THE MOBILE CENTURY

Life and Work in the Digital Era

LAUNCH: THE MOBILE CENTURY

The Mobile Century will provide a uniquely global, multi-dimensional forum for thought leadership about the transformational nature of digital technology over a mobile platform - in all areas of life and work.

Thought streams include the challenges of innovation, economic development and entrepreneurship, as well as advances in health, education, finance, retail and government.

The Mobile Century will reach beyond the siloed approach to the many challenges of the digital era, to identify synergies and opportunities for advancement in innovative ways.

The Mobile Century: Life and Work in the Digital Era is being launched at the Mobile World Congress on Monday 24 February at 7 p.m. on the occasion of the GTWN/MWC Welcome cocktail with Gold Sponsor Telstra and Silver Sponsors Nextel, Davenport Major Executive Search, and CSPI.

A Data Protection Compact for Europe
by: Viviane Reding, Vice President, European Commission
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E-mobility: The Social Impact of the Internet as a Limbic System
by: Derrick de Kerckhove, PhD

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Communication Channel Innovations: The Battle for Dominance of the Home and Mobile Internet Space and New Business Models for Mobile Operators and Content Providers. What Does this Mean for Consumers?
by: Janice Hughes, Founder and CEO, RedShift Strategy

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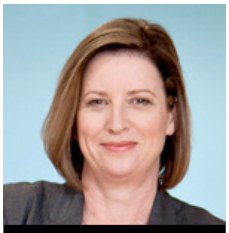

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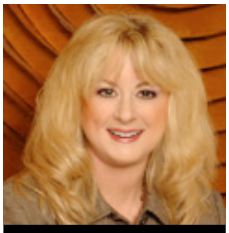

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ACKNOWLEDGEMENTS

The Global Telecom Women's Network (GTWN) would like to thank Web Time Medias, http://www.webtimemedias.com and its publisher, Jean-Pierre Largillet for making the publishing platform available to the GTWN for the launch of The Mobile Century: Life and Work in the Digital Era.

We would also like to thank Marge Salem,marge.salem@gmail.com for freelance WebMaster for all of her work in making certain we launched The Mobile Century: Life and Work in the Digital Era on time and in time.

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Life and Work in the Digital Era

A data protection compact for Europe

by: Viviane Reding, Vice President, European Commission Commissioner for Justice, Citizenship and Human Rights

The revelations about the global surveillance programs have left many citizens feeling insecure and unprotected. We learnt that, throughout Europe, citizens care about their fundamental rights, but have had their trust in both the government and company processes shaken. It is clear that this trust must be restored. In my speech on Data Protection Day in January this year, I called for a Data Protection Compact –eight principles that should govern our data privacy policy in Europe, eight principles which would restore citizens' trust.

1. We need the data protection reform in the EU statute book. I wish to see full speed on data protection in 2014. The European Parliament is overwhelmingly in favour of it. Member States need to take position on this now. It is high time to take the final steps.

2. The reform should not distinguish between private and public sectors. Citizens would simply not understand applying different principles in times when the public sector collects and collates data on the same scale as the private sector. It is also a very difficult distinction to draw when a local authority can buy storage space on a private cloud.

3. Laws setting out data protection rules or affecting privacy require public debate because they relate to civil liberties online. Take the Polish experience. ACTA was not publicly debated and both citizens and Polish Members of the European Parliament refused to accept the Agreement. Poland has learned from this experience: Today, the data protection reform is the subject of a wide public information campaign. It has led to constructive exchanges and a joint position paper by the private employers association and the leading civil liberties NGO.

4. Data collection should be limited to what is proportionate. If this element of proportionality is lost, citizens' acceptance will be lost as well. Blanket surveillance of electronic communications data is not acceptable. It amounts to arbitrary interference in the private lives of citizens. Citizens should not all be treated like suspects.

5. Laws need to be clear and kept up to date. I was struck by the reaction of the author of the U.S. Patriot Act, Jim Sensenbrenner to the NSA revelations: "This is not what the Patriot Act was meant to do!". Technological change allowed the Patriot Act to be applied in ways that had not been imagined at the time it was written. States cannot rely on outdated rules, drafted in a different technological age, to frame modern surveillance programmes.

6. National security should be invoked sparingly. It should be the exception, rather than the rule. The need to protect national security can justify special rules. But not everything that relates to foreign relations is a matter of national security.

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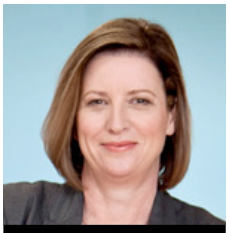

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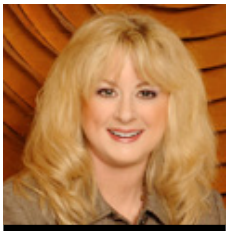

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7. Without a role for judicial authorities, there can be no real oversight. Executive oversight is good. Parliamentary oversight is necessary. Judicial oversight is key. Ultimately, whether processing is legitimate is a question of balance between different imperatives, the need to protect privacy and the importance of maintaining security. The judiciary is necessary to ensure that the pendulum does not swing too far.

8. Data Protection rules should apply irrespective of the nationality of the person concerned. Applying different standards to nationals and non-nationals depending on their nationality and place of residence impedes the free flow of data. Europe should be very proud of the fact that it treats data protection as a fundamental right – a fundamental right on which every human being can rely.

The Data Protection Compact would enable us Europeans to exercise our right of digital self-determination. Not to depend on decisions made elsewhere, but to decide ourselves how we want to protect the personal data of our citizens, while keeping our internal market open and competitive.

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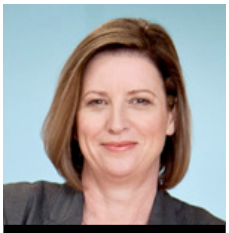

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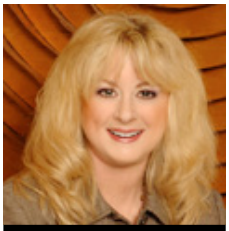

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E-mobility: The Social Impact of the Internet as a Limbic System[1]

by: Derrick de Kerckhove, PhD[2]

The Internet has a very important emotional dimension. People increasingly feel the need to share more and more personal details about themselves, their thoughts, feelings and ideas with the wider world, as part of their online existence.

This is true not just for the "friends" on Facebook, or for couples using match-making sites, but also for the whole of our lives as lived on this medium. It is true for how we share our politics via Twitter or our viral videos on YouTube. Social media act as the agent for conveying and sharing emotions. The online world works as an integrative system of impulses, desires and frustrations, which is moving at the speed of light. The great movements as the Arab Spring, Occupy Wall Street, or Spain's grassroots movement Los Indignados, all represent collective emotions and connectivity amongst peoples across borders and cultures.

I like to use the organic metaphor of the human limbic system to describe this new system of social interaction. By using this metaphor, I want to explore the conditions surrounding the creation, communication and development of emotions on the Internet in order to throw light on the relationship between technology and psychology. It is important to understand this interplay before trying to analyse the ways in which the media modify our environment and how people are changed by the use of the media they are exposed to on a daily basis. This is especially important when it comes to a technology that transmits language, and which therefore becomes an interface between the technology and the mind of the user. Furthermore, in exploring the relationship between knowledge and the media, we can also examine the ways in which new technologies affect our conscious and unconscious processing of information and our affective responses.

When a medium is connected to the Internet, there are many emotional and cognitive events being transmitted from person to person, which in turn motivates the sharing of experience and also the call to political action. It is clear that today's geopolitical map of the world has been changed by the arrival on the political scene, via the Internet, of a new class of mass political activists, who are no longer the "Silent Majority".

So now that the majority is silent no more, the result is a kind of interactive human 'massification' consisting of the connections between many individuals who respond to some current issue as a significant collective. The Spanish network sociologist Manuel Castells called this the collaboration of many "mass individuals". Castells identified that the relationships that are established between individuals on a personal basis, from one person to another, are much more complex and articulated than those that come out of the reactions of the crowd or the anonymous mass. We can therefore imagine that the result of this endless interaction between individuals on the Internet is equivalent to the infinite multiplication of conversations over a cup of coffee.

These changes in the way we interact and relate to others in a mass social context are directly reflected in how we use contemporary media. In particular we can see a clear

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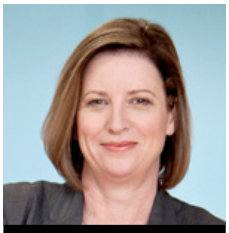

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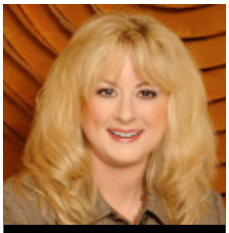

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redefinition of the distinction between public and private in the conversational context of the sites connected to social networks, as well as the emergence of new forms of intimacy and the expression of emotions that reinforce both individual action and social interaction. This new experience of real-time sharing of information, emotions and opinions by individuals rests on what I call the emotional limbic system.

