

# Technology Policy News

An occasional publication from the Centre for Technology Policy Research

## Inside This Issue ...

- 1** Cloud Computing
- 3** Environmental Sustainability
- 5** \*\* Guest Soapbox \*\*  
(with Dr Gus Hosein and Simon Davies from Privacy International)

*The Centre for Technology Policy Research (CTPR) is a new, independent organisation that aims to ensure that information and communications technologies (ICT) are better understood and exploited across public, private and voluntary sector boundaries.*



*Jerry Fishenden*

## Introduction

Welcome to the first newsletter of 2009.

This occasional newsletter takes a wider look at issues of technology, technology policy and strategy than most standard IT newsletters. Its focus is the intersection of where technology meets policy – and how technology has become an enabler, a key lever if you like, of policymaking and strategic business decision-making rather than merely an operational or administrative after-thought.

In this edition, we take a look at various topic areas and some of the key developments taking place within them, as well as highlighting some of the latest developments in technology with wider societal, business and policymaking implications.

In this, as with future editions, we include insightful third party perspectives on topics of interest. This first issue of 2009 has valuable insight from Simon Davies and Dr Gus Hosein, founders and directors of Privacy International, the leading privacy rights organisation.

I hope you find this an interesting read. As ever, your feedback and ideas for stories and improvements is always appreciated

*Jerry Fishenden*

Co-Founder and Director, CTPR

## Cloud Computing

For those of you not yet familiar with the term, the idea of cloud computing is that your computer resources are delivered from "out there" in the digital ether, accessed over the Internet. For some people, the Internet is the cloud.

The idea itself is nothing new, with services such as Hotmail having been in existence since 1996, providing email services "out there" in the cloud which we can use from pretty well anywhere in the world. What is new is the growing sophistication and diversity of the systems now being offered in the cloud, ranging from simple data storage such as [Windows Live Skydrive](#) with its 25Gb of free storage, through to systems such as [Microsoft Healthvault](#) and [Google Health](#), which let users store aspects of their personal medical records in the cloud, choosing whom to share them with.

---

... customers can forego capital expenditure ... paying instead for what they use.

---



---

"When you combine the ever-growing power of devices and the increasing ubiquity of the Web, you come up with a sum that is greater than its parts."

---



---

Those organisations with strongly coupled business and technology planning are going to take a clear early-mover benefit

---

The real significance from my perspective is that recent developments offer the opportunity for a major shift in the way we think about the governance, architecture and procurement of the computer services that we need (both as individuals and as organisations). And it's not the cloud in isolation, it's the balance of running software where it makes most sense. Sometimes that will be locally on our laptops, mobile phones or video gaming consoles. And sometimes it will be services delivered to us directly from the cloud. And sometimes it will be a mix, as when I use an application locally on my laptop but work on shared documents in the cloud.

Wikipedia puts its finger on the cloud computing pulse when it comments:

*"As customers generally do not own the infrastructure, they merely access or rent, they can forego capital expenditure and consume resources as a service, paying instead for what they use. Many cloud computing offerings have adopted the utility computing model, which is analogous to how traditional utilities like electricity are consumed, while others are billed on a subscription basis. By sharing "perishable and intangible" computing power among multiple tenants, utilization rates can be improved, as servers are not left idle, which can reduce costs significantly while increasing the speed of application development. A side effect of this approach is that "computer capacity rises dramatically" as customers do not have to engineer for peak loads. Adoption has been enabled by "increased high-speed bandwidth" which makes it possible to receive the same response times from centralized infrastructure at other sites."*

This moment in the economic cycle seems a particularly opportune time to consider any new governance model that lets organisations forego capital expenditure and merely pay for what they use. It also presents an opportunity to pro-actively reduce their existing IT cost base by assimilating these new service models.

