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# Technology in media and communications: catalyst, enabler, or driver of change?

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## **Abstract**

In today's world of always-on connectivity, convergent communications and media pervasiveness, it would be difficult to deny the pivotal role of technology in changing the shape of society in general and communications specifically. The 'art' of communication is unrecognizable in comparison to what our predecessors would have had to go to in order to speak with relatives, friends and business contacts. And by predecessors, we do not need to search back far— just through one generation to the world in which our parents were raised is enough to ring the changes. The question is whether it is the technology itself that is driving evolution in our communications environment. To what extent is the rate of technological change in communications media exerting a direct influence on aspects such as the need for regulatory change in the industry, creation of new media markets and spurring quite radical social change in the region ... or should we be looking at social change from a different perspective?

## Technology in media and communications: catalyst, enabler, or driver of change?

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In today's world of always-on connectivity, convergent communications and media pervasiveness, it would be difficult to deny the pivotal role of technology in changing the shape of society in general and communications specifically. The 'art' of communication is unrecognizable in comparison to what our predecessors would have had to go to in order to speak with relatives, friends and business contacts. And by predecessors, we do not need to search back far— just through one generation to the world in which our parents were raised is enough to ring the changes.

The question is whether it is the technology itself that is driving evolution in our communications environment. To what extent is the rate of technological change in communications media exerting a direct influence on aspects such as the need for regulatory change in the industry, creation of new media markets and spurring quite radical social change in the region...or should we be looking at social change from a different perspective?

### Technology and Cultural Determinism

Introduction of the first industrial printing press by The Times of London in 1814 is the starting point for nearly two centuries of relentless progress and innovation in communications media. In the interim period there are few genuinely key milestones where new technologies can be seen to fundamentally change the communications media and policy environment. On a global scale, these might include the advent of television, the launch of the first satellites into space, and – from the 1980s to date – the introduction of the now ubiquitous worldwide web.

Whilst there are few facets of life and industry that technology doesn't touch, it is sometimes a 'chicken versus egg' situation as to whether a change in the status quo triggers the need for innovation or whether innovation leads to change.

Author and academic, Brian Winston, has dedicated much of his research to investigating the complex and intertwined relationship between media, technology and society, producing a number of books and papers on the topic. One framework that he proposes distinguishes between 'change' where technology is the dominant, determining factor compared to situations where social and economic factors either support or block technology innovation in the course of events (1995, p.55).

Here, technology determinism is a situation where technologies follow "an inevitable logic and [act] as a catalyst for other kinds of change". In this case technology is the primary factor that can be isolated and traced as the driver behind change.

In contrast, when social, economic and cultural factors dominate and, as a result, either promote or hinder the advance of technology, technology is clearly just part of a solution and not a driver of change. This Winston defines as cultural determinism, where technology is seen as one of many contributing factors behind progress rather than the clear catalyst and instigator.

With this useful framework in mind, we can look at economic and social trends from a fresh perspective to identify the role of technology in evolving and reshaping our media environment.

### **Influencing media regulation**

Regulatory development, emerging media markets and radical social change are often difficult to clearly separate, with one often influencing the other and periods of development frequently interlinked.

One significant milestone in the 1960s is the development made by the US and Soviet Union military in satellite technology, which prompted urgent review by many countries not only of their national security but also of market regulations for ownership, financing and governance in their domestic broadcast industry. Spectrum licensing, broadcasting regulations and standards' control for content were brought to the fore and created technical and administrative challenges for governments aiming to preserve cultural identity and promote social cohesion (Ward, 1989). This era in technology history had such revolutionary effect that it is recognized as heralding a 'new communications policy paradigm', where mass media became inextricably linked to telecommunications regulation, which previously focused predominantly on the infrastructure (Van Cuilenburg and McQuail, 2003, p. 197).

Around the world, the challenges of spectrum licensing, broadcast rights, regulations and controls remain issues to be resolved as US-led satellite channels increasingly gain widespread audiences.

It could be argued in support of 'technology determinism' that satellite is one such innovation that created a fundamental shift in the communications media landscape and directly influenced its social, economic and political structure through its need for new regulatory control in broadcasting and receiving communities.

Bringing the discussion into the present day, the rise of news blogging creates new challenges for policy makers and the industry alike. The lack of accountability in 'participatory' or 'citizen' journalism is often outside the realm of formal, established regulations and though some bloggers may be professionally trained journalists, the majority is not. Availability of easy-to-use Web publishing tools, connected mobile devices and a proliferation of computers in homes, at work, and in internet cafes, gives anyone, anywhere the tools to play an active part in the creation and communication of news.

