

# Towards global governance – interactive technologies and global accountability measures

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In an environment of globalisation and rapidly expanding deployment of interactive digital communication, this paper takes a complex systems approach to the mapping of large scale global indicators onto electronic flows of information and intent. It argues that democracy is being transformed by online technologies, and that governments which embrace and encourage citizen inputs and monitoring of public information can establish vital groundwork for more effective forms of global governance. Growing awareness of issues that transcend jurisdictions makes such transformations both necessary and increasingly acceptable. The prism for this bird's eye view is the Australian Government's evolution in its uses of information communication technologies (ICTs) for citizen engagement.

## **Introduction**

The interplay between electronic communications and empowerment has a long history (Feenberg, 1991; Zuboff, 1988). Every communication innovation from the telegraph to sophisticated social networking has had its champions and detractors. More access to communication must be good, say some. The 'rule of the mob' and the lowest common denominator is the retort. The moving tracks that become our communication pipelines inevitably mirror wider social, economic and ultimately, environmental changes. The possibility of ubiquitous connectivity, at least in the developed world, coincides with increasingly urgent demand for transnational action on many fronts. The weak outcomes of climate change conference in Copenhagen in December 2009 revealed the gap between governments' willingness and popular desires for solutions.

This paper takes a complex systems approach to the mapping of large scale global indicators onto electronic flows of information and intent. It argues that democracy itself is being transformed by online technologies. Governments that embrace and encourage citizen inputs and monitoring of public information can establish vital groundwork for more effective forms of global governance. Growing awareness of issues that transcend jurisdictions makes such transformations both necessary and increasingly acceptable.

The prism for this bird's eye view is the Australian Government's evolution in its uses of information technology and citizen communications over the past 20 years during which time the author has been involved as a public servant and researcher. The history of this evolution is one of gradual opening of both standards and inputs. Part of this evolution is a gradual convergence between government and commercial approaches to information accessibility and transparency. The Australian perspective is complemented by comparison with global examples and trends, and likely future developments. Across many areas requirements for open standards and transparency are becoming more accepted and insistent. Examples illustrate how these open processes can contribute towards effective governance goals. The

scalability of electronic communications is a vital tool, but requires careful shaping if it is to enhance democratic values and outcomes.

Several conclusions arise from this brief survey of the direction and pace of change in the public deployment of interactive technologies. One is that geography no longer limits the demands of global citizens for information and accountability. The second is that the effectiveness of policy at all levels will increasingly be measured against the quality, accuracy and accessibility of the electronic information used to track it. This suggests that the governance of the relevant information systems is now as critical as the agreements they are based on. These trends are fed by feedback loops based on uniform, open standards and robust citizen participation, often via social media. Internationally a key test of global information management will be the tracking of climate-altering emissions following an eventual post-Kyoto agreement.

### **E-Government: forward, and fast**

Our starting point is the author's observations about the potential for electronic democracy in the Australian public service in the early days of government internet use (Geiselhart, 1996). It was clear then that a hierarchical culture seeking to control communications would inhibit any moves to free up officers to interact directly with citizens. At that time, several electronic networks for intra-department communications faded under the scrutiny of managed messages. The direction of public sector reform then was for efficiency and business-like structures. This locked in the first wave of e-government to projects that looked at citizens as customers. In Australia and elsewhere, the focus was on service delivery, with minimal attention for participation by electronic citizens (Geiselhart 1999). Overt projects to strengthen the democratic process via interactive and accountable data were often either absent or took place in separate, disconnected processes.

Since then much has transpired, and the proliferation of government websites has itself become cause for concern (Australian Public Service Commission, 2007). Service-oriented delivery systems still dominate government uses of electronic media, many of these have become quite effective. These are now complemented by online consultation processes, and a gradual exploration of social media for discussion, policy development, and evaluation. The Australian Government 2.0 Taskforce discussion paper asked how the goals of citizen participation, improved access to government information, and a culture of innovation and online collaboration might be achieved (Australian Government 2.0 Taskforce, 2009). These values and goals have been put forward previously, notably in the report *Management of Government Information as a Strategic National Resource* (1997). That forward looking report outlined in some depth areas where information could be better managed to optimise both efficiency and transparency. It also emphasised the value of citizen participation and access to information, along with appropriate standardisation of data sets.

