

The power of e-government: technical, discursive, human

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Introduction¹

There can be no doubting of the ubiquity of digital, electronic information and communication technologies (ICTs) in the daily conduct of affairs in most contemporary societies, especially the rich countries of the OECD. Electronic devices such as telephones, televisions, game machines, smart chip cards, computers and their interconnection to form the internet are now not only part of everyday life, but an essential component that enables our commercial, educational, recreational, social and political activities. Wireless mobility, coupled with GPS capabilities, has further enmeshed those devices into our activities while simultaneously extended what, where and when we enact.

As with all other spheres, governments have long made use of digital ICTs, sometimes as leaders and innovators and sometimes as laggard followers (Cortada 2008, Agar 2003). These technologies are now very much infused into all government operations from policy development, public administration and political processes. Despite this long history, academic interest in the use of electronic ICTs by the state was minimal and marginal until the popularisation of the internet in the late 1990s.² The term ‘**e-government**’ (also ‘electronic government’ and ‘digital government’) first occurs in 1999, and is often used to refer to online government activity through websites on the World Wide Web (Henman 2010: 34). However, given the complex entanglement of web technologies and processes with other electronic ICTs, such as desktop computers, LANs and mainframes, databases and digital telephony as part of a wider and longer co-evolution of ICTs and government, e-government is arguably better defined as *the use of electronic ICTs in the conduct and*

practice of government. This is the approach taken in this paper. Such a conceptualisation of e-government recognises that ‘e-government’ encompasses a very diverse and dynamic phenomenon, utilising myriad devices, both new and old, for a wide range of purposes. While innovative technological devices and processes capture the imagination and generate much publicity, it is a mistake to understand online government as a new dramatic *entrée* and revolution. It is instead a longer-term, dynamic evolution with continuities and discontinuities (Henman 2013).

The *problématique* of power has been a long-standing locus of examination in the study of government use of computers, other electronic ICTs and much earlier information technologies (Higgs 2004, Dudley 1991). Fundamental to much of this literature has been a consideration – sometimes optimistic, sometimes pessimistic – of what the newly emerging ICTs mean for the power of the state and correspondingly the power of ‘the people’. It is this *problématique* of the power of e-government that this essay explores.

The purpose of this article is to draw together different theoretical and empirical literatures to provide insights into the operation of power through, by and surrounding e-government. A key perspective of this essay is that the power of e-government is neither wholly an increase in state power nor an increase in freedom, but simultaneously both. Its operation is also complex with relays and interplays between the material, discursive and human dimensions of e-government. The paper discusses power vis-à-vis these three dimensions of e-government in turn. Before doing so, the paper begins with a brief consideration of the nature of power.

Thinking about power

The notion of power has been a long-standing and central element of socio-political thought from seventeenth century writers such as Hobbes and Locke to twentieth century ones such as Lukes and Foucault (Hindess 1996). Yet within these and other writings, there is a wide diversity and conception of power. As Hindess notes, there is a widespread understanding that power is “a simple quantitative phenomenon. Power, in this sense, is nothing more than a kind of generalized capacity to act” (1996: 1). This conception implies a view that those actors with more power rule over those with less, and the level of power remains constant; an increase of one actor’s power implies the decline of another’s. Hindess argues that there is a second conception of power within socio-political thought, one in which power is both a capacity as well as a right exercised by consent of others (1996: 1-13). To put it bluntly, the first conception denotes ‘power over’, while the second recognises ‘power through’; the first a negative conception of power where power is repressive and a zero-sum game, the second incorporates a positive, enabling or productive conception of power.

The works of Michel Foucault (1926-84) have greatly transformed academic ideas about power. His post-structuralist account of power sought to move further beyond an account of power that focussed on sovereignty, famously stating “We need to cut off the King’s head” in political theory (1980: 121). Instead, Foucault likens power to capillaries. His oeuvre involves an extended consideration of power as knowledge and discourse, as well as the power of discipline and self-government, and the observation that all operations of power involve resistance. His later work on governing – “to govern ... is to structure the possible field of action of others” (1982: 221) – also gives an insight into his understanding of power. It is this more complex, multifarious and omnipresent account of power that must be employed to appreciate the various dimensions of the power of e-government.