The limbic system regulates emotions in to the human body (as it does in all mammals). It is a complex set of smaller brain structures which occupy the inner part of the brain and is repeated in the two hemispheres. It was formed hundreds of millions of years ago, and is present in many other animals which are less evolved than man. This region of the brain, which is closely connected to the cerebral cortex, or grey matter, regulates vial biological rhythms, including emotive responses such as fear and aggression.

So what, in fact, are emotions?

- They are part of a system of bio -regulation which facilitates survival
- Physiological responses triggered by certain systems in the brain in response to stimuli and situations that are outside or inside the body
- There are two major categories of emotions:

  Secondary emotions: those related to a social or cultural situation– eg. jealousy ,

  Primary emotions: those created through the process of natural evolution – eg. happiness , sadness, fear , anger, disgust embarrassment , guilt , pride.

The limbic system operates through the biological relationships between the various operating units of the central nervous system:

- The thalamus takes information from outside the body via the senses and transmits it in a different part of the brain, such as the cortex or the amygdal to trigger responses.
- The hypothalamus takes and sends information into the body by means of different regulating mechanisms. For example, it triggers the response of the adrenal gland to stress, which then causes more energy to be released for immediate use.
- The hippocampus record facts and data. It does not stimulate emotions, but transmits data to the cortex to be processed.
- The amygdala record tone and intensity of the emotions and informs other parts of the brain, especially the hypothalamus, if danger is present.

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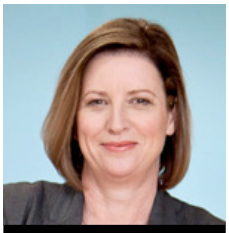

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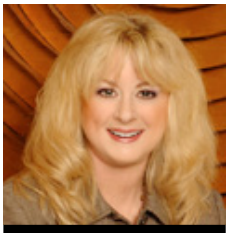

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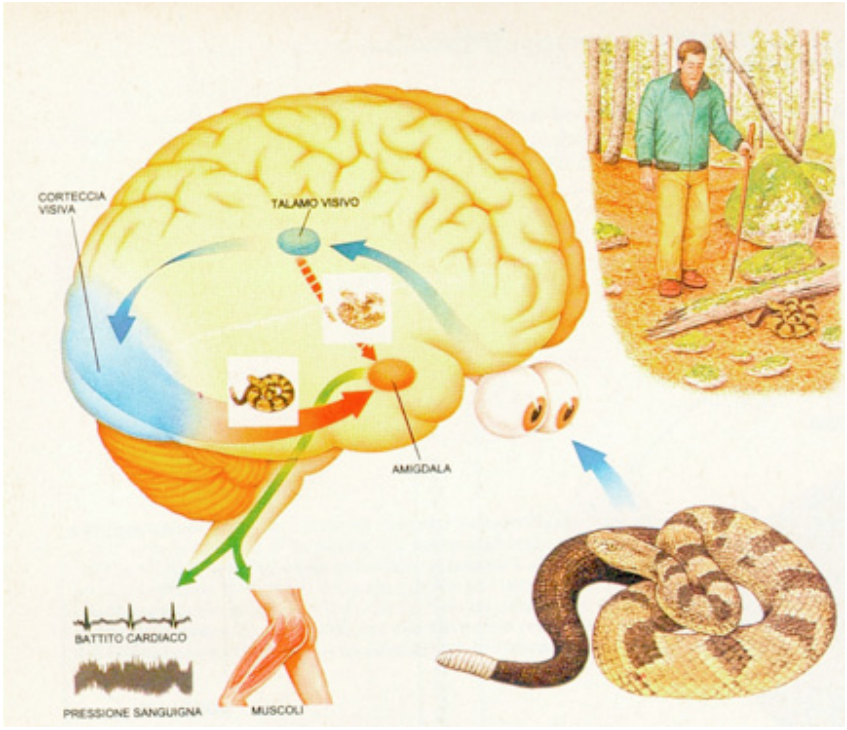

The concept of the 'social being' is not just a metaphor. It began as part of early tribal culture, but nowadays even in a modern city, where people are part of the collective social being, they are continually subjected to the emotional currents of the moment. The great theorists of the crowd, Gustave Le Bon (The Crowd: Study of the popular mentality, 1895), Elias Canetti (Crowds and Power ,1960) and Jacques Ellul (Propaganda : Shaping the attitude of men, 1973) have all made similar relevant observations about man's social being. Similarly, it is also understood that where people have physical needs in common, an emotional exchange also occurs as part of the interaction. The arrival of real-time media, radio, television and now the Internet, magnify this process and speed it up more than ever before. In summary, therefore, we can say that the Internet has extended the influence of the limbic system of the individual body to the crowd animals which are less evolved than man.

We can more or less correlate the various elements and functions of the emotional network of the Internet's 'central nervous system' to biological organs. The screens and keyboards, and all the technical equipment of PCs, tablets and mobile phones, are co-ordinated via the Internet, which is equivalent to the thalamus transmitting information in order to bring about action. Similarly, data aggregators work like the hippocampus to combine information from different media and sources, and thus enable the system to grow. Social media, like Twitter in particular, can be equated to the amygdala, which plays the role of an accelerator and determines the amount and size of the emotional response to an event. Just think of how Twitter stimulates its followers to instantly experience a wave of shared feelings with the crowd. Twitter is at once both very individual,touching everyone personally and revealing their inner being, while also extending the influence and impact of the crowd.

Social media, the hippocampus of the Internet, carry and store images and text that stimulate emotions and allow the aggregation of information and the sharing of facts and opinion in real time. Facebook, Twitter, chat rooms and forums, as well as other sites are highly regionalised, like Orkut in Brazil, make people react in emotional waves that can bring people from different cultures, religions and social backgrounds together.

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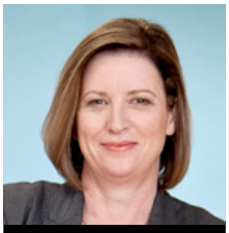

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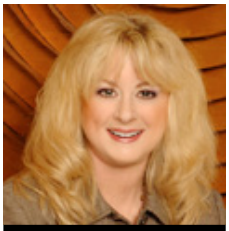

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The immediacy of social media enables the individual to get involved on an emotional level with current social and political issues. The readiness to respond emotionally to external public events results from the perception on the part of social media users, that they are connected personally with others sharing their own political views, with whom they are willing to share information and news in real time.

Examples of the interface between the personal and the public are the views and arguments exchanged about current issues such the response to the global financial crisis, and the growing call for greater transparency and responsibility by large financial institutions[3]. The collective response via social media to issues such as these raises the growing indignation of the crowd. In the past, people tended to have more tolerance of corrupt governments or firms because there was a lack of accurate information, but now, especially after Wikileaks, there exists via social media a sort of permanent state of alertness which can trigger a collective cognitive response.

The Wikileaks case was the start of a new political reality, where transparency has a value, information is currency, and where awareness and responsibility have become an ethical event. The second shoe has now dropped with revelations by former NSA agent Edward Snowden regarding everyone being spied upon by the National Security Agency of the United States. Transparency is here to stay.

We experience global emotions all the time, but we don't always realize it. For example, we share the global dismay regarding the revelations – and subsequent treatment of Edward Snowden – and simultaneously experience a subconscious solidarity with the multitude on this topic. The era of transparency throws light on scandalous practices from trusted institutions. A global unease sets in making people ripe for local flare-ups. Everybody is involved in and with Ukraine and everybody has an opinion. The Sotchi Games give mixed feelings to everyone. The mobile society is e-mobile like e-motion.

The reasons for individuals and groups to become indignant about specific events or information can, however, seem even less clear today as the world has become too complex, vast and interdependent . We live in a state of interconnectivity that has never before existed.

For example, a small book by Stéphane Hessel, published in France in 2010[4] movement called 'Los Indignados'. It grew via social media first in Spain and then in many other countries, producing over a thousand emotional waves beyond the borders of France. To quote Hessel:

> The real outrage is not born hating, but by empathy and solidarity with others, and in this sense it is a natural effect of interconnectivity associated with real political and social unrest . It moves beyond the need of the individual to be communal experience, something more universally human.

The Internet and Web 2.0 tools introduced into civil society a real possibility of unstructured expression, without hierarchies, participatory and collaborative. Through the process of sharing, in a spontaneous and emotional way, a "global village" was enabled.

