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Governing by Wiki: Fast, Flat, and Furious Social Media Foresight Study

"We need to nurture a more performance-oriented, collaborative and innovative culture by, for example, taking greater advantage of Web 2.0 tools to deliver our business." – Wayne Wouters, Clerk of the Privy Council and Secretary to the Cabinet

Canada 

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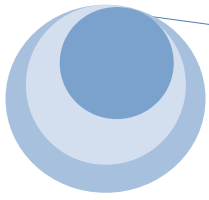
Why Foresight?

No one knows the future – but foresight studies use a structured approach to examine the relationships among the actors in a system, key assumptions, uncertainties, those factors driving change, and expected and unexpected outcomes which allow us to identify a range of “plausible futures” Such studies, when conducted by governments, allow policy-makers to reflect on how the environment is changing and what additional information and planning may be required to ensure resilience.

Through extensive consultation and engagement with private and public sector social media experts, Horizons conducted a foresight scenario exercise to consider these plausible futures for these technologies and potential implications for Canada. This report outlines this process and findings.

Acknowledgements

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Postal Service

Telegraph

Telephone

CompuServe

UseNet

BC

1700s

1800s

1960s

1970s

In fifteen years...

Can Canada be a leader in wiki-governance?

Will Canada set the standard for digital inclusion as it did in multicultural diversity and immigration in recent decades?

Will governments have the policy tools and levers appropriate for issues associated with the digital era, such as wiki-governance, digital identity, cyber-security, digital stress, or digital addiction?

While currently one of the most digitally connected populations, will Canada become the top contender as the world's most digitally literate nation?

Will Canada move up in the ranks of countries most attractive for business with its highly qualified personnel and a policy environment conducive to businesses in the digital era?

In addition to encouraging immigration and fertility rates, will we look to breakthroughs in artificial intelligence as an additional tool to address effects associated with population aging?

People need to question what they know about digital technology, in particular, social media, and explore different ways in which it may evolve and shape our society over the next fifteen years. This study attempts to understand the driving forces as well as uncertainties shaping the world of social media and more importantly, the potential implications for the federal government. This is not an attempt to predict the future, but to dive into the unknown and illuminate a range of plausible futures to support policy development over the medium-term.

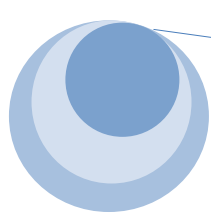
The World We Are In

The digital age has arrived with accelerating speed and an expansive reach. Like its predecessor, the industrial age, a new global pecking order is shaping up: some are ahead of the pack; some stay in the middle, while

"In just a few years the Internet has made...our store of knowledge accessible to the widest possible audience. Democracy and human rights, States have been incited to greater transparency and, in some countries, oppressed peoples have been empowered to make their voices heard and to act collectively in the name of freedom." – Nicolas Sarkozy

others are catching up. Where will Canada be in the next decade? How will it compare to its other G7 countries, or, with the emerging economies?

This study attempts to explore some of these questions with a focus on the impact of social media on institutions, behaviours, and values. By now, it is almost cliché to say that social media is changing the lives and habits of humankind. It is synonymous with immediacy, pervasiveness, openness, interactivity, connectivity, and transformation.



Internet Relay Chat

1980s

Six Degrees

1990s

cyworld

2000

Multi-Player Online Games

2001

Wikipedia

Friendster

2002

Collaboration, peer-production and co-creation through social media are not exclusive to businesses or social life, though they still dominate in these areas. As more people use these tools, there is an expectation that a similar level of engagement with government will increase. Governments at all levels are beginning to recognize the potential of social media to increase civic engagement in the policy-making process. For example, Iceland is in the process of drafting a new constitution with public input via Twitter, Facebook and Flickr.¹ Here in Canada, while mostly limited to internal use, governmental pilot projects are experimenting with wikis and collaboration platforms.

A Change is Gonna Come

The ubiquity of tablets, smartphones and other devices that constantly link us, coupled with the influence of social media have accelerated the pace of connectivity. Surprises may arise from impacts that go beyond establishing relationships and reconnecting with old classmates. In 2011, both the 'Arab Spring' and England Riots demonstrate the power of network-enabled technologies in facilitating societal change. Social media marks a fundamental shift in society, and will contribute to a change in many ways. It can bring us closer to people, places and objects from afar while at the same time ensconce us into 'birds of the same feather'.