An important aspect of Foucault’s understanding of power is the need to recognise the various dimensions of the world and their “power effects”, in that they contribute to and make up the operation of power. This essay’s examination of the power of e-government looks at three such dimensions with reference to previous research on e-government. First is the *technical* dimension, which encompasses the material nature of digital devices, their physicality and their operation. The second dimension is *discursive*; reflecting the role of language and ideas in shaping the operations of the state and others. Third is the *human* dimension, which involves a consideration of how people take up (or not) technical and discursive possibili-

ties of e-government and deploy e-government in certain ways to achieve desired effects.

The flow of the paper has a certain logical reasoning. It begins with the material substance of electronic ICTs and how this constitutes the conditions of possibility for the fashioning and refashioning of government and its objectives. The discursive domain can be observed as constructing visions of what an electronic government can and should be about based on ICTs’ actual or imaged technical capabilities. The human domain can be viewed as one in which particular discursive visions and technical capacities are taken up or thwarted by human interests. To be sure, these three domains, while conceptually distinct, are in reality highly inter-related and interactive. The above reasoning is thus necessarily simplified to assist understanding the various dimensions of the power of e-government, and keep in check tendencies to assume what is technically feasible, or what is dreamt, will be achieved.

In the study of e-government and state power (and of computers and state power more broadly) it is possible to delineate two different axes of investigation. On one axis is the directional focus of power effects: the power of the state in shaping the power of electronic ICTs; and the power of electronic ICTs in shaping the power of the state. Crudely, this can be characterised as a respective distinction between socio-political determinism (MacKenzie and Wajcman 1999) and technological determinism (Winner 1977, Roe Smith and Marx 1994). The second axis involves the normative assessment of the power of e-government: good or bad. At the extremes this axis embraces dystopian and utopian visions of e-government and state power. Of some relevance to this characterisation of e-government and power, Heeks and Bailur (2007) reviewed e-government research and discovered that while most e-government research recognizes both technology and social shaping factors, there is a sizeable minority with a crude technological deterministic perspective. They also found that a sizeable majority of e-government research takes a “naive optimism” in approaching the impact of e-government, with no surveyed research taking a solely pessimistic approach to the impact of e-government. This latter finding is perhaps surprising given the number of popular technological dystopian writings, both fictional and non-fictional.

It is clearly possible to operate between both axes. Importantly, given the above-articulated understanding of power, the perspective of this paper is that e-government necessarily has concurrently both positive/productive and negative/coercive power effects, not just because there are different perspectives of what is ‘good’ or ‘bad’, but also because the very operation of new technologies makes

new things possible while at the same time also blocking off other options.

Technical power and e-government

The technical power of e-government relates to its material substance and operational capacities. The materiality of things is an increasingly important domain of study,³ because it is their materiality that means that devices do something independent of human's ability. For example, without telescopes we cannot see much of the heavens (Ihde 1990) and without the microscope we cannot see microbes (Latour 1988b). At the same time, human-made artefacts typically do not act alone. They are designed and utilised by humans. In designing and building material objects, specific humans embed particular ways of operating, social formations and even politics into them, and those objects in turn are likely to make such social forms relatively durable (Winner 1986: 19-39, Latour 1991). This durability is achieved through their material operation and use. There is thus an interplay between the technical, discursive and social modes of power.

Given such a perspective, in what way might the materiality of electronic ICTs constitute particular ways of acting, thereby constituting specific power effects? The answer to this question involves a consideration of both electronic ICTs in their general substance as well as in each particular manifestation. At a general level, digital electronic computers can be argued to reflect a world view that is: based on discrete, separable units; logical; abstract; quantifiable; functionalistic; deterministic; sequential; and finite (Henman 1995, Roszak 1986, Weizenbaum 1984, Whitelaw et al. 1992). This is abstractly epitomised in the universal Turing machine (Turing 1936). The exponential expansion of computational speed and power has meant that some of the concerns of earlier commentators may have been curtailed. However, Lanier (2011) has only recently similarly argued that such rigid codings in music and social media get locked-in and continue to exert an inflexible structuring of human experience. Some important ways of operating of digital technologies have been observed in shaping the way in which we think and act.