That said, on the other hand, collective political participation online has also been derided as so-called "clicktivism" from the contraction of the word ' activism ' with the verb ' click'. This means the simple act of clicking on like, which can be seen as a lazy way of belonging to the group, and not a real social membership. See Micah White:

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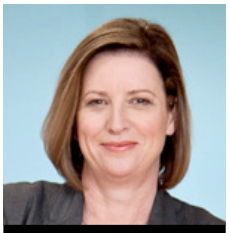

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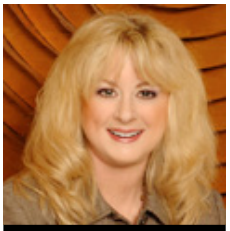

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"In promoting the illusion that surfing the web can change the world, clicktivism is to activism as McDonalds is to a slow-cooked meal. It may look like food, but the life-giving nutrients are long gone.[5]"

This rather harsh judgement of the political impact of social media based movements ignores the fact that people did get involved through demonstrating in the streets. The Occupy Wall Street movement, for example, clearly goes beyond mere clicking and involves real mobilization of people at the physical level.

From the Arab uprisings to the protests in Iceland, people have progressed from what began online to a street movement that powers and connects heterogeneous communities. The Indignados from all over the world, the aganaktismenoi of Greece, The Anonymous, the M-15 in Spain and all other facets of the Indignez-vous phenomenon, including the reaction to the last elections in Italy, are clear examples of this new phenomenon.

The American sociologist Zeynep Tufecki, who has thoroughly studied the various stages of the so-called ' Arab Spring ', has called this phenomenon "network effects", by which she means the impact of network communications on the behaviour of the mass in times of crisis. The Internet changes the structures and forms of social networks, increasing the speed of communication - modifying and restructuring the public sphere.

In my view, the most important thing to understand and study in these examples is the fact that the Internet allows individuals to extend their impact beyond the confines of their own room and go global. As Tufecki points out, there had been more than 7 street protests in Tunisia before the event that gave the starting signal to the Arab Spring. For example, in Gafsa, a town in the deep south of Tunisia, there were protests in 2008, which were followed by brutal repression, not only of individual protestors, but also of information. Tufecki notes that at the time of the original protests there were only 28,000 Facebook users in Tunisia. But after the self-immolation of Mohammed Bouazizi in 2010, the protest movement was launched that became viral. And by this time there were two million Facebook users in Tunisia. This shows that the impact of the network is so strong that it can challenge even extreme brutality of repression, which is why I believe we are seeing a social impact of a limbic system.

We must also understand, however, that the phenomenon of social mobilization was not born yesterday or even three years ago. There are precedents that can be interpreted as stages of social maturation of the limbic system. Even before the expansion of the Internet, as early as 1989 Chinese dissidents were able to use faxes to send news and images of repression at Tiananmen Square in Beijing, despite government censorship and control of the press and the mainstream media.

In 1994, when the masked Subcomandante Marcos appeared on the Internet as the face of the rebellion in the Mexican state of Chiappas, this was the start of public opinion evolving from local to global. It was no longer possible for the world to ignore the injustice done by the Government of Mexico against the farmers in that region in the name of multinational food companies.

The special case of the Philippines is evidence of the different capacities of the Internet and SMS to provoke an emotional response from the people. For a couple of years (1999 - 2001) it was known that the Estrada government was involved in many corruption scandals. But an initial protest in 2000 on the Internet had not resulted in a mass impact because, although there were a million Filipinos connected in the world, only 50,000 of these were in their own country, the rest living as expatriate workers in countries. In 2001, perhaps because the use of SMS in the Philippines was still free,

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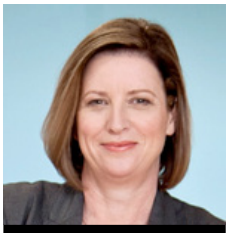

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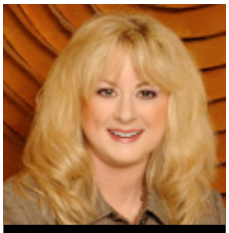

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and it was possible to contact thousands of people with just one message, those with mobile phones raised enough anger and indignation amongst the populace to bring down the Estrada government.

In Iran in 2009, the use of Twitter raised awareness of electoral fraud, threatening to invalidate the re-election of the government, but was stopped because of repression:

> More on Iran clashes ….Twitter, .. especially because of its integration with mobile phones…is in fact the only channel more or less open or open intermittently, through which news and information can get through about what is happening in the Islamic Republic after the disputed Iranian presidential election that saw the victory of Ahmadinejad[6]

As commented by the Washington Post:

> What we are seeing is the flickering flame of freedom. People are willing to risk their lives to protest a system that oppresses them and denies them fundamental human dignity. Those who say none of this matters - that it is a feud between factions of the ruling class, that it has no chance of bringing about real change - are missing the point. The people of Iran are exercising their sovereign right as a people to stand before their rulers and say "no more". They are commanding the attention of a world that seeks to make deals with their oppressors. That Iranians are telling us they yearn to be free.[7]

What lessons emerge from these examples? This new phenomenon of bottom-up political activism, not organized by political parties, but by ordinary citizens, has demonstrated that it will be very difficult to suspend democratic constitutions and hand over power to members of the same family or the same " caste" as has been the case before. In that regard, I am particularly impressed by the conclusion that Esther Dyson, chairperson of EDventure Holdings, an active investor in a variety of start-ups around the world, gave to her reflexion on Wikileaks:

> *In the long run, WikiLeaks matters for two reasons. The first is that we need a better balance of power between people and power. Information – and specifically the Internet's power to spread it – is our best defense against bad, unaccountable behavior.*
>
> *Second, we do want to trust our governments and institutions. The point of openness is to make those in power behave better – and to make us trust them more. Rather than viewing them as enemies, we should know what they are up to, and perhaps have a little more say in what they do.*[8]

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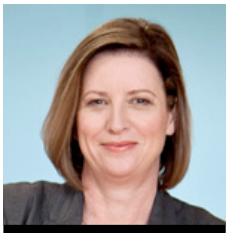

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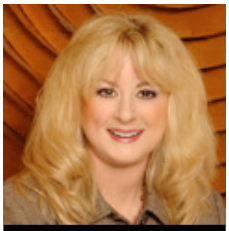

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1 *Translated from the Italian original with kind permission of Dr Derrick de Kerckhove*
2 *Derrick de Kerckhove is the author of The Skin of Culture and Connected Intelligence and is now retired Professor in the Department of French at the University of Toronto, Canada, but full professor in the sociology of digital culture at the University Federico II of Naples, Italy. He was the Director of the McLuhan Program in Culture and Technology from 1983 until 2008. He is now the scientific Director of Media Duemila, in Rome.*
3 *See Inside Job, a documentary about the collusion between the U.S. government and the big financial groups.*
4 *Indignez-vous! – or translated into English as Time for Outrage!*
5 *Micah White , Clicktivism is ruining leftist activism , " The Guardian ," August 12, 2010*
6 *Reported July 25, 2009 by Luke Alagna;*
http://www.apogeonline.com/webzine/2009/06/25/liran-twitter-ei-mille-occhi-dei nuovi-media)
7 *http://www.washingtontimes.com/news/2009/jun/16/irans-twitter-revolution/*
8 *Esther Dyson "WikiLeaks' Flawed Answer To a Flawed World". On line comment: http://www.viennareview.net/special-reports/wikileaks-flawed-answer-flawed-world-4556.html*

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Communication Channel Innovations: The battle for dominance of the home and mobile Internet space and new business models for mobile operators and content providers. What does this mean for consumers?

by: Janice Hughes, Founder and CEO, RedShift Strategy

There are dozens of new television platforms, boxes and remote devices flooding into the living room and the living world that will forever transform the way we behave at home and at work. The battleground for the control of the consumer dollars and the distribution networks is already at hand. Wireless connectivity has now become the global change maker for the majority of people whether it is in a small village helping women and children with their health needs or in a digital innovation hub in Silicon Valley. People are turning to smartphones and tablets to catch up on their favourite programmes, to deliver the news and to purchase virtual and real merchandise.

There are 3 types of control that different players are simultaneously trying to impose on the market. First they are trying to control the customers through the content. Secondly the OS players Google, Apple and Microsoft are trying to persuade the customers to join their wireless ecosystems and thirdly the wifi and fixed operators are offering ultrafast broadband to join their networks and set top box systems together.

Content

Traditional broadcasters with their legacy of prime time and long form content are now being challenged by new players that want to hijack their viewers with fast and furious short form news, stories and comedy shows, sent in on smartphones to a central platform that could be YouTube, Vice, Carlos Slim's Mobli or Facebook. Vice says that it wants to be the next CNN but also the edgiest, wildest online media brand in the world. It is staffed by "twenty somethings" and aimed at a global youth who have no interest in mainstream media. It claims to "specialise in exploring uncomfortable truths and going to places they don't belong".