Artificial Intelligence and the increase of hyper-personalization

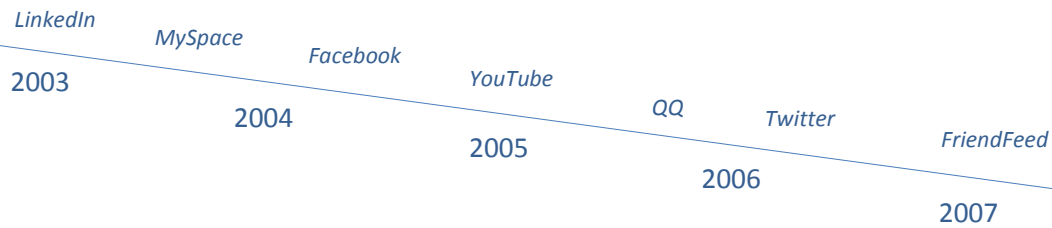
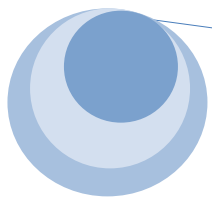
The number of tools, apps, platforms and social sites is increasing at a staggering rate and the devices that house them are getting smarter. This artificial intelligence is all around us. Everything from the online articles you read, to the shopping you do are influenced by suggestions of things that "they" think you will like, as companies collect data on our preferences without our awareness. But is this artificial knowledge changing how we think for ourselves? People can pick and choose from whatever interests them, essentially personalizing their own digital worlds. But how do they relate to these new virtual places? And when they get there, how are their lives affected? In reality, it will be however they want it to be, as they have the power to customize their own experiences.

Peer production, collaborative consumption, and innovation

The clear line between consumer and producer is blurring. Citizens are going online to search, read, scrutinize, authenticate, collaborate, and organize like never before.² Williams and Tapscott refer to this as the "prosumer". Individuals want to be heard and active in the creation of new ideas, products and even policy-making. We are also seeing the rise of "collaborative consumption", such as car sharing or trading of goods online, which has the potential to dramatically change how society and the economy work and interact.

Technology and institutional culture shifts

"[T]he nature of work itself is changing. Work has become more cognitively complex, more team-based and collaborative, more dependent on social skills, more time pressured, more reliant on technological



competence, more mobile, and less dependent on geography.”³ But what does that mean for government? Should government design Apps? If so, what does this mean in terms of access and equity? Is the public service keeping pace with technological change? Or with the intensely connected public? If not, this represents an opportunity and challenge for transformation⁴ which may fundamentally change how we conduct business.

Impacts on the work environment

What if you never had to go back to the office? Telework is common in today’s world, but as social media evolves, it is changing what we might think of as “remote access” in ways that can only be imagined. Take for example IBM employees that meet every day on [Second Life](#)⁵; most of them have never met face-to-face.⁶ But what will this mean for the economy and society? There would be no need for centrally-located service industries if there is no central location to where large numbers of people travel on a daily basis anymore. The implications, both positive and negative, are potentially limitless.

Gamification and virtual currencies

Who among us has not engaged in online transactions? What was once cutting-edge is now so common we hardly give it a second thought. But what’s next? Virtual currencies, including how the points earned in online gaming, are already being used for purchasing real-life goods. And that presents some potentially interesting implications, not the least of which is changing what we perceive to be valuable. As gaming points take on a monetary value, what are the potential implications on real currencies? What are the taxation implications? Will it result in an underground economy?

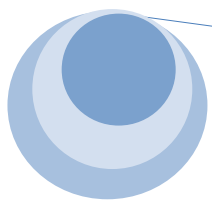
Uncertainty Bytes

The continuing evolution of social media depends on the interaction of uncertain factors, each of which could play out in different ways. One of these uncertainties is the pace of technological progress. This will be determined, in part, by the amount of effort and investment placed in R&D and innovation, and the openness and prevalence of businesses to continue to use Web 2.0 tools to solicit the wisdom and creativity of the “crowd”.

A second factor is accessibility to the Internet, and means to reconcile the incongruence between connectivity and isolation. The range of strategies and investment on broadband infrastructure that can be employed may be telling in this regard.

