey the identity of the user.

However, more critically, the culture of publicity is changing to a situation where every member of an organization can be a catalyst for publicity. Consider the example of an arts institution, which has gallery assistants staffing the exhibitions on a daily basis. With very little technology, these people could become ambassadors for the institution by generating content in social media environments, without having to leave their stool within the gallery. This could dramatically transform the impact that an organization may have online without requiring any additional major investments. Each individual within the organization will have their unique social media identity and community allowing the organization to reach out through its core community – its staff – to communicate its work.

Conclusion

The proliferation of social media may bring into question the significance of the term *new media*. Yet, the concept of "the new media" requires addressing in such as way as to acknowledge the various forms in which innovation has occurred around media platforms generally and their cultural integration specifically. This involves taking into account the role of dominant media organizations, as well as considering prominent new organizations. Indeed, when trying to assess future directions in new media, these various elements are essential to take into account, so as to not naively embrace the cyber-libertarianism of the 1990s. However, it also crucial to acknowledge, so as to understand the important ways in which new media artifacts have transformed society to various degrees.

Yet, a great deal remains uncertain about new media culture For instance, if one were to characterize an ideal online population, then there are some limiting factors that one must acknowledge. For instance, consider Robin Dunbar's (1992) claim that people can, at best, maintain meaningful human relations with perhaps no more than 150 people, beyond which it becomes harder to claim that the relationship has any significance in the person's life. Dunbar's claim is simply that people do not have enough neurons in the brain or hours in the day to dedicate to many more people. Thus, within platforms like Facebook, where some users build so-called "friend" connections with over 5,000 people, Dunbar's number would question the legitimacy of the concept of "friend" here.

Equally, there may be an ideal ratio of consumer to producer of content that must be acknowledged, in order to optimize the functionality of communities. For instance, if all Twitter users produced vast amounts of tweets each day, there may be limited capacity for any single user to digest this information or to utilize it in any meaningful way. To this end, it is necessary to identify the different roles of an online population, but also to continually scrutinize the way that information is made sense of by user groups. To assist here, we may employ language from gaming environments. Crucially, this recognition disrupts the concept of leadership considerably, since it is no longer the role of one individual to take initiative. Consider again the #cablegate example, which relies heavily on numerous individuals sharing information to permit people to follow what was taking place online. In short, within a platform like Twitter, the person who re-tweets content, may be as much of a leader as the originator of a tweet. Indeed, these two people may be leaders in different sectors completely.

Yet, the development of new media ought not be seen as simply a matter of technical innovation. Rather, there is an important cultural shift that must take place, in order for new media to have meaning for people. This shift entails having access to technology and thus, bridging the digital divide. However, as this gap closes, it then requires addressing the *digital literacy divide*, which is unlikely to reduce with time. In fact, it may continue to expand, as the pace of change online increases and new platforms – along with knowledge about how to use established platforms in more sophisticated ways – grows.

In turn, leadership in this area requires investment into both aspects at a macro level – in terms of the development of the industry – but also at the micro level – in terms of personal contributions from individual leaders. Indeed, there is an intimate relationship between the two, as the process towards technical innovation requires immersion within the digital cultures of early adoption that permits incremental development.

This simple observation – that one should build community rather than technology – draws attention to a more complex proposition that what distinguishes virtual worlds is their amplification of the social world. Thus, virtual worlds must be seen as a parameter of social interaction in physical worlds and the task of developing virtual realities is of creating seamless experiences, where the most effective virtual experiences are those that most closely approximate the level of intimacy that can be achieve among people in physical worlds.

Thus, the story of new media is not wholly of technological progress, or even user demands for better, more dynamic experiences. Rather, there is a considerable amount of nostalgia that now forms part of virtual world experiences. Generations of people that grew up playing computer games now seek to relive these periods, in the same way that they may watch old films or re-read books. Consequently, although the technology of virtual worlds is improving and, as a result, is offering new and alternative ways for us to connect online, the existing platforms do not always vanish with their predecessors. Instead, they appeal to the similar goals of promoting interaction between users and online identity representation.

Looking ahead, Mainzer's second computer age was drawing to a close, as discussions about Web 3.0 and the semantic web grew. With the advent of improved mobile technology, from wireless internet (wifi), "smart" mobile phones with stronger phone signals which carry data (3G) and small

laptops (netbooks), the ways in which people are interacting with the Internet shifted once again. Tools such as global positioning systems (GPS), which allow the user to add the details of their location while they share information, open up possibilities for locative media to emerge. Furthermore, the ease in which people can participate in multimedia dialogue using mobile devices, allows for networks of communities to continuously engage with the virtual worlds in which they inhabit, without being bound to the restraints of a desktop computer terminal.

The close links between geography focused communication tools – *locative technology* - and the increased imposition of the digital world onto the physical one, has lead to the creation of devices that create layers of information and a seamless correspondence between the offline and online world. At the forefront of this development is augmented reality (AR), a protocol that utilizes a mobile phone's camera lens to display details about the world. When AR is enabled on a mobile device, the user can point their phone's camera at a place in the physical world and be shown layers of information that are relevant to that location. For example, if a tourist is visiting the Eiffel Tower in Paris, she could point her mobile phone at the tower and, on the screen of the phone, would appear information about the Tower's history and so on. This relatively new technology uses mapping software, which the phone has associated with its geographical position (via GPS) to provide real-time guides to real-world places. The range of uses to which this may be put are just beginning to emerge, but range from providing information about local amenities, travel information, or to other people, who are using similar services. Social media platforms such as Twitter and photo sharing website, Flickr, added GPS details (metadata) to the content that people create, so that AR could "mash-up" data for use across a range of populated locations.

Additionally, there is still a long way to go before the *convergence* of digital systems that was discussed in the 1990s is complete. While we may certainly recognize that media organizations are much more aligned, there is still scope for development across different sectors. In November 2010, founder of the World Wide Web Tim Berners-Lee told journalist Charles Arthus of *The Guardian* that the future of journalism is in analyzing data. Yet, the device through which this process engages user may require much more creative work. One version of future leadership in journalism may involve news media organizations becoming architects of sophisticated data gathering games, reliant heavily on the contributions of citizen journalists who will develop their own sense of ownership of and engagement with the story through their active participation in its development.

Equally, there remains an ever-expanding lack of knowledge about user experiences of the same platform, or, indeed how use evolves over time. For example, Twitter had a range of software, which assists users in filtering and displaying information, such as Tweetdeck. This software permits users to embed images – thus no longer requiring a user to move from Tweetdeck to another platform, such as Flickr, or YouTube. For all intents and purposes, this removes the role of the Web browser completely and, perhaps signals the end of the World Wide Web as an interface. These elements all point to the need for further knowledge about new media experiences, both to understand how use may change over time, but also to come to terms with which forms of leadership will be most fruitful to adopt.

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