The traditional broadcasters are growing more slowly than the upstarts. Today Netflix is almost as big as HBO in terms of revenue. In the fourth quarter of 2013, Netflix's revenue climbed 24% to $1.2 billion, close to HBO's $1.3 billion in revenue, which was up only 6% year on year. Netflix is on a faster growth trajectory than HBO. It is more competitive in attacking global markets and it was first on Google Chromecast – an HDMI dongle whereby you can "cast" a Netflix film or "Hemlock Grove" onto a TV from your PC, phone or tablet. All for $35!

The OS and Games Players

All four big OS and games console players Apple, Google, Microsoft and Sony are investing billions of dollars in creating their own wireless ecosystems using the smartphone and the tablet as the remote control or second screen. Firstly they want to capitalise on the fact the majority of consumers across the world connect via their mobile phones rather than their fixed line connections. Secondly they want to personalise all your interactions in the living room or home so that you can self-schedule your work and social engagements at one and the same time. The phone and tablet are continuously at hand and this gives them leverage in the living room or equally to catch up with the news and their favourite TV programmes while on the move.

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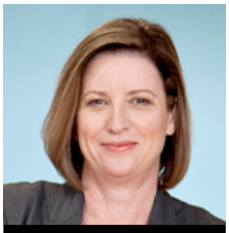

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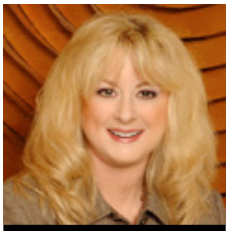

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Google has worked hard to get Google TV into a growth scenario but it's not happened yet. However Chromecast shows that television is still a priority for Google, particularly now that the new Xbox One from Microsoft is clearly aiming to attract casual and regular television viewers into a complete TV entertainment experience. Xbox One can re-route a broadcast TV signal from a separate set top box in order to incorporate linear TV into the Xbox interface, and it allows for switching between TV and other applications, including gaming, VOD and Skype through the neat 'snap' function, which brings two applications onto the screen simultaneously. The Xbox One includes the Kinect, a voice and gesture peripheral which allows multiple users to control the console using voice and gesture controls in 'Minority Report'-style.

All of the OS and games console players want to win the heart and minds of the TV viewer if they can, by layering on additional features that "simply make life easier and save you time". The voice and gesture peripherals created by Sony in the PS4 and by Microsoft in the Xbox One are developed for the primary living room TV screen: they need a spacious environment, are aimed at families and have grown out of Wii-esque sports games which involve jumping around and threaten repetitive strain disorder. The Kinect is bundled into the main package whereas PS4's peripheral is an added extra; this indicates an important difference in the primary positioning of these two consoles. It also accounts for the PS4's lower initial price.

While the big retailers are replacing their DVD sales with new OTT devices and on demand film services such as the Walmart offer with Vudu, the consumers seem set to follow the ever evolving add-ons of the OS and games console players.

The Fixed Network Players

The traditional fixed network players are working hard to increase the capacity on their networks through fibre roll-out. The enhanced quality of service that fibre networks can deliver, can then be seamlessly extended to mobile devices in the home, through wifi. Fixed operators are also strengthening their propositions with content, as consumers become more attracted to bundled offers. In the UK market , Sky, BT and Virgin are now fighting a fierce battle for the increasing number of triple play consumers.

The danger for the pure mobile operators is that as mobile devices are used more and more for data services delivering video as well as voice and messaging, they become increasingly confined to the relatively small proportion of overall use which is "out of home" – ie out of range of the fixed players' wifi signals. While consumers love and cherish their phones and tablets more and more, the threat for the mobile operators is that consumers need them less and less. While this may be less true in the developing world, wireless and fixed operators alike are scrambling to win these consumers with an intensity of new features and improved offers will effectively change the way that consumers behave in both predictable and unpredictable ways.

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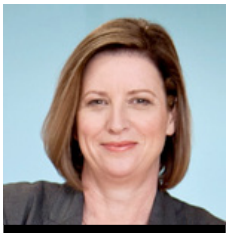

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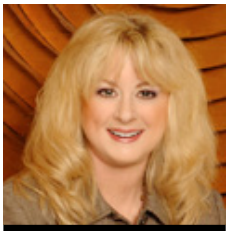

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THE MOBILE CENTURY

Life and Work in the Digital Era

Education, Development and ICTs in Latin America

by: Steve Shindler, CEO NII Holdings (Nextel)

"The basic objectives of education should be to learn to know, to learn to do, to learn to live together and learn to be." UNESCO

The importance of education is that it provides individuals with the tools they need for their personal and social development; it gives them a voice to make themselves heard in the world, the ideas to achieve positive change and the opportunity to overcome some of the inequalities that afflict individuals and societies.

Today, educational policies have developed to redefine the "right to education" as the right to learn, making the quality of education a fundamental component. In today's world it is not enough to obtain a certificate of basic education; now the idea of obligatory education is more ambitious and multidimensional, as set out by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

For many years, in Latin America the right to education was understood as "universal access to schools", which lead government policies to focus on making basic education an obligation.

As a result, the nations of Latin America now face a great challenge –not only must they guarantee that all their children attend school, but they also have to improve the quality of education.

According to UNESCO's report "The State of Education in Latin America and the Caribbean", on average approximately one third of elementary school students and almost half of secondary students do not appear to have acquired basic skills in reading, while in mathematics the figures are still lower.

These differences are more profound in the case of impoverished children. A further factor that increases vulnerability is living in rural areas where there are fewer teachers and teaching resources.

These inequalities are also marked between countries with different levels of development. For example, Chile and Mexico occupy the lowest positions for performance in mathematics, reading and science according to the PISA test (Program for International Student Assessment) amongst the OECD members.

According to a Mexican association dedicated to promoting education (Mexicanos Primero), it would take Mexico over 25 years to reach the average level of OECD countries in mathematics and over 65 years in reading.

Against this background, it is an honor for me to collaborate with Worldfund, an organization that helps in delivering world-class training and ongoing support to teachers from undeserved schools in Latin America. Worldfund works in partnership with local governments and brings private corporations to the table to invest resources and expertise.

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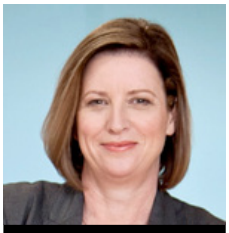

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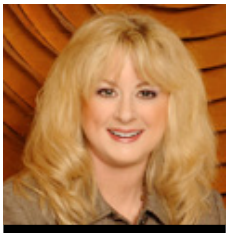

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At Worldfund we have analyzed that increasing numbers of young people in the Latin American region are joining the labor force without the skills they need to find a decent job and be part of the global economy, which is increasingly competitive and information rich.

Other figures highlighted by Worldfund include the following:

- Each year, approximately 22.2 million children and teenagers in Latin America fail to attend school or are on the point of leaving.
- The levels of inequality in Latin America are the highest in the world, with two out of five people living below the poverty line; in Brazil, 20% of children from lower-income families complete on average eight school grades, compared to over ten years of schooling for the 20% of children from the highest income families.
- 92% of Latin American children start elementary school but only 41% of Brazilian children and 35% of Mexican children complete secondary school.

Since it was founded in 2002, Worldfund has invested over $16 million dollars in education programs and has trained over 3,000 teachers and principals in public schools in the region. Its work has an impact on 540,000 students per year, and the aim is to reach more than 1.2 million per year by 2016.

Education and Development

Robert Kozma from UNESCO points out that "education earns a high return on investment." According to him, "Microeconomic data from 42 countries found that an average rate of return for an additional year of schooling was a 9.7% increase in personal income."

Regarding the macroeconomic sphere, Kozma highlights that there is "an additional 0.44% growth in a country's per capita GDP for each additional average year of attained schooling." The conclusion is clear: Growth is strongly related to the quality of education.

Moreover, today we are facing a new growth model based on knowledge generation rather than on manufacturing. Hence, the countries capable of generating and processing knowledge are better positioned to develop and to become competitive.

Accordingly, the OECD makes a very interesting distinction between developing and emerging countries vs. knowledge-based economies. In the knowledge-based economies[1] employment is characterized by increasing demand for more highly-skilled workers and innovation is a major driver of growth.

Firms are hiring people with different skills such as the ability to solve complex problems, to handle information, to work in teams of people located in different parts of the world and, above all, who have the ability to produce new knowledge.