User behaviour will also determine the success of social media in the future. These may be influenced by perceived need, evolving preferences, prices, ease of use and attitudes towards privacy and security. Will those raised in the Web 2.0 world be that concerned about privacy or will transparency be a more dominating feature?





kontain

NetLog

RenRen

Google Buzz

Google Plus

Faces

Quora

2008

2009

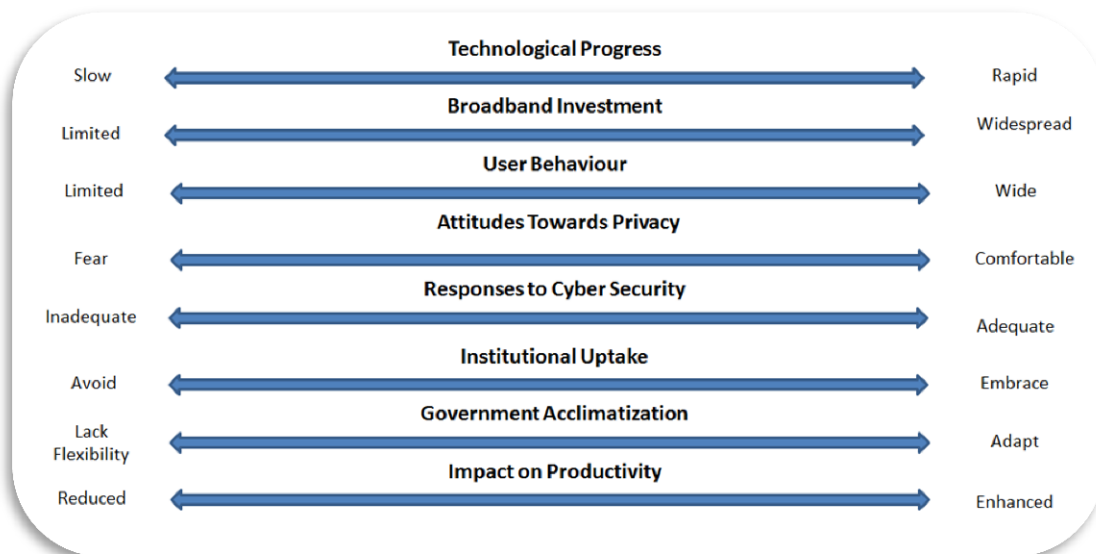
2010

2011

An increasing reliance on social networking tools by governments and businesses also increases their vulnerability to cyber-attacks. The adequacy of their responses will determine the uptake of collaborative technologies. How will these risks be assessed and shared? Will responses to cyber-security be sufficient, or will cyber-criminals always find ways to neutralize security investments?

Social media uptake and adaptation processes of organizations may also determine ways in which it will be used. What type of balance will be struck between social media use for outsourcing policy and product input and managing the inflow of feedback received? How will organizations develop strategies and policies that take into account the rapid pace of technological change? Overcoming inherent problems of social media (e.g. the potential loss of critical thinking due to distraction) and capitalizing on productivity gains (e.g. through collaborative platforms) will also shape how prevalent social media will be to our organizations of the future.

It is safe to say that we are uncertain how each of these factors will play out in the future and how they will interact to create a limiting or enabling environment for social media. Nevertheless, through building plausible futures underpinned by these uncertainties, we may gain a better understanding of how social media will evolve and potential policy challenges and opportunities – and inform decisions and state of preparedness on all parameters of uncertainties.

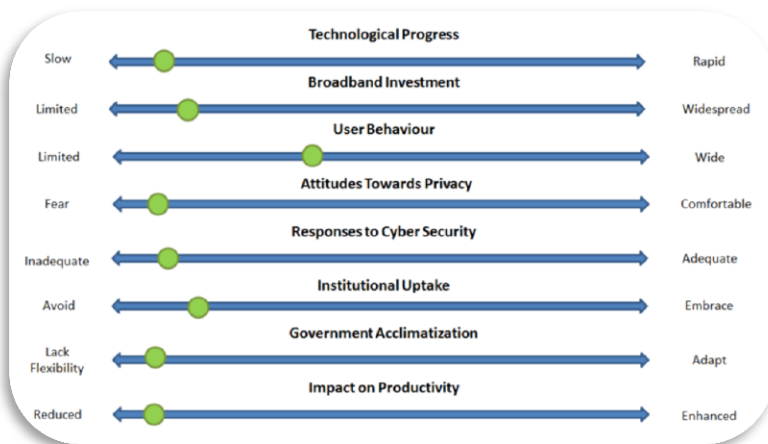


Through the Looking Glass

The future holds different realities shaped by the environment, culture, politics, economy and technological progress resulting in different opportunities and challenges for business, government and individuals. These different worlds allow us to visualize the interactions of multiple components in distinctive ways that can help us figure out where decisions made today could lead. The four following narratives are on a continuum from a declining world to one of profound transformation. While these scenarios are not expected to play out as scripted, they are meant to shed some light on how social media may impact a range of policy domains.

