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8. Government, E-Government and Modernity 'The times they are a-changin'; and even the changes are a-changin

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Abstract

E-government is far too often taken to mean 'government business as usual' plus the internet. This paper puts forward the basis for an alternative orientation, locating e-government against a background of profound social changes.

Keywords: **e-government, liquid modernity, maturity models, Zygmunt Bauman**

1. Introduction

Ideas about e-government often amount to no more than 'Government-as-usual + ICT¹': The 21st century version of the Leninist slogan 'Communism = Soviet power + Electrification'. Slogans may serve a progressive purpose if they rally support and provoke action; but they can also obscure and impede. *E-government* is, for now, a fashionable catch-all label that can be pasted on to a variety of activities, initiatives, programmes, and platforms emanating from government, inter-government and intra-government sources. In many cases these are simply attempts to re-badge *business-as-usual* administrative activities; except that for many the close association or near-complete merging of government and business is not at all usual.

More incisive commentators and researchers on e-government understand that harnessing the power and potential of ICT is far more complex. In fact the very metaphor of *harnessing* – i.e. adding the horse-power of ICT to extant activities – is itself simplistic and misleading. To paraphrase the words of Stafford Beer (1971), the question which asks *how to use ICT in government?* – or anywhere else – is the wrong question; a better formulation is to ask *how government should be run given the existence of ICT?* The best version of all is the question; *given the existence of ICT, what is the nature of government?*²

A similar process of interrogation was induced when the commercial world discovered the internet in the 1990s. There was initial excitement and enthusiasm, based on the mistaken belief that E-Commerce was the equivalent of *Business-more-or-less-as-usual + ICT*; delivering more customers, bigger margins, faster turn-around. Some of the initial *successes* of the internet-as-market-place seemed to indicate precisely this, and there was a great deal of discussion of 'new business models', 'disintermediation', and 'the friction-less market'.

¹ Information & Communications Technology – a more inclusive and expansive term than simply *IT*

² The original quote from Beer (1971) – 'the question which asks how to use the computer in the enterprise, is, in short, the wrong question. A better formulation is to ask how the enterprise should be run given that computers exist. The best version of all is the question asking, *what, given computers, the enterprise now is.*' (stress in original)

Economic reality soon re-asserted itself with the various ‘market adjustments’ of the late 1990s; and current ideas about e-commerce – a term that now sounds almost quaint and bizarre – are far removed from such premature and excess exhilaration. Taking the boom and bust of the internet economy as a chastening lesson, we should all heed J. K. Galbraith’s admonition in a lecture at LSE in 1999, ‘[W]hen you hear it being said that we’ve entered a new era of permanent prosperity ... you should take cover’.

The experiences of the 1990s should not have come as a surprise; for those involved with ICT ‘we have been here before’ – several times. Indeed there is a whole literature devoted to the ways in which the processes of adapting to and accommodation of technological innovation have to be seen as learning processes or stages of maturation.

2. The Concept of *Maturity*

The most notable, and one of the earliest efforts at explaining these phenomena in the context of ICT can be found in the work of Gibson and Nolan dating from the early 1970s (see Gibson & Nolan 1974; Nolan 1979). They presented a model, prompted by nothing much more than a series of hunches on Nolan’s part, that organizations went through a small number of stages or phases in applying computer technology; and that the stage which an organization reached was dependent on, or at least indicated by the organization’s computing budget. Their research resulted in a classic ‘S-curve’ – or learning curve – of expenditure against time, and so evoked the concept that organizations went through a learning process in utilizing computer technology. Nolan later extended the original four stage model to six stages, the final stage being termed ‘technological maturity’. Ever since the appearance of Nolan’s later paper, in 1979, the ICT literature has been replete with commentaries and critiques of the model. Is the model historically specific to the uptake of (main-frame) computer technology in North America in the 1960s and 1970s; or does it have wider application? How useful is ‘expenditure’ as an indicator? And so on. Whatever its specific shortcomings, the concept continues to attract a wealth of attention. The model has recently been used as a focus of discussions about e-commerce, internet banking and knowledge management – and e-government.