As part of a gradual culture shift, increasingly open, collaboratively developed standards have been adopted in many government areas, always with implied, if not explicit, underlying electronic implications and correlates. This highlights the critical but often unstated importance of information technology as a key enabling element, along with the desirability of uniform standards for any systems that transcend jurisdictional borders. As a federated country with a small but widely spaced population, greater coordination and aggregation of information is important for Australian governments' cost-effectiveness and also competitiveness in international trade. This trend towards uniform standards is most obvious

in health (health.gov.au). It is also apparent in government consultation processes (Meskill, 2009), environmental reporting (Toohey, 2009), and the legal area (Nolan, 2000).

Another long term concern about information technology in government has been the possibility that centralised control of could fall into the hands of one large consolidated corporation through outsourcing (Margetts, 1996). More recently, this possibility has morphed into security concerns about the potential for hacking by Chinese corporations providing telecommunications services to other countries (Stewart, 2008). Formal government security procedures alone may no longer be adequate, one of many areas prompting the exploration of collaborative participation (and vigilance) by cybercitizens.

## **A public sector phase shift**

While progress on open and uniform standards continues, it is also apparent that greater accountability and transparency will never be an unchallenged or simple technical transfer of information into the public domain. More effective access to government services and information, as well as greater involvement at all stages in the policies that determine these services, presents new combinations of cultural, political and technological challenges.

As the issues governments deal with have become ever more complex, relationships have started to shift in subtle ways. To begin with, a variety of public-private partnerships have become much more common, further complicating boundary decisions for access to government information. Commercial-in-confidence labels can affect Freedom of Information requests and limit public discovery (Herman, 2004).

Another important element of public-private partnerships is the skills exchange that flows both ways. The public sector learns about current commercial best practice and how quickly things can be enacted; the private sector learns about public sector values and accountabilities and the need to consider and balance multiple policy directions. When it works well the result is two-way learning and mutually beneficial culture shift.

The skills and culture sharing that accompany public-private partnerships also bring internal-external stakeholder management issues, as both risks and benefits become shared in a new space. For such projects to succeed, sharing information, inclusive problem-solving and honest risk assessment are critical. Clearly, these issues exist even at a council level, but are amplified as the partnerships encompass larger projects and jurisdictions.

Projects and problems in the public domain show a persistent tendency to spread across jurisdictions. This is particularly the case with environmental problems, but also business and regulatory matters. The economies of scale that lead to success on a global level do not favour parochialism within national, state or even organisational borders. Agility becomes highly valued.

All these changes create feedback loops that enhance the critical role of information technology as a tool for transparency and uniformity. For complex projects subject to sudden change the only way to manage planning and expectations in a timely, adaptive and effective way is to make use of all the electronic channels the wider public and private sectors are already using. Even without commercial partners, many government projects now involve multiple agencies. Jurisdictional, technical or perhaps personal differences can complicate cross-agency or even infra-agency projects. Stakeholder management and communications issues exist at all scales, encouraging the dual role of technology as both enabler and leveller.

These shifting patterns of responsibilities and accountabilities have become widely recognised within the public sector. The Australian Government has long been characterised by a widely accepted but somewhat artificial distinction between central policy agencies and program agencies. The former include Prime Minister and Cabinet, Finance and Treasury. They take on an integrative view of, and responsibility for, Australian well-being. They pride themselves on their analytical rigour, emphasis on strategic rather than short-term directions, and a leadership role that is willing and able to challenge entrenched views or interests. The tasks of program agencies are more specific, and their accountabilities combine longer term goals such as a healthy nation with more immediate outcomes such as a successful obesity awareness campaign.