The Undernet Emerges

Social media is still around, with all the risks involved. Cyber-threats are discouraging businesses, governments and individuals from engaging openly and being transparent in social networks. As a consequence, it is largely being used for entertainment purposes. The new trend is towards closed and exclusive groups.



Slow Decline

Paula, 28, doesn't quite know who is responsible for closing the gate. Was it the hackers or corporations and governments? It doesn't matter anymore. She is still motivated to bring down the walls so the Internet can become what people imagined it could be fifteen years ago. Back then, she was only 13 but she still remembers the buzz around Facebook, Twitter and how citizens asked for more transparency from institutions and how they wanted to feel empowered by engaging in democratic life. Thinkers claimed that social media could trigger innovation and enhance productivity. Paula still believes them, but the world will need to go through a real reversal if we are to prove it.

Today, almost everyone is scared of registering to social media platforms for fear of having their identity stolen or parts of their personal information used to harm their reputation. The courageous few that do use social media don't go much beyond playing games or planning social calendars.

As a member of the network called "the Undernet", Paula targets corporations with devious methods or digs for government secrets – making sure her father's friend Adit, a federal employee, doesn't find out – and brings the information out for the public's benefit. Some would call her a hacker, but she prefers the term leaker. Her goal is not to embarrass corporations or governments, but force them to be more transparent and collaborate with each other and with the public.

Sadly, some of her Undernet fellows do not deserve their membership card; they steal identities or corporate secrets only to sell them to the most generous buyer. Their actions are undermining all of her efforts, pushing users to hide within the borders of their closed communities, and forcing institutions to invest more heavily in cyber-security. Maybe the Undernet is the problem. If it ceased to exist, would corporations and governments open their doors? Would users go back to using Web 2.0 tools as they were first intended?

Policy Questions

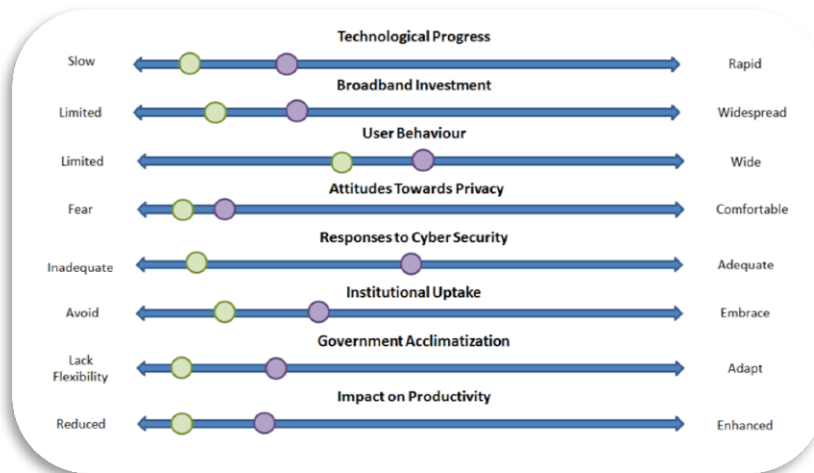
What measures, if any, can be developed to address cyber-security and identity theft issues?

What are the opportunity costs of not introducing the full capacities of Web 2.0 technologies?

What is government's role in ensuring the public has the information and tools to adequately respond to shifting cyber-security threats and privacy issues?

Cyber “Babel” Lives On

Information and communication technology corporations are waging war against each other, trying to seduce users in adopting their products. Virtual silos have become the norm with multiple platforms that don't work or communicate with each other. There is a hunger for new and innovative ideas, but little cooperation: governments, companies and organizations hold on to their secrets.