Firstly, fundamental to digital ICTs is their capacity to be programmed to operate in particular ways. This has been an enormous boon for governments which have been able to automate an ever-widening raft of activities, from accounting and recording keeping, to service delivery and policy decision making via expert systems and decision support systems (Ranerup 2008). Due to the nature of digital ICTs, it is not at all a coincidence that automation of well-defined tasks, such as accounting, were automated before less precise services. At the heart

of much automation is the desire to reduce cost and human error and generate uniform administrative decision-making. It can be argued that concomitant with this is a managerial desire for control over processes and subordinate staff, a topic of ongoing concerns about surveillance and deskilling (Braverman 1974, Garson 1989), involving a reduction in professional discretion and a fundamental change in the nature of professions (Parton 2008, Bovens and Zouridis 2002, Gillingham and Humphreys 2010). However, despite the fears about mass loss of jobs which have not systemically eventuated, the increased efficiency through automation has extended the range of things governments can do and increased demand for interactivity (Henman 1996), as previous research on earlier technologies demonstrates (Cowan 1983).

Secondly, electronic ICTs are fundamentally material *and* informational. The way in which ICTs operate on symbols (ultimately of 1s and 0s) provides the basis for contributions to information. Automation is intrinsically tied to information production. Thus, ICTs have informational power effects. This is evident in the storage, circulation and analysis of formerly incomprehensible amounts of data, which have had effects on our scientific and social understanding of the world (Henman 2010). Moreover, information generated from ICTs enables the conduct of those organisations and their users to be made known in ever-increasing detail and thus to be acted upon.

Thirdly, the discrete, separable units are also readily reflected in the discrete categories utilised in contemporary computer databases (Kent 1978). While humans design databases, the designers are constrained by the rigours of well-defined data items. The power of data items in an organisational database is that they constitute what information is important to record within an organisation, the analysis of which shapes organisational knowledge (what can be known) and the basis of decision making of administrators and managers alike. Indeed, scholars have cautioned against letting IT professionals design databases without discussions with organisational staff, and more often than not the agendas of managers (rather than administrators) are embedded in the database design, thereby reinforcing managerial power sometimes at the expense of operational capacity (Dearman 2005, Scheepers 1994, Bovens and Zouridis 2002). Databases thus illustrate the interaction between the discursive, human and technical modes of the power of e-government.

Specific electronic technologies are also asserted to shape cognition and reasoning. The word processor (Heim 1987), MS Powerpoint (Tufte 2003) and hyperlinks have been argued to shift reasoning from deep linear thought to superficial, relational and fast ideas (Gane 2006, Virilio 2006).

The material capacity of computers to enable complex and rapid calculations has been specifically utilised in the development of computer modelling for policy making and governance, such as economic and climate forecasting and assisting the development of complex policies in social, economic and environmental areas (Henman 2002, Levy 1989). Through the ability of computer modelling to manage large numbers of variables and complex interactions, the reach of human thought has been greatly enabled and expanded. This has advanced the governance of the future even if with knowledge flaws (Pilkey and Pikley-Jarvis 2007). Similarly, Geographical Information Systems have enabled and induced governments to think geographically about policy issues (6 2004: 86-99).

The materiality of computer networks, the internet and wireless, has allowed the accessibility of government agencies to be recast, from mortar and brick buildings, to telephone access, and to 24/7 access through the internet. Coupled with automation, government services can be now be accessed, applied for and automatically obtained (e.g automated tax returns and benefit claims). This has meant that organisational boundaries and the role of administrators and the public have become blurred, and government can be accessed in almost any location. Electronic networks have also been said to transform organisations from hierarchical to flatter and networked forms, to inter-agency partnerships, and to more distributed or democratic power (Castells 1996, Castells and Cardoso 2006, Barney 2004). In all the above examples, power relays between technical, discursive and human dimensions are evident.

Discursive power and e-government

The ways in which we define, talk about and envision the makeup, operation and use of e-government is a form of power. Discourses articulate specific technical mechanisms, practices and subjectivities of citizen-subjects, and operations of governmental agencies (Dean 2010, Miller and Rose 2008). Discourses have power effects in that they structure ways of thinking and acting upon the world. The articulation of e-government in a particular way constitutes its existence as a specific reality, if not yet in material substance. No doubt, there are different and competing ways to talk about e-government – as the divergent visions of technological utopia and dystopia suggest – and so the power of e-government discourses operate within a highly competitive realm. In this respect, discourses of e-government by the state have a greater programmable or power effect as the state must resource the translation of discursive reality into material reality.