In recent years, however, the press of change has pushed central policy agencies closer to the centre stage of program implementation. A report from the Australian Public Service Commission (2007) indicates it is now essential to work across organisational boundaries. The Federal Police now need to know about national parks and the Prime Minister's Department advises on security matters. These more holistic approaches often include the states and territories. The APSC report notes that "social complexity" is often the most difficult issue in solving "wicked problems" and it is social complexity "that overwhelms most current problem-solving and project management techniques" (Australian Public Service Commission, 2007). The report acknowledges that clear questions, let alone clear answers, are elusive, and that "progress is nearly always marked by consultation, discussion, negotiation and iteration".

Over time these trends become refined and institutionalised, as they become embodied in standards and reporting requirements. The appearance within the past 10 years of departmental energy conservation practices and reporting is just one example of how ideas and beliefs, sometimes called 'memes', spread across a highly interdependent system. The ability for these practices to be presented electronically reinforces requirements for standardisation and transparency.

## **Democratic values as system shapers**

This is exactly the terrain where a complex adaptive systems (CAS) approach becomes a useful conceptual tool. Applications of a CAS approach to management and the public sector conclude that in human systems values drive the attractors (Kiel, 1994). Complex public issues are also where requirements for aggregate measures of performance are becoming more urgent. The application of the balanced scorecard to the public sector (Holmes et al., 2006) and the movement towards triple bottom line accounting procedures indicate a gradual convergence between public and private sector standards and greater linking of previously separate data and accountabilities across both issues and jurisdictions. Changes in attitudes and values influence the way the data is stored and made available. Thus, public awareness of environmental issues has made the documentation of related issues a higher priority for governments.

A complex adaptive system is one in which the mutual influence of parameters is generally non-linear, or not in direct proportion to inputs. The relationships can change over time, creating a wide range of either stable, unique or repeating patterns or 'attractors'. Complex systems often display fractal, or self-similar patterns at multiple scales.

In human systems, bifurcations, or sudden phase changes, are the stuff of evolution and revolution. Open systems at the edge of chaos are the most interesting, dangerous and unpredictable. Many large cities meet this description. The understanding of complex systems in relation to management and the social sciences is now well advanced (Kiel & Elliott, 1995). In Australia, there are indications that a CAS approach is gradually being incorporated in planning and policy approaches, perhaps encouraged by the intricate interdependencies of so many current problems, and by public servants, academics and consultants with a background in this science.

While there is potential for chaos, it is comforting to know that CAS also show resilience. In human systems this is role played by norms – they pull a system back to the pattern that resists distortion. A typical public administration office will have visitors, fire drills, morning teas and management changes that both break and reinforce the tedium. It is unlikely (in Australia at least) that armed bandits, a plague of mice, or outright corruption will interrupt the routine. Other countries are less fortunate, and electricity outages, as well as bribes or worse reveal human systems where vastly different values and therefore norms are tolerated or accepted. The author's experience, most recently in late 2009, has been that the public sector is remarkably resilient, with values that have not altered much in 20 years. This is, of course, a dual-edged sword in times of rapid change.

All these patterns can be modelled, given a sufficient set of indicators and rules for their interaction and mapping onto the world of behavioural possibilities. Modelling is always based on rules, which are in turn based on assumptions about possible behaviours. Modelling rules for social patterns therefore contain embedded norms. Democracy can be viewed as a set of protocols for human governance processes. Writing just prior to the explosion of the internet, Dahl (1989) suggested that globalisation would lead to a third stage of democracy that would transcend the nation-state, aided by extensive and innovative use of telecommunications. Since then global agreements have certainly expanded, accompanied by ever more elaborate mechanisms for governance and information sharing.

Dahl's discussion was not informed by a CAS perspective. However, he explicitly acknowledged that the scales at which forms of governance occur, from the workplace to the global, are interconnected and influence each other. In today's world pollution, people, ideas, technologies or financial calamity can spread almost as quickly as electronic messages. Likewise, connected citizens increasingly seek both electronic information and influence that transcend jurisdictional borders. What computes can also scale.