Muddling
Through

Denis, 55, finally finds a seat in the overcrowded train. How come this route is always full and the other one always so empty? Couldn't the city use public input through social media to solve some of its transit problems? Denis knows the answer is simple: the predominance of the *Big Five*, giants of Telecom, has pushed people away from collaborative platforms. However, he heard from a friend, Adit, that the federal government is launching a pilot project testing the capacities of wikis in policy development. Denis is not sure how it could work as every department is using a different platform and promoting a risk-free environment.

He hesitates a few seconds before turning on his brand new tablet. The so-called personalization offered by the corporations is the biggest annoyance for him. After the tablet has greeted him, two pop-ups offer him a great deal on golf clubs (he played for the first time in his life last weekend), and worst of all, a two-month free membership to a singles networking platform (his wife just left him).

How did society get here? He remembers a time when he wasn't even connected to the Web, living as he was in a remote area. Now, the corporations will do anything to count you as a user, *their* user. Once you are on board, they track your every web search and every action to know you better and create a customized marketing campaign to get your money. He sometimes wonders why he still bothers with these distractions; surely there are other ways to keep in touch with people?

Looking back at the flat screen of his tablet, Denis can't help but wonder if his colleague was right. According to him, one of the *Big Five* is beginning to be more secure and less pervasive. Maybe he did not buy the right tablet. Then again, even if that was to be believed, he is not sure he could transfer all his contacts and files to this new tablet.

An active citizen in his community, Denis hates to put the blame on the government, but couldn't they do something about it? Strong regulations could restrain these corporations from digging too far into people's privacy. But most of the *Big Five* are based in other countries. Does the government have any power over them?

Policy Questions

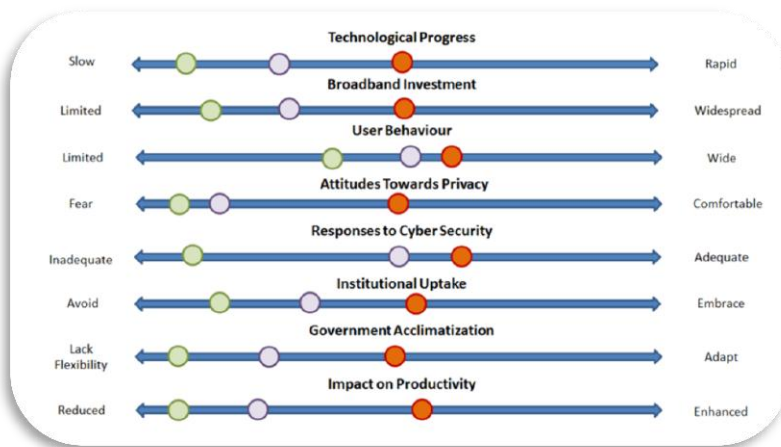
What is government's role in ensuring the legitimate use of private information?

What impacts will the lack of interoperability between collaborative platforms have on effective use of social media?

Will government be able to use the data generated from social networking services to better serve its clients? What will be the privacy implications? Will there be issues regarding the sovereign ownership of data?

It's Not Just Play Anymore

In recent years, the price of computers, smart devices and Internet connections plunged to low levels due to the constant progression of information and communication technologies (ICTs). The majority of the world's population is now connected and using on a daily basis some kind of social software (micro-blogging, messaging and collaboration platforms) to co-create knowledge and exchange services, goods and interests.



Gradual
Progress

Charlotte, 31, feels like she is visiting the future. The city her sister, Paula, has moved to is so different from the small village she lives in. Here, people walk around talking to no one – she has learned since that they have imbedded earpieces – or are absorbed by their smart devices. Charlotte has had her share of experience with the Internet and social media platforms, and some of her neighbours have also adopted this lifestyle. But she has always been reluctant to spend all her time on what she calls gadgets. The reason is not because her village lacks high-speed: the necessary broadband infrastructure, supported by governmental incentives, has been put in place by private companies. She just doesn't buy-in to the hi-tech culture. There are the few “de-techers” who are skeptical of these invasive technologies, and her values seem to gel more with theirs.

However, she sometimes wonders if she should follow Paula's example by becoming more active online and even moving to the city. Without an active presence on social media platforms these days, you can really feel left behind. Charlotte's choice prevents her from profiting from some services only available through social media or from participating in those neat open collaboration projects that governments and businesses are facilitating. She hears that enablers are still looking at ways to handle the large influx of information generated by the crowd; she could probably be of some help – she always has creative ideas – but is this the life she wants? According to Paula, if she became involved, she could even work for more than one employer at a time. At first, the idea of having more than one boss didn't really sound appealing, but her sister describes it as freelancing.