Work by McFarlan et al (1982) in the early 1980s extended the central concepts of the model to encompass technology in general, focusing on the ways in which organizations ‘assimilated technology’. Whether they realized it or not, McFarlan et al were using Piaget’s (1975) concepts, taking them from the context of cognitive psychology and applying them to organizations. For Piaget individuals learn through *adaptation* which itself consists of two, complementary processes; *assimilation* and *accommodation*. When a child has novel or unexpected encounters or experiences, its cognitive equilibrium is disturbed, and it can only achieve a new equilibrium through a combination of *assimilation* – i.e. incorporation of novelty into existing cognitive structures or schema – and *accommodation* – i.e. modification to existing structures as a result of the experience. McFarlan et al imply that organizations could be seen to be responding in a similar fashion; moving from experimentation and piloting of innovative technology to eventual technology transfer and utilization. The organization will seek to find balance between *assimilating* the technology – adapting the technology itself by incorporating it into existing structures, routines and practices; and *accommodating* to the technology – changing practices and processes in the light of the technology. The new equilibrium will involve both the organization and the technology undergoing modification.

It is no coincidence that Nolan, and McFarlan et al used the concept of *maturity*. When technological developments are heralded as unmitigated panaceas there is usually an initial phase of excitement, optimism and anticipation as the technology is introduced and used as a basis for experiment and innovation. One result of this is that well-entrenched routines and procedures are brought into question; perhaps having previously been assumed to be natural and inevitable. Gibson and Nolan argued that the introduction of computer technology in the late 1960s and early 1970s 'shocked the organization': Again this echoes Piaget's approach whereby learning involves disturbance of one's equilibrium.

Within the context of e-government there have been several attempts to apply Nolan's model in recent years. A recent report from the Australian Government includes a contribution from Pearce (2004) in which he discusses two such attempts by Layne and Lee (2001), and Moon (2002). Layne and Lee's model seeks to explain 'government's use of technology, particularly web-based Internet applications, to enhance the access to and delivery of government information and services to citizens, business partners, employees, other agencies and government entities' (Layne & Lee 2001, p. 123 – quoted in Pearce). As such they offer a four stage model starting with *Cataloguing*, going on to a *Transaction* stage, followed by *Vertical Integration*, and eventually *Horizontal Integration*. The cataloguing stage is not much more than establishing a presence on the internet with some inactive web-pages, but not allowing any interaction from users. This only occurs in the next stage where such things as applications can be submitted and various payments made. The latter two stages focus on the internal workings and structures of government, drawing on parallel ideas from the commercial world, where different aspects of the existing organization have to be brought together (vertical integration), and then where the internal – departmental and potentially diverting and divisive – structure has to be overcome to allow faster and more effective processing (Pearce likens this to BPR).

4. Maturity Models of E-Government

Pearce is quick to point out the shortcomings of this somewhat mechanistic interpretation and application of a stages-of-growth model. Layne and Lee fail to account even for the complexities of the organizationally-oriented model itself, let alone seek to incorporate such critically distinctive aspects of governmental organizations as citizenship, and the general political processes and pressures. Layne and Lee's model exemplifies the equation given at the start of this paper: $e\text{-government} = \text{government-as-usual} + \text{ICT}$. In effect Layne and Lee restrict themselves to Beer's first level of questioning: But as Beer pointed out, 'the question which asks how to use the computer in the enterprise (or in this case in governmental practice *author*), is, in short, the wrong question'. On the other hand, although Layne and Lee do seem to be using a constrained and restricted characterization of e-government, at least they are clear that e-government is not simply a case of plug-and-play or *plug-and-preside*; some processes of learning and development are called for, and presumably some managing of progression through the stages is demanded.