Thus, Latin America faces the great challenge of providing quality education to its population in order to be better prepared to compete globally. Furthermore, Latin American countries require, to be more competitive, investments and policies aimed to generate innovation oriented environments in elementary and secondary schools.

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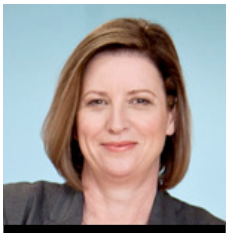

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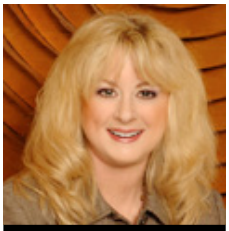

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Life and Work in the Digital Era

Education and Information and Communication Technologies

We need to take advantage of new technologies for education purposes. I am also proud to work in a sector that is an education enabler through mobile technologies.

The use of ICTs in education is today a recurring theme in national education policies, notably for their use as a support tool for teachers. They are also a basic means to reach more population, for example in rural and remote areas, where illiteracy is a bigger problem.

However, following what we have said about new education needs for today's world, ICTs must be seen as tools to create knowledge, not only to transmit it. They can improve the manner in which students interact with teachers and with their surroundings, providing them with access to knowledge created far away while enriching learning.

The use of ICTs also helps to make the learning process more flexible, as it allows the preparation of personalized education programs, facilitating the inclusion of vulnerable groups, such as children and women living in poverty, and therefore expand universal access to education.

However, access to ICTs varies from country to country as well as within countries, above all in those with low income levels. This creates a digital divide that can be overcome thanks to mobile phones.

Mobile phones are increasingly available for lower income sectors. As we all know, they are becoming the basic means for broadband access.

The OECD says that in developing countries the primary platform for access is the mobile phone, with mobiles increasingly used for e-learning and video instruction.

Another advantage of the use of mobile phones in education is the development of specific applications that can improve the learning experience in a short time and at low cost.

Finally, I would like to emphasize that the use of mobile technologies must go hand in hand with efficient management of spectrum and sound broadband policies.

Broadband needs to be part of governments' comprehensive development plans and not only a regulatory issue.

Governments need to impel policies that acknowledge broadband as a public good, necessary to reduce poverty, inequality and the digital divide.

In education, knowledge can be a key factor in transforming teaching at all levels, generating the highly-qualified human resources that countries need in order to develop.

Let's fulfill our social duties with the resources we have as mobile operators!

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1 *Economies which are directly based on the production, distribution and use of knowledge and information.*

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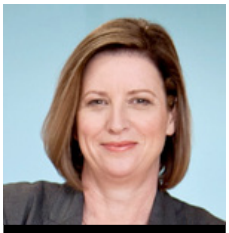

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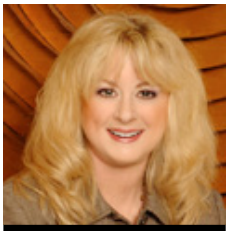

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Life and Work in the Digital Era

"New Business Models for Development in the Mobile Century"

by: Ann Mei Chang, Chief Innovation Officer, Mercy Corps

Grant-driven international aid has dominated poverty alleviation efforts in the past century, but its limitations are fuelling a search for new models. Business approaches hold the potential to be more scalable and sustainable, especially if we leverage the revolution we're seeing in mobile technology. But we have much to learn.

According to the Economist, nearly 1 billion people have been lifted out of extreme poverty in the past two decades. China, which receives relatively minimal aid, accounted for an impressive three-quarters of this reduction. Despite this progress, another billion continue to live on less than $1.25 per day in desperate conditions.

Developed countries have stepped up to double official development assistance in the past decade—to more than $100 billion annually. Traditional aid has many benefits, but some commonly recognized challenges are holding us back:

- Diminishing resources. The economic downturn and high government deficits threaten to limit the development aid available.

- Lack of sustainability or scalability. Typically, grant-driven aid programs run for a limited time in limited geographies. To reach additional beneficiaries, they require additional funding.

- Low flexibility. Traditional aid programs are often defined years in advance, and in frameworks that can be difficult to adapt to dynamic environments.

- Risk intolerant. Donors want to see direct results for their grants, and perceived failure can affect future funding for the recipient organization.

Market-driven approaches to fill the gap between traditional aid and the ongoing need have existed for some time and are continuing to expand. Perhaps the most established is microfinance, which has served more than 130 million clients globally with small loans.

And, since the mid-1990s, foreign direct investment has become the predominant source of external financing for developing countries, at more than double the size of official development aid. In addition, as the number of mobile subscriptions fast approaches the size of the global population, we see this technology as holding the potential to further accelerate market-driven solutions.

At Mercy Corps, we are shifting from traditional aid to market-driven models in many of the 42 countries where we work. By designing programs that put us in a market-facilitation role, creating opportunities for shared value, and harnessing the benefits of social enterprise, we're reaching more people with what they need to lead productive lives, and in a way that will last long after we've left.

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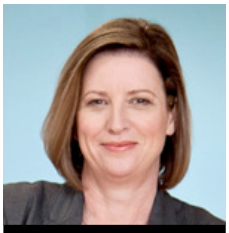

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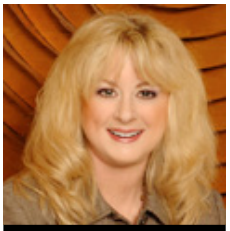

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With market facilitation, rather than providing or subsidizing goods and services, we identify players who have the incentive to fill market gaps and create market linkages that result in serving the needs of the poor, who often are most vulnerable to exploitation. For example, our Agri-Fin Mobile program works with telecom operators, farmer associations, agriculture research institutions and insurance companies to offer bundled information and financial services to smallholder farmers through their mobile phone. Our end goal looks a lot like traditional aid: to increase the incomes of farming families and reduce hunger. But our approach looks a lot like business.

The concept of shared value takes the market-driven approach a step further by working with corporations to create viable models that enable them to fill market gaps sustainably while supporting core business objectives. The mWomen Program at GSMA, the global association of mobile operators, has done this effectively by carefully mapping out the business case for increasing mobile phone access for women in developing countries. This has motivated telecom operators, such as AsiaCell and IndoSat, to target women as they design and market service plans, resulting in millions of new subscribers. With the financial resources and reach that corporations can bring, identifying ways to align business opportunities with the needs of the poor can be a highly scalable approach.

Social enterprise is yet another approach to scalable and sustainable development. Increasingly, such hybrid companies are being created with a “double bottom line” objective—balancing profits and social impact. Yet, in developing countries, social enterprises have so far fallen far short of the opportunity. These less mature markets present additional challenges: poor infrastructure, limited talent pools and less disposable income. The result is often both higher risk and lower reward, creating a tough investment climate.

Mercy Corps sees social enterprise as a particularly viable approach to poverty alleviation, and is working to bring together four essential elements in developing markets that are rarely found in combination.

1. Deep understanding of local culture, challenges and market needs.
About 93 percent of our field staff is from the countries where we work and has intimate knowledge of the
complex local environment and opportunities. Their creative ideas and entrepreneurial spirit provide the best raw material for building an enterprise that serves real needs and fits the local environment.

2. Expertise required to build a successful business.
In many cases, those who are closest to the realities on the ground don’t have the range of business skills or experience that can make or break a new venture. Incubators and accelerators have sprung up to bridge this gap, though typically only for a finiteperiod. At Mercy Corps, our “Social Innovations” team, which I lead, functions as an internal accelerator team, bringing in business, technology and product experts to work hand-in-hand with local entrepreneurs to develop their ideas into viable enterprises.

3. Early-stage funding to prove new business models.
Given the typically higher risk and lower reward of social enterprises in developing countries, raising early-stage funding is often challenging. The time required to raise small amounts of seed capital can distract from building the actual business. In addition, grant funding is often risk-averse, while impact investors don’t see sufficient upside. To bridge this gap, Mercy Corps is raising a seed fund for our most promising internal social ventures. This fund will enable us to spread risk across a portfolio of businesses, deploy nimbly to invest in the most promising ideas, and help enterprises prove their business model before approaching impact investors.

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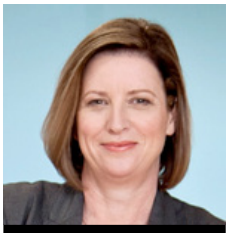

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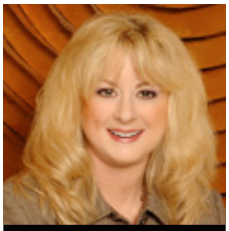

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4. Scaling to new markets. While many innovative pilots have been launched, even successful models have struggled to scale to new geographies. Typically, teams are able to capitalize on deep knowledge and networks for a particular locale, but expanding to entirely new contexts requires infrastructure, cultural understanding and market knowledge they don't have. Mercy Corps' presence around the globe provides us with immediate access and understanding of new markets across multiple regions, facilitating the growth of enterprises to new countries.