Charlotte may not be ready to leave her simple life behind, even though Paula claims that online networks offer a real sense of belonging. She heard on the news how some communities are having an impact on the global scene. However, it is not always for the best; most groups put their efforts in solving problems, but the problem of flash mobs – where people use social networking technologies to coordinate burglaries and vandalism – has not been resolved. And what if she discovered a new passion for gaming? Would she develop an addiction and end up like her father, Denis, who had to go through therapy in one of the new rehabilitation centers? If she changed her mind, how would she learn all the skills necessary to use all this technology in an efficient way while protecting her personal information? Would anyone help her?

Policy Questions

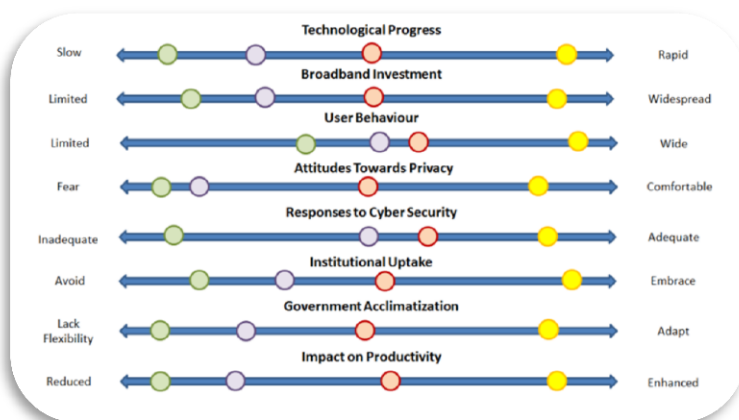
What incentive structures can government use to encourage more private investment in broadband infrastructure?

What policy levers are available for individuals, firms and governments to share the risks of non-standard work fostered by collaborative technologies?

What policies could be put in place to deal with the negative consequences of social media, artificial intelligence and augmented reality?

The Global Village Has Arrived

Social media has matured and its efficiency is broadly recognized. Multi-sector projects are now common and the door is always open for suggestions from the outside. Breakthroughs in technology have simplified processes, proactively connecting people, organizations, business and governments.



Transformation

Adit, 54, hears that familiar buzz in his ear indicating that someone is trying to reach him. This time, it is not someone but *something*; the headlamp in his bedroom wishes to inform him that he left it on and wants to know if it should turn itself off and ask the other lights around the house to do the same. Sure! he replies.

Going back to his work, Adit nods in approval at the policy piece being written in real time by his one-time project employees from all over the country. Crowd-sourcing has its strengths, but it can sometimes be hard to deal with the large amount of input received. Handing out contracts to temporary employees and attributing a specific role for each member is easier to manage, although there is more and more pressure from these non-standard workers to receive pensions and benefits. Not every project using co-creation with external inputs is a success, but the team he is currently overseeing is impressive. And having that policy ideas bank built on GCPedia during the last fifteen years by public servants really helped getting started.

Opening the government to business partners and citizens to co-produce policy and deliver services gave a real boost to public sector innovation and has enabled the nimbleness and fast rate of response that has become essential in the digital era. When social media platforms are used for collaboration purposes and problem solving, managers really see a rise in productivity levels.

A couple of years ago, educating the population so they could have the necessary skills to participate in online projects was a concern, but now Adit has to admit that since breakthroughs in artificial intelligence (AI) technology, even a peasant from the 12th century would understand how to use social media. AI can even manage your privacy settings, showing your friends things that only friends should see.

Citizens are now empowered and engaged in democratic life; policy is written by the citizens, for the citizens. The complaints that people with no access are being left out will soon be thing of the past: a new Bill was just accepted by Parliament making high-speed access to the Internet a right. The government is working hand-in-hand with the private sector to build the broadband infrastructure that will support the new Act.

Policy Questions

How will social media impact the way productivity is defined and measured?

How will government address digital inequity?

How will government handle the large influx of social media-generated information and input into the policy development processes?