## **New media and government communications**

In less than 20 years the Internet has evolved from a promising novelty into an essential tool for governments, business and individuals. Every dimension of modern life is represented and contested in cyberspace. Online is no place to look for arbitrary distinctions between sectors. It is becoming accepted in government that citizens use and expect social media to give them access to the decision making process. Governments have, with varying degrees of alacrity or recalcitrance, started to embrace these media and work out the legalities and protocols for their use. The need for feedback and consultation is partly a response to the accelerating demands of public policy decision making, and partly to the formal requirements of public-private partnerships. Citizen demands for better access to information and government data sets takes interactive e-government to a new level.

During periods of intense and accelerating change, reinforcing values and behaviours that support resilience and democratic process becomes another key task for governments. This further increases the need for aggregate data that document the direct of change. The report of the UK Power of Information Task Force recommended making government data available to third parties to create innovative applications. Subsequently, experimentation has found that providing online opportunities for citizens to access information and exchange views can be the most effective way of facilitating adapting and reinforcing change in desirable directions (Mayo & Steinberg, 2007).

This approach has influenced governments internationally, including Australia. At the end of September 2009 the Government 2.0 Taskforce released announced the launch of [www.data.australia.gov.au](http://www.data.australia.gov.au) with a mash-up competition, inviting Australians to use the 59 available datasets from Australian federal, state and territory governments to create a useful online application.

The availability of accurate information, in comprehensible formats, with adequate analysis, can be a limiting factor for effective public participation in public policy decisions. Deliberate efforts by government to involve citizens can be ineffective without a suite of factors in place. These include planning and goal setting, evaluation, moderation issues, and credible procedures for incorporating the suggestions into the policy process (Macnamara, Bamford & Betts, 2009). All these variables require a meta-view that fosters transparency, reliability, and benchmarking to quality assure the process.

Governments have also started form interactive communities or practice and collaborative workspaces. One widely known Australian example is GovDex, which is open to government and non-government participants, reflecting the more flexible and mutable partnerships described above. GovDex, or the Government Data Exchange, seeks to ‘facilitate business process collaboration across portfolios, administrative jurisdictions and agencies... effective and efficient information sharing, governance structures, tools, methods and re-usable technical components.’ It includes a collaborative workspace, a registry/repository, and tools and methods. Like many such innovations, however, it is not as user-friendly as one might hope, and the updating of specific areas is dependent on the priority placed on them by the various sub-groups within projects. It is noteworthy that although experimentation with citizen communications via social media is gradually becoming more common, this author has seen little evidence of robust online policy oriented discussion within the public sector itself. A culture of hierarchical control and career concerns still exercises a conservative influence, often limiting potentially valuable interactions between public servants and the public they serve.

Civil society groups often emerge to focus feedback via particular channels. Email alerts encouraging members to make submissions on a particular issue are now common practice. Volunteers run the website Open Australia (<http://www.openaustralia.org/>) with aggregated information and services about the Australian Parliament. These efforts often extend beyond jurisdictional borders, and are just one dimension of citizens without borders. Remittances from expatriates working abroad are a financial dimension, equally dependent on secure, stable standards for electronic documentation and transmission.

The current matrix of public information combines urgency, trust, collaboration and both public and private sector accountability. The public has an almost insatiable appetite for information of all kinds, both public and private. Once data is in the public domain, it can be modified for particular purposes. This repackaging can add value in unpredictable ways.

Citizens become more active and creative producers of information, and consumers of recombined data (Mayo & Steinberg, 2007).

In the boldest initiatives, governments turn themselves ‘inside out’ and make their datasets publicly available. The United States the data.gov site has been explicitly established with the goals of improving democracy, making government more transparent and effective, and involving the public in the future development and creative use of the data sets. In San Francisco dataSF.org has the ambitious aim of ‘tapping into the creative expertise of our greatest resource – our residents.’ Useful applications are already appearing, including directions based on real-time city transport feeds and Eco-Finder for locating the nearest recycling site (Johnson, 2009).