There is no 'code of conduct' for bloggers, setting out ethics, professional practices and standards for the industry. In this environment, technology has clearly prompted a need for regulatory change – and fast! A 'bloggers code' might extend to the new issues of transparency, freedom and interactivity that are introduced by the Web.

But how can governments create new regulatory policy for the content when the infrastructure expands beyond national jurisdictions? The borderless nature of the internet arguably makes such a framework difficult to negotiate, implement and enforce effectively. However it could be considered here that the challenges and goals of content (online, print and broadcast) regulations are altogether different from those of infrastructure

(telecommunications) regulations. The former has a 'public interest' role, whilst the latter is concerned with access to communications services. From this perspective, infrastructure change is predominantly in the technology domain, and we may apply a view of technology determinism to policy regulation that is driven by innovation and advances in telecommunications. Content-based regulation remains more aligned with a model of cultural determinism, which might shape our tastes, beliefs and behaviours over time.

In January 2011, the Saudi Arabian government took action within its own borders with an attempt to regulate online media – including blogs and forums – as the Kingdom's print publications are regulated (*Arab News*, 2011). All online media is now required to register with the Ministry of Information and Culture for a licence to operate, and the regulations also specify a code of conduct and penalties for violation of these rules. Commenting in a report in *Arab News*, an English language newspaper in the Kingdom, the minister of information and culture, Abdul Aziz Khoja, said that the system is "in line with the development moves that the media sector is witnessing" but there was a fear over the social impact of this move, for example on freedom of speech.

The driving forces for the Government policy development are clearly cultural. Also supporting the 'cultural determinist' model for regulatory change is the profit-orientated commercial nature of the media industry at large – including the commercial blog, paid-for content and online media ventures. An article in the *New York Times* online summed this up neatly, by saying "A few blogs have thousands of readers, but never have so many people written so much to be read by so few" (Hafner, 2004). This suggests the problem is not as large as some may make out, less of a revolutionary shift and more of a prevailing trend, perhaps.

Ultimately any media that is sufficiently popular and influential to impact on policy and regulation will be responding to a view of what interests the public, driven by profitability, audience figures and society-led, ethical content parameters. Therefore social, economic and political agendas are dominant in this view of regulatory change and innovation in technology is merely an enabling factor.

### **Creating new media markets**

This intersection between media and cultural industries created by the internet not only impacts existing markets and policy, but also leads to the emergence of new environments, from social media platforms to advertising in outer space! With technology, even the sky is not the limit.

Governments and organisations have invested in the physical networking infrastructure, to a greater or lesser degree, around the region and the world. The internet is now part of our daily life – even though in some parts of the region it might go off if the air conditioning is on too high! Those analysing the industry still question whether technology can be identified as the determining factor behind this changing state and the resulting globalisation of media markets. Their argument is based on the fact that there needs to be an economic, social and political motive behind the investment in technology...which in turn impacts the media environment

In fact, brand new media markets do not appear very often. The industrial printing press, satellite and mobile communications, consumer technologies and the internet are all examples of game-changing technologies as we have seen; but contrary to our instincts it is actually the technology going mainstream that creates the new media market.

Commercial capabilities or limitations of certain technologies, the ever-growing expectations of audiences and – above all – proof for the need or value of the technology determine the future of any innovation. How many times have you heard people refer to the ‘killer app’ when talking about the success of the internet, the smartphone or the tablet computer? Whilst technology is undoubtedly an enabler for communications media, the influence it has is usually strongest in what gets communicated once the market has been established.

For example, many people won’t realise that a workable model of the television was ready for the UK market by 1925 but war, infrastructure investment, government support, policy and content did not converge to bring it into mainstream adoption until a full thirty years later, in the mid-1950s. From this point the mass uptake of television gathered speed and created a genuinely new media market that moved real-time visual broadcasting into people’s homes and living rooms. It changed the format of mass media from audio-only to audio and visual, then from black and white to colour...to record and play-back, high definition (HD), interactive services, Internet Protocol Television (IPTV), smart TVs and even onto mobile devices today. One can only imagine what innovation lies in store for this most popular of media in the future!

Technology is clearly a critical foundation for new media markets but credited only as an influencer in regulatory policy and an enabler of new media markets. Commercial and government interests – underpinned by social and cultural norms, values and ethics – remain dominant in determining the actual process of evolution in our media landscape.

### **Driving radical social change**

What happens when these social and cultural norms, values and ethics themselves are challenged or undergo radical change? Can technology be a primary force behind radical social change, or do we need to approach this kind of movement from a different perspective?