At the same time, the materiality of technologies shapes what is feasible and thus tends to shape the visions of

new governing arrangements and practices, and operations of state power. As digital ICTs have the capacity to be programmable for an infinite range of activities – what is described as a high level of “interpretive flexibility” (Pinch and Bijker 1987) – it is unsurprising that the visions of e-government have been wide, from supporting front-line government officials to controlling and surveilling them, from a nirvana of democracy to the terror of brutal authoritarianism.

Along with the evolution of digital ICTs, discourses of e-government have evolved over time. From the beginnings of electronic ICTs in the mid-twentieth century, one constant vision has been the automation of government functions to generate resource and time efficiencies. It is almost universally regarded as a truism that computerising an activity increases its efficiency. However, the record demonstrates that such efficiencies often do not eventuate at a systemic level (Henman 1996, Jenner 2011), as Robert Solow famously quipped in 1987 that ‘You can see the computer age everywhere but in the productivity statistics’.

A second oft-repeated vision for digital ICTs has been the enhancement of democracy. Sometimes these visions are of automating political processes such as e-petitions (Macintosh et al. 2002), e-voting (Chiang 2009) and reporting of parliamentary processes (such as live streaming). Other visions see enhanced democratic processes through wider and ‘easier’ public consultation through email and online tools, and enhanced government accountability and openness through greater access to government information and data. Other visions imagine a thoroughly transformed democracy, replacing representative democracy with direct democracy via e-voting on specific policies and laws, to deliberative democracy whereby citizens are directly engaged in the policy making process through online fora and crowdsourcing. Underpinning these democratic visions is the progressively increasing technical capacity of digital ICTs to rapidly communicate with government and to access government data. Related assumptions are that data equals information, information equals power, and thus greater access to government data will rebalance power towards the people. However, history would remind us that democratic visions have accompanied many ICTs, from the book, phonograph and television, to the PC and internet (Groombridge 1972, Eisenstein 1983, Burlingame 1940, Tsagarousianou et al. 1998). Indeed, some commentators thought the innovation to email the President of the USA was a major geopolitical event.

Promising visions of enhanced democracy associated with digital ICTs have been matched by equally strong visions of declining democracy, total state knowledge and

authoritarian dictatorships arising from new technologies (Rule 1973, Dandeker 1990, Davies 1992, Lyon 1994, Whitaker 1999). Digital ICTs are argued to greatly enhance the political power of the state to conduct surveillance of its populace. Such surveillance can be visual through technologies such as Closed-Circuit Television (Norris and Armstrong 1999) or surveillance can be based on our data trailings in large centralised databases or networks of information. Through digital networks, personalised data – whether it be administrative data, service usage or DNA profiles – can be readily circulated, stored, analysed, compared, profiled and trawled. Increasingly these capacities can be utilised to sort populations and target specific groups for close attention, whether they be possible terrorists, tax or welfare fraudsters, indolent unemployed or simply unloved minorities (Lyon 2003, Henman and Marston 2008). The decline of democracy through digital ICTs could also be less brutal through our use of such technologies to “amuse ourselves to death” (Postman 1985). However, the growth of surveillance capacities has been more complex than an autocratic state, as we have become willing subjects in our own surveillance (Andrejevic 2009).

Since the rise of the “e-government” rubric at the beginning of this century, the visions of e-government have been varied. Indeed, instead of defining e-government in terms of government use of electronic ICTs (or more specifically the internet), many definitions define e-government in terms of a vision: ‘Some definitions [of e-government]...read like mission and vision statements’ (Scholl 2003: 1). These visions often accord with visions of public administration reforms. For much of the first decade of the twenty-first century, these visions involved greater administrative efficiency and improved public services (Henman 2010: 33-44). Service improvement was seen to result from the capacity of digital ICTs to enable services to cross institutional boundaries to provide ‘joined-up’, whole-of-government, responsive and personalised services. For example, the then President of the International Social Security Association explained that:

E-government is a way of making the delivery of government services more efficient by ‘integrating’ or perhaps ‘clustering’ them, and making them available through a single point of access on the Internet: the so-called ‘single window’ that provides ‘one-stop shopping’ (Verstraeten 2002).