Open data sets become even more important as the scale shifts from the national to the global. Wider access further encourages convergent standards that facilitate better reporting, comparison, and transparency.

## **Convergent standards and reporting**

On many fronts the Australian Government is achieving better outcomes and cost-effectiveness through uniform standards. One example is in the aggregation of diverse indicators to achieve a more holistic perspective on national well-being. A triple bottom line approach to accounting, based on social and environmental, as well as economic indicators, has been reflected since 2005 in the Measures of Australia’s Progress Summary Indicators report (Australian Bureau of Statistics, 2009).

Internationally, the Equator Principles (n.d.) provide a platform for the financial sector to balance its project funding using this holistic triple bottom line perspective. The Organisation for Economic Cooperation and Development (n.d.) is also seeking to define and measure social progress internationally, and is developing a draft taxonomy to assist this process.

Australian, state and territory governments have agreed to a nationally consistent approach to greenhouse and energy reporting, outlined in the *National Greenhouse and Energy Reporting Streamlining Protocol* (Department of Climate Change, 2009). This will establish a standard national approach for gathering greenhouse gas and energy information, and will be complemented by an online reporting system. It is informed by international greenhouse reporting protocols.

These examples of aggregating information in standardised ways are underpinned by a broader recognition of the need for a way of not just organising information, but governing it. Higher level standards and processes are needed to assure the quality, reliability and stability of the data. The Australian National Standards Framework acknowledges the need for greater agility by agencies, aided by greater collaboration across both portfolios and jurisdictions. In essence, this is the same fractal pattern needed at a global scale. The benefits intended by the framework are also self-similar within Australia or internationally. These are ‘reduction in risk, increase in reuse, a higher level of interoperability (and hence efficiency).’

Standardised information is particularly important for complex, globalised systems. The International Accounting Standards Board (2009) in its Report of the Financial Crisis Advisory Group noted that ‘it is critically important to achieve a single set of high quality, globally converged financial reporting standards that provide consistent, unbiased,

transparent and relevant information, regardless of the geographical location of the reporting entity.’

## **Conclusions – data-based democracy**

The above discussion has described the gradual development of government information systems from closed, service delivery mechanisms to more open platforms for giving citizens access to policy information and ultimately data sets. As the world of possible options and risks expands, the realm of governance also becomes more diffuse, leading governments and citizens to explore new ways to achieve accountability and extend the rule of law into wider jurisdictions. This cannot occur on the global scales commensurate with current global challenges without both data and robust rules for its governance.

There is much emphasis today on evidence-based policy in the developed world. There is a belief that evidence and facts are the best way to bypass many of the dysfunctions and disadvantages of ideologically or politically driven forms of policy determination. Unfortunately agreement on what constitutes evidence can itself be elusive and is often contested. Open systems using social media to enhance the participation and influence of informed and engaged citizens can help democratise decisions about evidence. At least that is the hopeful conclusion of some studies, including a report by Information Victoria (2009).

The most prominent and perhaps urgent example of this extended sphere of possibilities for information sharing is climate change. Every aspect of this issue is complex, contested, and subject to intense communications at every level of detail. The stakes are very high, the governance issues daunting, the values widely contested.

Not surprisingly, accounting for greenhouse gases is an area of dispute, as articles in *Science News Daily* (“Climate scientists uncover major accounting flaw”, 2009) and the Greenhouse Gas Protocol (2010) reveal. All stakeholder groups seek agreement on what to count and how, as well as on how to reduce emissions. Both are necessary in order to establish, manage and make available the necessary electronic tracking systems. Without widely accepted protocols for greenhouse gas accounting, international agreements are worth no more than the hot air they seek to limit.

In the decades to come there is certain to be intense debate about the mechanisms for measuring and monitoring emissions from sources at all scales. Citizens will be watching their screens, sharing and commenting on floods of information both within and beyond their own borders. It is a point in time where a phase shift seems likely, with unpredictable outcomes. A likely outcome is that climate change will encourage the development of global systems for the openness and standardisation of data that will accompany the evolution of global governance systems.

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