Marshall McLuhan most strongly emphasised the impact of media technology on society way back in 1964 in his well-known statement “the medium is the message”, following which he refers to the power and scale of media to change people’s feelings and perceptions through an extension to their own understanding (1964, p.107). Those in academia have interpreted McLuhan’s statement to suggest that the message of the media (i.e. its content) in fact has less impact or portrays less about the communication than the impact of the medium selected, in terms of effect on society and culture over time. To take McLuhan’s example, the invention of the light bulb to conquer darkness profoundly changed social conditions and he would consider the industrial printing press and beginnings of the ‘information society’ to have had comparable impact.

From individual experience, it is clear that visual images – more than text or sound alone – are incredibly effective in inspiring action, and McLuhan’s theory can be applied with increasing force as broadcast, internet and mobile technology bombards communities worldwide with

an onslaught of video and images on a second-by-second basis, 365 days a year.

The internet has given a powerful tool to the organisation of groups, networking and the dissemination of information, which are all core components of social change for time immemorial. The potential of the internet for mobilising political, special interest and minority groups by far outpaces mainstream media in its agility, connectivity and interactivity. We have clearly seen this in action in many parts of our own region, where a dictator-led regime controls the print and public service broadcast media. In countries such as these, where press freedom and freedom of speech are restricted, the internet presents a particularly powerful, largely unregulated new media marketplace.

Blogging, microblogging, social media and location-based mobile services are vehicles that move the power of the media away from the established institutions and regulated authorities, into the hands of society. But can it be considered as the driving force of radical social change? According to the *Arab Social Media Report* (Dubai School of Government, 2011), it can.

The first quarter of 2011, termed the “Arab Spring”, saw a significant increase in social media engagement in the Arab world. *The Arab Social Media Report* interestingly notes that social media was extensively used by citizens to raise awareness (both locally and globally), spread information and organize demonstrations. It was also used extensively by governments to proactively engage or to reactively monitor, control or block access to websites. The report highlights an unequivocal correlation between calls to protest on Facebook on a given date and those demonstrations manifesting in the streets (with the exception of the first protest in Tunisia).

Furthermore, the international nature of television broadcast from the region and, in a second, around the world presented problems for the regimes under threat. Citizen upload of videos and images from mobile devices, to the broadcasting of high definition news live from the scene by sources such as Al Jazeera and CNN, present two ends of a challenging spectrum for the government authorities involved.

Clearly radical social change relies on communication, underpinned by technologies that deliver speed and accuracy of distribution to a mass audience – to inform, engage and, over all, inspire action. *The Arab Social Media Report* claims that “the growth of social media in the region and the shift in usage trends have played a critical role in mobilization, empowerment, shaping opinions and influencing change”, highlighting that internet and mobile technologies were used by some of the governments as they tried to resist change.

Discourse in online and offline media around the world following the Arab Spring has asked whether technology was a primary force in events of momentous change. Commenting at an e-G8 forum in Paris, May 2011, Facebook Founder Mark Zuckerberg said of the uprisings in Tunisia and Egypt: “My own opinion is that it would be extremely arrogant for any specific tech company to claim any meaningful role in those” (*Financial Times*, 2011), though some might have tried. General consensus in developed world media appears to be that anyone attributing this part of history to the technology that underpinned and facilitated it is cheating the social revolutionaries and their reform movements of true recognition for their actions. Change as significant as this does not happen simply because the tools are there; it is the people have to make it happen.

Technology – in this case, the internet – only provides an open, somewhat egalitarian forum through which citizens can communicate, and is therefore identifiable as both a catalyst and a facilitator for action; but arguably not itself a driver for radical social change.

Technology: catalyst, enabler or driver?

Though the continuing convergence of media across all of its various forms may mean that the impact of technology is felt more strongly, technology itself – and the rapid pace of innovation – is rarely, if ever, a primary driver of radical change. Arguably, its role and impact in the growing pervasiveness and influence of media in society, economics and politics do, however, single it out as a powerful catalyst and enabler behind social development.

This conclusion supports Winston's cultural determinist view, where it is necessary to examine the social context through "the circumstances into which the technology is introduced and diffused through society" (1995, p. 62). In fact, he describes this as 'empowering', in contrast to the technology determinist view, which he considers "presents us as comparatively impotent, as malleable consumers, unthinking and unprotesting, in the face of media technology power." (p. 73).

Throughout history, momentous social change has been instigated within the boundaries of technology and conditions of the time, with effects rippling through all of the complexities of long term social welfare. What has become clear is that relationship between communication technology and society is incredibly complex and interwoven with political, economic and cultural influences. In many situations – and equally applicable to developed as developing markets – significant change harnesses technology as a catalyst or an enabler, but more often technology is merely adapted by society, commerce or politics in support of its mission.



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