The proliferation of mobile devices across developing countries further fuels the possibilities for social enterprise by decreasing the cost of access and scale, and increasing the availability of information and productivity-enhancing systems. This has led to a fast-growing ecosystem of app contests and incubation hubs along with promising mobile services for financial services, health, agriculture, education and more. Despite the excitement, few consumer applications have yet achieved mass scale with those living in extreme poverty given the challenges of illiteracy, poor rural connectivity, distribution and limited resources. The more immediate impacts are emerging in the realm of mobile as a tool for service delivery, such as remote diagnosis by health workers, information dissemination by agricultural workers, resources for teachers and data and information gathering by surveyors. Yet, mobile devices are on a rapid march to reshape the lives of more and more people around the world. Coupling this explosion with market-driven business approaches holds much promise to improve the lives of the poor more sustainably and at scale.

Much is yet to be learned. But we know that deep collaboration between NGOs, the private sector, individual donors and government, along with agility, risk-taking and an entrepreneurial spirit, is required.

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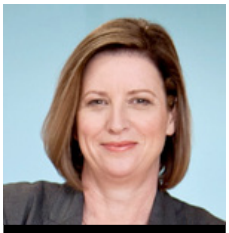

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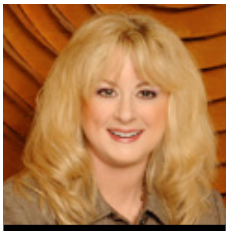

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"The Evolution and Limits of Science"

by: Dr. Daham Alani. King Abdulaziz City for Science and Technology

At the dawn of the twenty-first century, a new world has emerged, one different from the previous two hundred years in intellect and philosophy as well as essence and shape. For as the nineteenth century was an era of reason and certainty, the twentieth century brought doubt and shaked both the stability of reason and the rigor of certainty. And whereas the nineteenth century was the age of confidence, stability and victory for humanity, the twentieth century proved to be one of wars, crisis and defeat of man by man.

The early characteristics of the third millennium are astounding in every way for they are difficult to interpret or predict at the present time. The traditional ideology of science that has dominated the last two hundred years was a logical sequence that stretched from observation to reason. Today, however, the links of this sequence are disconnected and random. Observation is often made without experiment, and experiments are conducted without understanding which, when made, still lacks the ability to predict, and when predictions are made, they are devoid of real understanding. Those separated links multiply in an unprecedented way perhaps because of the overlapping of sciences and technologies in general. Science has become increasingly technological, and the accumulation of knowledge has exceeded our capacity for comprehension as well as prodigiously diminished the lapse between discovery and application.

We would be mistaken to assume that history proceeds at our own pace or even at a predictable one, for the extent of progress itself defeats the expert attempts to assimilate that progress. Furthermore, an unprecedented phenomenon has emerged.

Some societies are now suffering from the difficulty of assimilating technological achievements, especially in rich countries where technological gains and the investment of automation have resulted in increasingly lower manual labor averages thus generating an unsustainable unemployment. Moreover, the gains of development in medical sciences as well as the attainment of medical care have imposed upon society an aging population whose cost is all but easy to manage. In addition, the impact of some technologies on the environment and the future of its natural resources have alarmed some countries and shaken their confidence in the security of the future. The obscurity of tomorrow has become a fact conceded by everyone beginning with scientists.

Science has span in various directions. For on the one hand it seeks to explore mesoscopic bodies at the nucleus level in some live cell matters, and to deal with them through new technologies dubbed Nanotechnology. And on the other hand, it seeks the universe and soars in a sky without limits.

The function of science is no longer an observational and descriptive one as it was in the nineteenth century and the first decades of the twentieth century. For then the physicist described the atom without using it, and the chemist described particles without creating new ones and the biologist attempted to comprehend the mechanisms of life and its functions without interfering with its course. Yet present day science has bestowed man with exceptional powers that have exceeded his ambitions to achieve prosperity and improve all aspects of life and its surrounding world.

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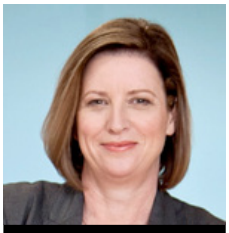

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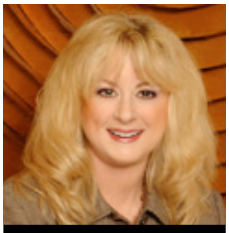

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Science today has endowed man with the power to destroy mankind, were he to lose his wisdom and proper judgment, as he has in the past in Hiroshima, when Oppenheimer commented: “We have committed a sin”. It is not surprising then that the leader of the lamb Dolly’s cloning team Ian Wilmut would himself worn against carelessness in this issue and the ethical dilemmas in question:” I think now to contemplate using our present techniques with humans would be quite inhuman”. We are not only in danger of violating the natural order of life; we are threatening our own humanity.

For some who choose to ignore, as Jean Hamburger, president of the French Academie des Sciences remarks [1], that genetic engineering will never be able to add the gene of behaviour or the gene of intelligence to a human’s genetic repertoire. French thinker Charles Montesquieu in his 1748 “Spirit of the Laws” [2] said that power should be curbed by its motivations. More than 250 years later, this seems truer than ever with modern sciences.

The future of science goes hand in hand with the future of mankind. That has become a fact dictated by the vision of science controlling all aspects of life. Today’s science is conquering new horizons, yet its future seems ambiguous, and one question remains unanswered: Will science give man happiness, or will it bring on him misery and misfortune?

1. The mechanism of the science’s evolution:

The astonishing achievements of science since the beginning of the twentieth century have lead to many questions regarding the course and direction of science. One of the questions most debated amongst scientists concerns the nature of the evolution of science: is it even continuous process or one subject to abrupt change and unpredictable developments?

Does the intellect of generations stir the course of science then follow its sequence?

Does science thrive towards a predictable end, or is its course endless? Is their a logic behind scientific progress and discoveries, or is the mechanism of it progress ungoverned by any law? Is science the output of accumulated knowledge, or is it the outcome of variable forces pulling in different directions?

Many scientists have dedicated their efforts in attempt to answer these questions and to identify any patterns underlying the progress of science and its course. The latest and most debated theory remains that of American scientist Thomas Kuhn which he developed in his book:” The Structure of Scientific Revolutions”[3].

Kuhn’s theory is based on the concept of paradigm that he defines as being the prevailing set of beliefs shared by scientists at a given time. According to Kuhn [3], periods of time will go by with a certain paradigm prevailing among scientists (normal or natural scientific periods). In such periods, scientists agree on basic concepts, on matters worth researching, and the means to be used in research. At the end of these “normal periods”, a sudden crisis or development will produce scientific findings that will upset or contradict the present paradigm, thus giving birth to a new scientific theory or paradigm and scientists will shift from one set of beliefs to a new one. Thus starts a new “normal scientific period” with a new prevailing paradigm.

Kuhn further uses an event from history to demonstrate his vision of the mechanism of scientific progress. After the prevalence of Isaac Newton’s physical theories on light as particles during the second half of the 17th a normal scientific period began where scientists in general agreed on this theory and rallied to study motion and gravity. That

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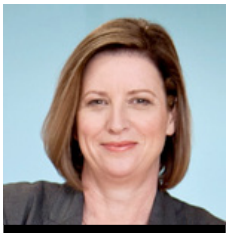

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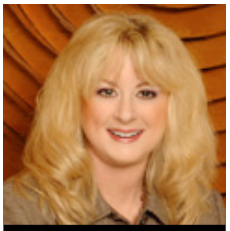

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marked the prevalence of a paradigm based on Newton's theories. Scientists then used Newton's theory in their infinitely accurate calculations of planets orbits, thus realizing tremendous success in 1846 with predictions of the presence of planet "Neptune" in terms of its distance from the sun and its orbit, before astronomers had even discovered the very existence of Neptune.

However, towards the end of the 19th failed to explain the behavior of light and the phenomenon of electrical light where even Newton's theory failed in providing valid explanation. Once more, the change in the prevailing paradigm lead to a new paradigm to answer these questions, with the work of several non main stream scientists such as Einstein whose efforts between 1905 and 1915 culminated in theories that produced a new understanding of time, matter and energy, and the transformation of each of these forms into the other, with an overall better understanding of the notion of gravity. Einstein's theory of relativity thus became the new prevailing paradigm, with a new normal period where it became the accepted way of studying the motion of bodies and gravity. And, according to Kuhn, it is not possible to accept Einstein theory of relativity without admitting that Newton was wrong.