Setting the Stage

These scenarios underpinned by the uncertainties highlight varying implications for policy. How will social media shift our governance structures? How will government address security, privacy and accessibility issues? How robust will traditional strategies be in the wake of rapid technological progress? We need to be ready to create balance between managing the potential opportunities and pitfalls:

Wiki Governance

Social media will fundamentally change how governments interact with the public.

Social media is transforming traditional governance models, resulting in shifting roles and responsibilities for citizens, governments and non-state actors in an increasingly networked world. Open data, open policy development and crowd-sourcing initiatives all provide a means of enhancing citizen and stakeholder engagement. Social media also has the potential to enhance governance through enabling collaboration and coordination across sectors and both national and international jurisdictions. Complex societal challenges can be tackled in the virtual space with the use of open source tools, such as the mapping tool developed by [Ushahidi](#) that has been used to map incidents of violence throughout Kenya and to help with rescue efforts in the wake of the Haïti Earthquake. At the same time, governments will need to find ways to make sense of the large influx of information and opinion that could potentially paralyze the governance system. While governments will continue to play a large role in priority setting and ultimately be accountable for the outcomes of policy decisions, striking a balance between open citizen engagement, direct decision-making and representative democracy will be a challenge. It will also be necessary to weigh the need for transparency and mass collaboration with that of accountability and security. Furthermore, the ability of citizens and non-state actors to use social media channels to get their message out quickly, efficiently and effectively will have varying implications for governments, who will need to keep pace.

Your access is fairer than mine

Increasingly the Internet will be used to promote and provide public services to citizens.

Accessibility to the Internet, digital devices and basic software will be one of many digital issues that governments will have to deal with, especially as online platforms become a key sounding board for citizens, a way to voice their ideas and expression, and an increasing means of economic necessity and opportunity. Leaving this issue unaddressed could result in a divide between the digital haves and have-nots, both between and within countries. Certain countries⁷ are already taking action to ensure the digital rights of its citizens. A digital bill of rights, the digital age of majority and “digital footprints”, where a person’s on-line presence continues after death, are further emerging policy issues in which decisions will have to be carefully crafted and balanced.

I'm not paranoid, you are!

Challenges and threats to privacy and cyber security will continue to plague the Internet.

Balancing between openness, privacy and the protection and propriety of information will be an increasingly important issue for governments in the new wiki world. While businesses are already tracking and using data gained from Internet activity for marketing, the question remains as to what other purpose such data could be used. Cyber security poses varying challenges, as witnessed by the impact of hackers, cybercriminals with multiple and changing identities and the WikiLeaks example.⁸ In the near future, there will be a growing dichotomy between group and individual information and what should be considered public and private information. That said, there is a danger of going too far on security issues in a way that deters the open and collaborative foundation upon which social media is built. Governments will need to find the right balance between the implementation of regulations and policies that protect citizens from abuse and protecting freedom of speech and the sharing of ideas.

More earning and learning

Technology will play a huge role in the way people learn and the medium they use to do so.

In a world where social media and digital technologies are shaping the landscape, citizens must increasingly understand how best to consistently use emerging and changing technologies. The digital literacy of citizens will play an important role in fostering critical thinking in the face of information overload. Institutions of learning are changing, with the increasing use of digital games and social media in the learning space, pointing to the increased availability of self-learning, post-education and lifelong learning. Accreditation issues related to learning in less formal educational settings will likely surface. Governments will play a key role in addressing these issues in order to encourage citizens to develop these new skills, especially as the digital generation takes centre stage in the workplace. Office culture may also evolve fast, with an emphasis on working 'wikily'. Working from home and for multiple employers at the same time could become the norm, which may have implications on the physical spaces of our current work environments. Government policy and operations will need to consider these emerging shifts in learning and employment and respond with appropriate strategies.

My avatar is healthy and sane, am I?

Weighing the balance between the health benefits and drawbacks of technology will need to be addressed.

Social media has benefits that can be applied exponentially; however it also comes with negative social impacts. Governments will need to consider its role in helping to offset these possible negative social consequences of the emerging digital age. Emerging health issues such as psychological disorders and Internet addictions, cyber-bullying, lack of physical interaction, degeneration of interpersonal skills, impacts on critical thinking and other potential health implications will need to be examined. The question for further exploration will be: are these new problems or an extension of pre-existing mental and physical health issues?

Your car cost how many points!?

The blurring boundaries between the virtual and real social worlds will be extended to and embedded in the economic sphere.