These developments I believe are going to lead to a fundamental change in the way we think about architecting and procuring IT systems – and in the systems of governance we put into place around them. The real challenge, as ever, is not the technology in itself – but in the business and transition planning that will enable organisations to take meaningful advantage of these new opportunities. Those organisations with strongly coupled business and technology planning are going to take a clear early-mover benefit, with consequential payback to those of us who use services from those organisations. Some might argue now is the time to bunker down rather than innovate with IT. I'd argue the exact opposite: now is precisely the time to move from current inefficient governance, architecture and procurement models to ones that enable both improvements to service delivery and better cost-effectiveness. Sometimes the biggest risk any organisation can take is perpetual risk avoidance.

#### Further reading

- [Cloud Computing](#)

## Environmental Sustainability

December 2008 saw the final of the “Grid computing for a greener planet” competition. The challenge to entrants was to set out their ideas of how to use grid computing to deliver environmental benefits. Grid computing, a service for sharing computer power and data storage capacity over the Internet, can be applied to any environmental issue that stands to benefit from a huge amount of raw processing power to calculate massive data sets



The first prize for the Non-Professional Track was awarded to Christos Melissidis, an MSc student from Cranfield University. His concept was a simulation of our ecosystem. Melissidis proposed the creation of a virtual ecosystem in order to solve environmental problems. The idea feeds real time data derived from various data sources, such as the weather channel, into the virtual ecosystem while measuring its response.

The first prize for the Professional Track was awarded to Nick Pringle, an IT consultant and part-time PhD student from Glamorgan University, for his predictive traffic flow model. His solution involves enhancing existing GPS information by submitting individual route information to a grid computing system, which would calculate a journey time based on how many other people would be choosing to take the same route at the same time. This has the potential to reduce time spent in traffic jams and carbon emissions.

Entrants were judged primarily on their solution’s feasibility, scope and creativity. Second prizes were awarded for a solution that would locate carbon hot spots, and one that would monitor methane levels.

Technology is all too often spoken about only in narrow and negative terms when it comes to the environment, with people focused on reducing its contribution to carbon emissions. But we need to ensure that we don't lose sight of the bigger objective, which is how technology can enable us to rethink the way we learn, live work and play in fundamental and radical ways. And that is the real lesson of this competition: how technology can indeed help us find a way of producing a greener planet.

There are already many examples of software enabling smarter energy use – for example, lighting that detects if people are in the room and switches off lights if they are empty; or the low power modes in mobile devices which have wider applicability to make an increasing number of devices more energy efficient than they are today.

The Boston Consulting Group (BCG), working on behalf of the [Global e-Sustainability Initiative \(GeSI\)](#), has published an addendum to the [Smart 2020](#) report. It provides an interesting analysis of the significant beneficial impact that information technology can have on reducing overall carbon dioxide emissions. Focused on the

US, it estimates that IT could help reduce carbon dioxide emissions by between 13%-22% by 2020, which would represent overall gross energy savings to the value of \$140bn-\$240bn as well as reducing American dependence on imported oil by up to 36%.

---

*There are already many examples of software enabling smarter energy use*

---

To achieve such results four overarching policies were recommended in the US to accelerate the adoption of IT-enabled opportunities:

- To publicly recognise the important role that IT can play in the National Energy Efficiency Strategy
- To build a national "center of excellence" to establish standards and metrics for CO<sub>2</sub> emissions, consolidate and validate data, coordinate public-private collaboration, and share best practices
- To encourage the ubiquitous deployment of broadband, since connectivity will be the backbone of all IT solutions
- To create market mechanisms that reward energy efficiency and emissions reduction by monetising carbon emissions

There were also some more specific policy measures that could deliver an estimated annual reduction of 0.8 to 1.4 gigatonnes of carbon dioxide in 2020. These recommendations address four main opportunities:

1. A **smart electrical grid** that could reduce CO<sub>2</sub> emissions by 230 to 480 million metric tons (mmt) of carbon dioxide equivalents and save \$15 billion to \$35 billion in energy and fuel costs
2. More efficient **road transportation** that could reduce travel time and congestion while shaving off 240 to 440 mmt of CO<sub>2</sub> emissions and saving \$65 billion to \$115 billion
3. Energy-efficient **smart buildings** that could abate 270 to 360 mmt of CO<sub>2</sub> and save \$40 billion to \$50 billion
4. **Travel substitution** through virtual meetings and flexible work arrangements that could reduce CO<sub>2</sub> by 70 to 130 mmt and save \$20 billion to \$40 billion

---

*IT could help reduce carbon dioxide emissions by between 13% to 22% by 2020.*

---

Copies of the "Smart 2020: United States Report Addendum" and the original "Smart 2020" report can be downloaded at [www.smart2020.org](http://www.smart2020.org). It would be useful to develop a similar informed analysis and associated action plan for the role of IT in the UK.