For according to Newton, mass is permanent and cannot be transformed to any other form, whereas it can change into energy according to Einstein. Therefore, one cannot consider these two theories as being one, for the validity of Einstein's theory is based on refuting some of Newton's assumptions. That is also the case of Ptolemy's popular notion that the earth is the center of the universe and that all other heavenly bodies rotate around it at regular speeds whereas Copernicus founded modern science with his notion of earth and other planets orbiting around the sun. Kuhn considers the transition from one century, a new crisis emerged when scientists paradigm to another to be comparable to a religious conversion, for it is far too deep of a change to be considered a free exercise of the mind.

Kuhn also likened the development of science to the evolution of nature as described by Darwin.

2. Evaluating Kuhn's theory:

Kuhn's theory "The Structure of Scientific Revolutions" has produced an ongoing heated debate with various opinions pro or against. We will focus on the last notable who has discussed Kuhn's theory, Nobel laureate in physics for 1979, Steven Weinberg who says in his1998 article that the truth of scientific evolution has eluded Thomas Kuhn, for one must differentiate between what is constant and not subject to change with time, and the part prone to change in any comprehensive theory. Weinberg considers that Kuhn has failed to note this distinction. [4]

For instance, theories of physics have strong invariant elements not subject to changment exactly like the human skeleton is in the backbone of human anatomy or like finding antique clay vases would be in the world of archaeologists.

In addition this aspect of the theories usually relies on mathematical equations that are based on symbols and definitions that leave little room for error.There are also other aspects of any given theory of physics that are less rigid and more flexible and likely to change. This distinction is what Kuhn failed to make. Moreover, Weinberg [4] argues that the normal periods of science are not periods of latency and dormancy, but rather they are essential phases for scientific evolution.

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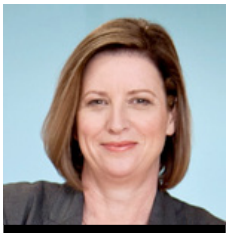

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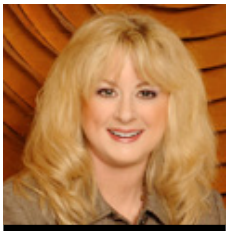

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3. The limits of science:

Scientists are divided on the issue of the limits of science into two opposite groups. On the one hand, some believe that there is no limit to science and that what science is yet to achieve will not be less in essence than its greatest accomplishments so far. On the other hand, others believe that science has exhausted its potential and is close to reaching its limits.

In 1994, Steven Weinberg published his renowned book “Dream of a Final theory” [5] where he predicted that science, lead by physics, is close to adding the final touches to a complete theory that would provide a final and comprehensive explanation of the world and the birth of the universe.

Weinberg based his prediction of this great expected newborn of science which would explain the universe on his conviction that science is now close to uniting the forces of gravity with the electromagnetic forces and the nuclear forces in one comprehensive theory known as the unified theory. Perhaps Mohamed Saladin El Naschie’s research [6] comes along this line of thought, where many leading physicists anticipate he will accomplish ground breaking results that will crown his journey in science, and indeed we personally wish him the best of luck in fulfilling his destiny. Other notable attempts are due to the work of E.Witten and L.Smolin.

Weinberg’s book of course resulted in a wide debate where some expressed their doubts and non acceptance regarding Weinberg’s vision and found it a product of a very particular Weltanschauung.

Along that line came John Maddox’s book “What Remains to Be Discovered: Mapping the Secrets of the Universe, the Origins of Life, and the Future of the Human Race” [7], where the author goes over science’s great achievements and material progress in the past and the present, and what humanity accomplished along the way. He also defines the aspirations and higher objectives that science will thrive in order to reach, as well as the anticipated challenges and occasional unexpected developments that may take mankind by surprise.

In brief, Maddox foresees that the future of science is of great importance, and no less significant than what has been achieved in both past and present.

On the other hand, and far from this theory of the endless horizons science has yet to conquer, John Horgan’s “The end of Science” published in 1996 pictures an aging science near its end that will no longer witness revolutions and great discoveries, and that will at most provide finishing details within the general frames that have been established.[8]

Horgan also cautions from scientists arrogance and their exaggerated confidence andsanctification of science. He also finds Weinberg’s theory unacceptable, as to him the final theory is but a mirage drawing scientists blinded by their arrogance.

Bryan Appleyard takes the same position on the matter in his book:” Understanding the Present: Science and the soul of Modern Man” [9] where he goes over the unrealistic presumptions of scientists, criticizes their arrogance and demands containment of scientific research in order to redirect it, only this time to be based on principles of ethics and integrity devoid of arrogance. That is also the opinion of Edward Tenner in his book: “Why things bite back” [10]. In his book, Tenner severely blames scientists for the negative, inhuman, and harmful impact of science on the future of life on Earth, as well as the terrible consequences that came as a result of the greatest achievements,

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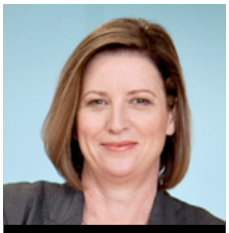

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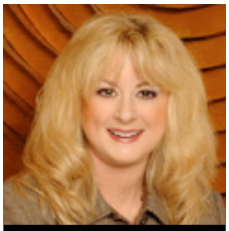

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for instance nuclear and biological arms.

And in 1998, John Barrow published his book “Impossibility: The limits of Science and the Science of limits” [11], where he describes the maturity of science as being closer to old age, and that consequently it is time for science to seek its end since it has become useless.

An increasing number of pessimist thinkers that cannot all be listed here continue to warn of the doomed end of science, and that explains the growing voices that are calling for a framework of universal principles and ethics to curb the evolution of science, one that all nations and cultures can agree upon, especially in biological sciences where attempts are occasionally made to alter creation and to clone creatures.

4. The limits of science from an Islamic point of view:

It might be of at least a philosophical interest to readers of a scientific journal such as C,S&F to venture in to recalling what the Koran,which is a moral codex for over,one and half billion people says of knowledge “it is only a little that is communicated to you, (O Men!)”. The Konan repeatedly invites man to reflect and observe this universe as well as God’s creation in almost 570 verses. Moreover, he informs us that we have touched but the tip of the iceberg in science, which indicates that the limits of science are not palpable as Horgan and Barrow or their supporters argue, and that there is a vast world of knowledge yet unexplored. However, the achievements of the human mind in the fields of science are limited by what is meant for us to be able to recognize the presence of The Originator of Creation:”Soon will We show them Our Signs in the (furthest) regions (of the earth), and in their own souls, until it becomes manifest to them that thy Lord doth witness all things?”.

It is thus clear for us that science for Muslim scientists consolidates faith; especially that Islam makes it a duty for every Muslim to seek knowledge as is mentioned in the Hadith and many verses from the Koran. And Muslims, along with their nations, stand far from the circle that went from a faith that condemns science to a science that condemns faith. The writer feel that the above remarks are extremely important in view of current world event and are meant to encourage scientific debate on fundamental issues. Science combined with faith helps scientists to distinguish through their moral culture and intellect between beneficial science, and harmful application of science and the author would like to recall many several statement by Einstein, Heisenberg, and Oppenheimer to mention only a few.

In Goethe’s Faust as well as many religious beliefs the Koran relates a particular instance where Satan challenges Man to resist his temptation: “I will mislead them, and I will create in them false desires. Isn’t there in the many attempts and biological experiments in genetic engineering clear references to the meaning insinuated in this verse? Perhaps it is all but a continuous circle that has lead us from basic necessities guided science, through periods of unimagined luxury and possibilities as well as appalling poverty and destruction, to a point that will lead us back to the very beginning, the birth of science that came when man first looked at the heavens, and questioned for the first time his origin, his presence and his destiny.

5. Conclusion:

The debate over science will constantly be fueled by both fervent believers in the extraordinary path that still lies ahead of it, as well as the more skeptical ones who believe to have detected the signs of its nearing end. In truth, it is our future as a living species that we are trying to predict as we ponder over the evolution of science. It is

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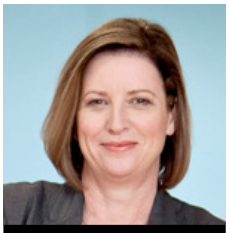

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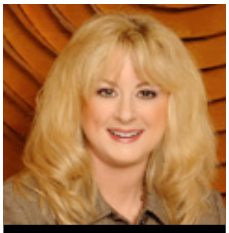

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our personal belief that as long as man is, and man thinks, science has not yet fulfilled its destiny. A much wiser man once said: "I think, therefore I am " this man is no less than Rene Descartes [12]. As long as we are here to question the nature of things, there will still be room for science to grow, and the endless questions we have to yet answer promise an endless horizon for science to conquer. But like a mature living being, it cannot afford to act without reason and care. More than ever, we need to exercise caution as we steer the course and applications of science…so that it may help us to better understand the world we live in, and ideally, to make it perhaps even better for all of us.