In the last few years, the development of social media and Web 2.0 (Han 2011) has been accompanied with new

e-government visions. In ‘Gov 2.0’ discourses, considerations of efficiencies have been replaced by e-government visions of “open government” through greater citizen participation and freely available public sector information to enable greater public accountability and socio-economic innovation (Henman 2012, Noveck 2009, Eggers 2005). For example, the Australian Government 2.0 Taskforce endorsed a perspective that:

Government 2.0 is not specifically about social networking or technology ... It represents a fundamental shift in the implementation of government – toward an open, collaborative, cooperative arrangement where there is (wherever possible) open consultation, open data, shared knowledge, mutual acknowledgment of expertise, mutual respect for shared values and an understanding of how to agree to disagree (Gruen 2009: 2).

Similarly, President Obama’s US Open Government Directive of “transparency, participation, and collaboration” (Orszag 2009) is deeply embedded in Web 2.0 technologies (McClure 2010). Such sentiments strongly accord with a described Web 2.0 culture (O’Reilly 2005).

The concept of “stages of e-government”, whereby government use of online technologies is conceived as evolving through progressive stages, also embodies a mix of description and normative vision. While there is no authoritative stages of e-government model, there are common themes. The first stage is the use of a website for publishing information like a billboard (i.e. one-way communication). Stage two involves website interaction between the government agency and user (i.e. two-way communication). Stage three is the capacity of government websites to undertake transactions, such as paying bills, or applying for licenses. Often a fourth stage is of transformation, in which using websites involves a transformation in how government business is undertaken. Many models append a final stage involving electronic, interactive “participation” or “democracy” (Siau and Long 2005). Again, these stages are not simply descriptive of technological innovation, but normative about what could or should happen in government’s deployment of evolving digital ICTs, and imply political progress paralleling technological development.

While discourses have power to constitute new ways of thinking and imagining government, not all e-government discourses are realised. There is a disjuncture between what is said and what is done. The reasons for unfulfilled e-government visions are many, including technical

issues (and technical power), organisational difficulties (e.g. lack of will or leadership, resourcing, a fundamental mismatch between ICTs and organisational processes, and mixed or confused objectives) or a failure of user take-up (Stephen et al. 2011, Jenner 2011, Dunleavy et al. 2006). Perhaps more importantly is that e-government visions may fundamentally challenge pre-existing human power interests and dynamics, or conflict with more important political objectives. Being aware of the euphoria associated with emerging digital ICTs enables us to “pinch ourselves”, to realise that a vision does not equate to reality, and to go the next step to understand why such visions may not come to fruition.

Human power and e-government

Human power – by which I refer to the activities of humans as individuals and collectivities – is a third critical ingredient in the power of e-government. Humans must design, build and utilise e-government technologies for those material forms to have power effects, but so too do humans have the power to avert their effects by not building or using them, or designing and using them in different ways. If we are to appreciate, understand and anticipate the directions and effects of e-government we thus need to be alert to the operations of human power. The technical power of e-government both potential and actually implemented and the discursive power of visions are not enough.

Consequently, e-government is often shaped by interests with significant partisan power, be it organisational, political or financial, which is greater than the power of other interests. The power of elected governments is clearly a critical element in the human power to define e-government. Indeed, at the heart of the failure of e-democracy advocates to progress their vision of a democratic utopia is the failure to recognise the power of elected politicians to avert a reduction in their policy-making power.⁴ The greater take-up of Gov 2.0 in politically safer areas of service delivery, compared to politically-sensitive areas of policy making, further illustrates this point. Indeed, the British Coalition government’s famed crowd-sourcing activities in 2010 led to little policy change (Wintour 2010, Groves 2010).

A long-standing theme is the operation of managerial power. E-government is often seen to be shaped more according to executive interests and functions, rather than front-line concerns (although if the former overreach, the resulting system may undermine organisational performance). The clear alignment of e-government developments and New Public Management over the last two decades demonstrates the power of managers and managerial discourses (Henman 2010: 115-132, Dunleavy et al. 2006).

However, as Dunleavy et al. (2006) observe, neo-liberal managerial visions have undermined the performance of e-government and have resulted in a new emerging form of public administration, which they denote “Digital Era Governance”.