#### Further reading

- [Traffic flow and virtual ecosystem entries win "Grid computing for a greener planet" competition](#)

## Guest Soapbox

In each newsletter, we intend to carry a feature by a guest expert, or experts – which may be authored by them, or which may be in the form of an interview.



In this edition, I'm pleased to be able to introduce two of the world's leading privacy experts, Simon Davies and Dr Gus Hosein. As well as being founders and Directors of Privacy International, the leading privacy rights group, they are also Visiting Senior Fellows at the London School of Economics. Vigorously and outspokenly independent (as you will see below), they are at times fierce critics of big companies.



Simon Davies

Dr Gus Hosein

So, here we go with a frank and verbatim Q&A Soapbox to provide some insight into how Simon and Gus view the world of privacy right now – the good, the bad and the ugly...

(*JF = Jerry Fishenden; SD = Simon Davies; GH = Gus Hosein*).

**JF:** What do you see as the main threats to privacy presented by technology at present?

**GH:** Well of course technology is just part of the threat. We're dealing with a set of fake ideologies and corrupt processes that happen to use technology as a vehicle to achieve often dubious ends. I think it's funny how we often get accused by governments and some others of being luddites because we don't like how search engines use personal information, or how biometrics are used to collect more information on individuals. So we are called "anti-" this or that, and it's assumed that we are anti-technology. Instead, we know the full range of technology that is available and possible, and we find it odd that the 'pro-technology' crew are only calling for the technology that is easy, or the technology they own the patents for, or the technology that increases their power, whether market power or power over the citizenry. It's certainly the case that the privacy protecting functions of technology are usually subsumed or ignored because of motives that are either malicious or ignorant.

**SD:** If we focus on the technology itself then perhaps

the key threats facing privacy could be grouped into two categories: "joined up" systems that allow the sharing of ever more precise targeting information between systems, and "democratisation" of technology, allowing surveillance to be placed into the hands of every citizen. I do agree though that none of this would be possible if it wasn't for the deeper problem of lack of regard for fundamental human rights, and the basic instinct of people in authority to trash even the most basic processes of openness and fairness.

**JF:** Are you generally optimistic or pessimistic about the general direction of travel?

**SD:** I think I've always been generally pessimistic, but with increasing strains of optimism. It's true that never before has there been such an overt push to capture every detail of our lives on surveillance systems, but it's also true that the privacy message has never before been so alive. That's certainly the case in the US, Germany and the UK. Those who would relentlessly destroy privacy are armed to the teeth and are making the final push over the line, but they are being met by forces of logic and reason. Unfortunately their false claims and their manipulation of language often persuade the public that surveillance is in the public interest.

**GH:** We would have given up a long time ago if we were always pessimistic. I'm only pessimistic on Sunday evenings and Monday mornings. But on Monday mornings, Simon's usually excited about starting the next great campaign, so that lifts me out of it. Seriously though, we are building the infrastructures of tomorrow and I think as a society we are all more aware of the implications of getting it wrong. And we are no longer going to accept ridiculous arguments like 'trust us' or 'we mean no harm' because the recent history of privacy invasions is littered with broken promises. So people are more aware, and there are more avenues for them to express their unhappiness. I'm just not convinced that all these concerns can be channelled to create real policy and technology change...

**JF:** What are the most positive things you've seen around technology with regards to privacy?

**SD:** Not strictly technology, but the decision on the Marper case (the retention of DNA samples of innocent people in the UK) was a huge victory. So too is the steady disintegration of the benighted ID register scheme in the UK. There are also some positive developments with social networking sites, and the steady growth in privacy awareness amongst both companies and users.