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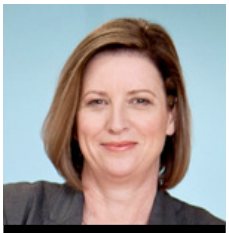
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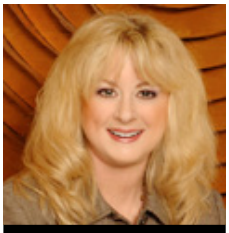
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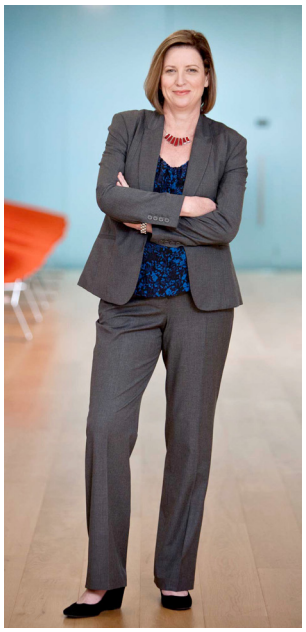
Life and Work in the Digital Era



"The Challenge of Innovation"

by: Kate McKenzie, Chief Operations Officer, Telstra

"Innovation is as much about closing the productivity gap as it is about new revenueopportunities. We all agree that innovation is a good thing but as corporations get larger, they tend to lose sight of innovation. Large companies traditionally reinforce past successes and innovate by making incremental changes to existing product to see guaranteed returns. To achieve revolutionary growth, we need to change traditional strategies; sometimes it even requires partnership with smaller companies to get external perspective."

"Telstra's innovation strategy is divided across five areas across Resolution, Innovation, Incubation, Co-creation and Ventures. Our strategy is not so much about the ideas themselves – it's about having an effective framework in place. The Incubation step is where we partner with start-ups external to the company through a program we call "muru-D". [https://muru-d.com/] We invest $40,000 in exchange for 6% equity and provide them with access to business mentors, put them in touch with our suppliers for a six-month incubation period. At the end of the six months they participate in a demonstration day for media and investors to secure further rounds of funding."

"As incumbents we must evolve and innovate to survive. The challenge shouldn't be to predict what the next innovation will be, but to make sure we can capture it when we see it. If innovation is key to our success then we need to make it part of our core business and that means matching the right skills to the challenges – less of the traditional mindset and more of the visionary."

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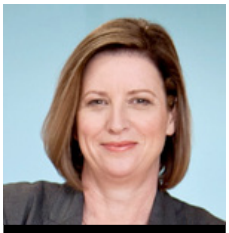

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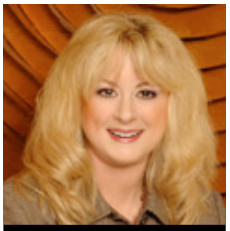

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THE MOBILE CENTURY

Life and Work in the Digital Era

The Impact of Mobile, Technology and Social Media on the Global Electoral Process

by: Michele M. Merrell

The continued development of mobile devices and their intersection with other forms of technology such as applications and social media has forever changed the process for elections, democracy and freedom. Now citizens are connected more than ever to the electoral process, as they have become increasingly engaged with events occurring in their own countries, and are holding their governments accountable for election outcomes. The ongoing growth and scale of social media platforms has also created the momentum for two-way communication between voters, politicians and their governments.

Social media is increasingly being used in many countries to mobilize citizens to get out and vote, holding government officials more accountable for election results, and to document instances of fraud and abuse. Prior to the intersection of mobile, technology and social media, there was little way for underserved populations to record electoral injustices short of hearsay or conjecture. Now, with a feature-rich smartphone with an imbedded camera and an internet or broadband connection, election monitoring can become a process that everyone can participate in.

When one considers the immediacy of news in the world through mobile devices and the Internet, it is easy to understand this new level of accountability, as users now have both a forum and an audience in-country or globally to discuss and report on electoral issues. Social media also has the ability to bypass traditional media such as print, television or radio, which often hold bias toward certain political ideologies that can affect editorial content, and thereby potentially impacting voter and election results. The key value of social media is that anyone, anywhere can engage with an audience, attract followers, and report on events in real time.

Politicians are also seeing the value in broadcasting their message to as many people as possible, as quickly as possible. Text messages, video uploads, and pictures are all broadcast via SMS or broadband data, and their information is blogged, tweeted and videos are uploaded to YouTube and other social media platforms. These methodologies can create instantaneous public debate over issues as well as immediate backlash over electoral injustices, corruption, or other acts that are perceived as not in the best interest of the public. Grassroots organizations can quickly mobilize, and draw upon both local and global support. App tools enable activists to track and monitor large numbers of followers who are able to participate in debates.

In 2008, the United States presidential election became known as the “social media election,” as the candidates used tech savvy teams to fundraise and build grassroots support over social media forums and deploy mobile campaigns. Since then, these methodologies have become a standard in the U.S. election arsenal for politicians ranging from Twitter feeds, to microtargeted mobile message campaigns sent to voters all the way up to election day. Political websites enable viewers to set up a profile, connect with other like-minded voters, attend local events, raise funds and download election app tools. Fundraising requests are now broadcasted to like-minded groups, and money-raising efforts via online advocacy are greatly enhanced by the ability to donate to the candidate of choice, with just the push of a button and on a repeated basis.

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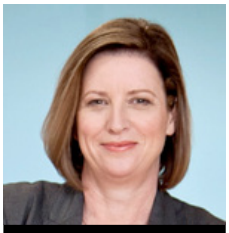

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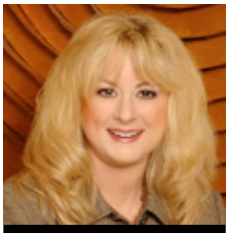

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Life and Work in the Digital Era

These bottom-up grassroots tactics combining mobile, social media and technology are now an integral part of all political strategy, as they help develop a groundswell of empowered volunteers who feel as if they can make a difference.

Today, the 2014 elections in Indonesia are underway for parliamentary elections in April, as well as a presidential election in July. It is estimated that of the 187 million eligible voters in Indonesia, nearly one-third will be first time votes between the ages of 16-20 (Source: The Asia Foundation). This young population is constantly online and connected via mobile devices and the internet, and 9 out of 10 are actively participating in social media. As in other countries, politicians in Indonesia have communicated their platforms via social media and mobile technology, and have helped voters stay engaged in the political debate at hand. It is expected that this level of connectivity will greatly shape the political landscape for years to come.

In Africa, biometric technology has also been adopted to help address electoral fraud and increase the transparency and credibility of the electoral process. In the Democratic Republic of Congo (DRC) alone, more than 25 million voters have been registered and validated via biometric technology (Source: Marketplace Africa). In Sierra Leone, biometric technology is used to capture thumbprint and facial features when registering voters. In Nigeria, more than 65 million people have had their pictures taken and thumbprints scanned in preparation for the elections. Many other countries including Mozambique, Zambia, Malawi, Rwanda, Senegal have all used some form of biometric technology to register voters.

In other parts of Africa, as well as in Egypt and Tunisia, monitoring of elections is taking place through text messaging (SMS). SMS monitoring is carried out by observers who send reports from polling stations via text messages from their mobile phones. Information is sent to a central location and data is fed into reports regarding whether polling stations are open on time, whether there are any staffing issues to report, instances of voter intimidation or misconduct, as well as voter tallies.

The methodologies being used through mobile phones, smart phone apps and data platforms are greatly enhancing the speed, efficiency and impact of communications during the electoral process. While addressing issues of voter fraud through technological advances and leveraging mobile innovations are a starting point, expectations about the role of technology in elections must be tempered. Eliminating fraud and electoral malfeasance will not come just through the adoption of technological advances, but by first addressing the weak country's government and the inherent institutional issues that often contribute to voter fraud in underserved populations.

On their own, mobile devices, social media platforms and the latest technologies will not propel democratic governance. But they can become an important catalyst to create better electoral transparency, open new channels of communication, to connect people to issues, and help them engage in proper governance and electoral processes, and to ultimately have their own voices heard.

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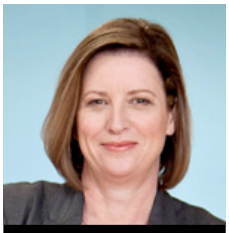

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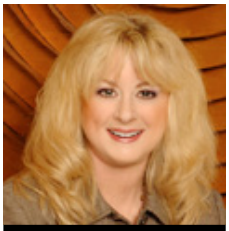

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