Due to the technical nature of digital ICTs, e-government can also be shaped by the perspectives and interests of IT professionals. In the early decades of computerisation this was particularly seen as an internal organisational problem, which was responded to by making ICT strategy more directly overseen by senior executives and appointments of Chief Information Officers. More recently, the agendas of international ICT corporations and related consultancy firms have shaped e-government through their design and operation on behalf of government (Dunleavy et al. 2006), sometimes with disastrous effects for governments (Stephen et al. 2011, House of Commons. Public Administration Select Committee 2011, Dunleavy et al. 2006).

The power of businesses more broadly is also important in considering e-government power effects. Government policy making is considerably shaped by such interests. The political interests of business is often forgotten in the recent imaginations of Gov 2.0 with its obsession of citizen-state consultation and use of public sector information (Henman 2012). How corporate interests will make use of “open government” to achieve their agendas alongside citizens should not be overlooked.

Citizens too have power. As imagined users of e-government, they have the power to refuse to use e-government, to resist the power of e-government. Indeed, a key message about government online is that usage involves the building of trust, trust that their personal data is safe and secure (Susanto and Goodwin 2010, Margetts 2009, Das et al. 2009). One reason that e-democracy visions fail is because the public are largely not interested or do not have the time to engage in participation in government consultations.

As the earlier section on ‘Thinking about power’ suggested, the operation of human power is not always clear cut and defined quantitatively. Power can operate like capillaries and be diffuse. For example, while dystopian and Orwellian visions of ever-expanding government surveillance over citizens have long been associated with ICTs (Lyon 1994, Davies 1992, Dandeker 1990), the reality is that citizens are very much complicit in this practice because the provision of digital information is viewed as beneficial to the self, and not as a dangerous act. This observation reinforces the idea that technological innovation is coupled with complex power effects, often simultaneously beneficial and detrimental to any specific party.

Conclusion

In understanding the power of humans vis-à-vis technologies, there are two common myths. First, in the building and use of technologies, a common conception is that the tools are neutral ethically and politically; that the ethical and political dimension is how human actors make use of these devices. This simplistic perspective is mistaken. While humans shape technology, technology also shapes us. Their materiality is a critical reason for this shaping, to act in ways independent of our desires. Digital ICTs can be built to embody a political or organisational mode of operating, and its use is then intrinsically part of those politics (Winner 1986, Latour 1992, Latour 1988a). This is well illustrated by the managerial design of computer databases to instil certain modes of operation and forms of thought in administrators (Dearman 2005), or by the creation of computer models to produce certain forms of knowledge (Henman 2002).

Coupled with the neutrality myth, is the view that human designers define the effects of technologies. However, intention of designers is not the same as outcomes, and the notion of unintended consequences is not an adequate account. Rather, the material substance of a technology has built within it myriad forms of use, which end users shape in their own ways. For example, text messaging as a major communication tool was not intended by its developers. Furthermore, the material operation of technologies may lead to new insights, modes of thinking and forms of operation that no one had envisaged.

In understanding the contribution of new technologies to the operation of government, the nature of state power, and the conduct of citizens and corporations, we need to view socio-technological change as a reproduction of the present, nor a simple linear step. There are both continuities and discontinuities. New technologies introduce into the play of power new modes of operation and new rules (i.e. technical power). Just as citizens can make use of technologies to advance citizen interests, so too can states and corporations. Technological change can be seen to change the playing board, pieces and rules from checkers to chess. How the continually evolving power of e-government plays out is up to the players learning new strategies in their complicated interaction between technical and discursive modes of power.

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Notes

1. I acknowledge the helpful and encouraging feedback from Elizabeth Strakosch and Jesper Schlæger on earlier drafts of this paper.
2. Some important early exceptions include the body of work by the Center for Research on Information Technology and Organizations at the University of California (Danziger et al 1982; Kraemer & King 1986; Kraemer & Kling 1985) of Rob Kling (Iacono et al 2003), and long-standing work and journal of the European Association of Public Administration's study group on ICTs, called *Informatization and the Public Sector*.
3. See for example, the work of Martin Heidegger (1965; Verbeek 2005), Don Ihde (1993; 2008), Bruno Latour (1988; 1992; 2005) and Langdon Winner (1986).
4. Indeed, e-democracy visions often misdiagnose the underlying problem of the democratic deficit. Disenfranchisement with politics has little to do with technological solutions (such as e-voting, e-petitions or data access).