Gaming and virtual currencies have the potential to take on a serious role in the economy,⁹ with the opportunity for gamers to exchange virtual currencies for real goods. The opportunity may arise to live off gaming as a full-time or part-time job, potentially removing people from an already shrinking labour market. Social media and the ability to use open source tools has altered traditional industries and created a whole new player: the prosumer.¹⁰ Governments will need to address policy issues pertaining to this group, including entrepreneurship promotion and remuneration issues, as well as those relating to virtual currencies and the sustainability of traditional industries.

Building a virtual bridge

Proactive measures to foster digital technologies will be required in order to effectively encourage progress and manage the downsides.

As addressed in the first e-G8 Forum (May 24-25, 2011) as well as in the recent Speech from the Throne,¹¹ governments can play a role in proactively developing policies to invest in digital infrastructure to stimulate economic growth and innovation as well as to enhance governance structures. The main challenge is developing a strategy that is flexible and adaptable enough to take into account the rapid pace of change. This will require the need to provide an incentive structure for risk-taking in both business and government contexts, encouraging the freedom to explore and learn from mistakes. The relationship between social media in terms of enhancing or hindering productivity also needs further examination in order to better implement policies that promote efficiencies, and explore how productivity is measured and defined in light of this new technology.

The Futures are Ours to Build

What will be the next big thing in this digital age? We can only imagine what technological advancements might be coming up next, which continue to evolve at a fast and furious pace. One thing is certain, while governments try to keep up with the accelerating speed of technological advancement; living in the digital age is more than mobile devices, gadgets, and platforms. Rather, it is about having the appropriate policy tools for issues arising from the digital age. Moreover, the impact of digital technology will continue to be felt on the national and global stage. How governments respond to the opportunities and challenges brought forth by these technological advances will certainly have an impact on the prosperity and well-being of our country as well as its standing in the world.

The potential impacts on the digital age in the next decade and a half are uncertain. Through our conversations with experts on social media we extracted commonly held assumptions that led to the development of our four distinct scenarios. These are not predictions; rather, they are plausible futures that will unlikely come to pass as described above but may challenge readers in their own assumptions about digital technology, especially social media, and how the various forces could shape our future. We are all entering the mist half-blind, but we can lift the fog by exploring a variety of parallel worlds. If

elements described in these scenarios, as well as possible interactions across them, prompt readers to think about potential implications for policies or to rethink current policy tools, then, the report has achieved its goal.

Notes

¹ [Iceland is crowdsourcing its new constitution](#). World e.gov Forum.

² Don Tapscott and Anthony Williams. 2006. *Wikinomics*, p. 47.

³ Don Tapscott and Anthony Williams. 2006. *Wikinomics*, p. 246.

⁴ [Fifth Report to the Prime Minister, 2011](#)

⁵ *Second Life* is an online virtual world where you can create a “second” identity and live a virtual life.

⁶ (Digital Nation, PBS video)

⁷ In 2010, Finland’s Ministry of Transport and Communications made 1Mb of broadband Web access a legal right, with plans to make a 100 Mb broadband connection a legal right by 2015. [Cnet News](#). France’s Constitutional Council made Internet access a basic human right in 2009. [The Sunday Times](#). In 2011, Spanish citizens were given the legal right to buy broadband Internet of at least 1 Mb per second at a regulated and reasonable price wherever they lived in the country. [PCMag.com](#). [Right to access the Internet: the countries and the laws that proclaim it](#).

⁸ Some examples: [Hackers stole secret Canadian government data \(CBC News\)](#), [WikiLeaks and Stuxnet reveal growing cybersecurity threat \(The Washington Examiner\)](#)

⁹ “The gross revenues of the third-party gaming services industry were approximately \$3.0 billion in 2009, most of which was captured in the developing countries where these services were produced.” (Lehdonvirta and Ernkivist, 2011. [Knowledge Map of the Virtual Economy](#)).

¹⁰ A “prosumer” in this case is defined as one who produces and consumes the same artifact at once (Tapscott and Williams, 2006. *Wikinomics*).

¹¹ “[The Government of Canada]... will release and implement a Digital Economy Strategy that enhances digital infrastructure and encourages Canadian businesses to adopt digital technologies and provide digital-skills training for their employees and new hires.” [Speech from the Throne, June 3, 2011](#).

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