**GH:** The most positive thing? The abject failure of the technology to do what governments say it will do. Governments around the planet have promised the world with new fandangled technologies that will enhance their powers as they watch the rest of us, and yet the technologies fail to live up the expectations cast by governments. Look at the wonderful things said about the US-VISIT system by the U.S. Government and then review the Government Accountability Office Reports about the vast problems with the implementation. Read through the drivel in Hansard where a minister is proposing a new IT system and attacking his or her opponents, and you'll want to bang

your head against your keyboard.

**JF:** Do you see government moves to better regulate the Internet as a good thing ... or a threat?

**SD:** Oh god, definitely a threat. Many of these people haven't a clue about the workings of the Internet. "Better" regulation is a little like the rhetoric of "modernisation". No good can ever come of it. The idea for example of cinema style ratings for sites is about as fanciful as you can get.

**GH:** Ahh, the ratings for websites, another great idea from the technologically-advanced Minister that brought us ID cards. Simon's nailed it about the 'modernisation' issue. When governments want to enhance their powers they talk about modernising. The Regulation of Investigatory Powers Act was all about bringing the same old policing powers of interception and covert surveillance into the 'modern' age and applying it to 'modern' communications systems like the internet. For anyone who understands technology, if they've stopped bashing their heads against their keyboards, they'll want to start up again because they know it is both much simpler and more complicated than that. So now the 'modernisation' of government powers requires their ability to sift through all communications data, even when embedded within packets, even when they are not logged by service providers, and even when packets cross borders. But we are not anti-regulation, just like we are not anti-technology. With all this talk of modernisation and 'preserving' the powers of government, where are the new privacy safeguards that must be introduced for consumer to be protected in the 'modern' age? Governments sit on their hands when it comes to this type of regulation, but flail them about when they must preserve their own powers.

**JF:** Where do you think industry is doing a good job?

**SD:** There's no question that the work of such people as Kim Cameron and Stefan Brands is world beating. Microsoft has pioneered and nurtured the identity space in an exceptional way, and now only needs to understand how to deploy that technology. However, the true value of these developments has not been fully exploited.

*The privacy dynamic is changing faster than you might realise...*

**JF:** Any particular final thoughts/recommendations for people reading this newsletter?

**SD:** I'd say, be aware that the privacy dynamic is changing faster than you might realise. The political dynamic is certainly changing, with regulators and advocates becoming more aware and more activist. The issue of fairness will become paramount in the next few years, and failure to get the privacy formula right will result in a negative hit on developers. Look what has happened with Google, with NebuAd. Unless a company genuinely cares about the rights of its users then the reputational worth will be permanently devastated.

---

*I hope this interview gives cause for thought. I don't think I'll be the only one reflecting on the points that Simon and Gus have raised.*

*Part of the role of the CTPR is to act as a lightning conductor and to bring together many differing opinions about the way technology is being used and should be used, in the hope that we can work towards a consensus that provides the best possible outcome for the future of Britain. Taking on board criticisms with a view to improving the way technology is both designed and used is a critical issue for all of us who believe in the positive ways that IT will be able to transform our future society. Expert external opinion is a key part of this process.*

*There are a wide variety of individuals and organisations we are planning to approach to fill this Soapbox spot in future editions, all of them leaders and experts in their field. If resources permit, there will also be online audio and or video.*

*However, if you have somebody you wish to nominate for inclusion here, let us know and we'll see what we can do.*

**If you would like to advertise in a future edition of this Newsletter, or have ideas and suggestions for improvements, please contact us on [info@ctpr.org](mailto:info@ctpr.org).**

The Centre for Technology Policy Research (CTPR Ltd) is a limited liability company number 6992015 registered in England & Wales. The registered office is 788-790 Finchley Road, London NW11 7TJ, United Kingdom. Whilst CTPR Ltd takes every care in the preparation of these newsletters, it makes no warranties, express or implied.

© 2009, CTPR Ltd.