The second model described by Pearce is from the work of Moon. Moon uses a definition of e-government taken from a report published by the United Nations & American Society for Public Administration in 2001. Although Pearce gives a slightly condensed version of this definition, it is worth giving at some greater length

‘e-government includes the use of all information and communication technologies, from fax machines to wireless palm pilots, to facilitate the daily administration of government.’ (UN and ASPA 2001) In addition, e-government should improve ‘citizen access to government information, services, and expertise to ensure citizen participation in, and satisfaction with the government process.’ (UN and ASPA 2001).³

So this at least places the citizen at the heart of the phenomenon and specifically addresses participation and satisfaction. Moon (2002) contends that there are four aspects of e-government; establishment of reliable, high performance and secure government computer systems; web-based service delivery; application of e-commerce for transaction handling; and e-democracy. These aspects are developed as part of a five stage model starting with *Information Dissemination/Cataloguing*, moving to *Two-way Communication*, then *Service and Financial Transactions*, and *Vertical and Horizontal Integration*, ending with *Political Participation*. Pearce argues that combining vertical and horizontal integration is a weakness in comparison with Layne and Lee’s model, but the overall effort is redeemed by inclusion of political participation. Interestingly Pearce makes no comment about the inclusion of issues of performance and security.

Pearce builds upon both models, adding a sixth stage. This results in a sequence from *Informational*, to *Transactional*, then *Process Redesign*, *Full Integration*, *E-Democracy*, and *Maturity*. So Nolan’s model is adhered to more strictly, both in terms of having six stages and in the end point of maturity.

The six stages can actually be considered as a series of three consecutive pairs ... stages 1 and 2 can be considered as e-government/commerce, dealing ... with provision of information and enabling of transactions to external entities. ... 3 and 4 are focused on internal effectiveness of horizontal and vertical integration ... considered to be e-government/administration ... 5 and 6 have a sociopolitical focus and may be considered to be e-government/civic. (Pearce 2004, p142)

Pearce justifies locating e-democracy only in the penultimate stage because it is only then that the complex socio-political issues – such as consideration of direct versus representative democracy – come into consideration.

One of the common features of all these models is that they mix management of the technology with management of governmental and administrative structures; and in the case of Moon and Pearce’s models they also incorporate issues of political participation. Pearce recognizes this characteristic of his own model, but seems confused about its ramifications. The fact that beyond stage 2 the emphasis of the model is no longer on technology, but on organisational processes, structures, culture and the socio-political environment weakens the model’s utility for wholesale change efforts.

³ This version is taken from Bernick et al (2004)

Gibson and Nolan's original model stressed that progression through the stages of growth was in effect a move from managing the technology to managing the 'data' or 'data resource'; which we might now term moving from IT-management to information management. This seems a useful way of thinking about organizational maturity. So why is Pearce not content with a model that moves from a focus on technology to a focus on organizational, cultural and socio-political aspects? The answer seems to be that his initial focus was too oriented towards the technology; something he readily admits. But he then contends that 'inspection of the model showed that the effort, if directed to effective change management, rather than focusing on the technology, would work'. His solution is to place the model against a change management framework, specifically Lewin's three-phase approach of unfreezing, implementing change, re-freezing.

Although Pearce displaces Lewin's model to an extent as will be seen below, essentially his (Pearce's) argument seems to be that the stages-of- growth-model is appropriate and useful provided it is supplemented by and located against a framework of change management and organizational development. He concludes that this then provides a 'suitable, comprehensive, holistic management model' for e-government. Moreover it provides an effective response to the 'challenge to apply management *more stringently* to e-government' (stress added). Having moved far ahead of Beer's first question – the wrong or inadequate one – we now seem to be back where we started. Yet Pearce himself has provided the objective that ought to have left him dissatisfied with his own conclusions. In the introduction and synopsis to his own paper he noted that

E-government is not simply a public good that provides another channel of communication between governments and their constituents, it is an opportunity to employ new technologies in order to *enable transformation of government to a model more appropriate to the 21st century* (stress added)

Unfortunately he has not heeded his own words – although it might be contended that a phrase such as '*transformation of government to a model more appropriate to the 21st century*' conceals more than it reveals: Yet Pearce implies that the only transformations will be centred on vertical and horizontal integration.

The recent work of Heeks and his fellow contributors (1999) is a useful corrective to Pearce's modest and constrained objectives. In his introductory essay Heeks stresses that although any application of ICT could also be accomplished by other, non-technological means; in practice ICT allows the accomplishment of tasks that otherwise 'could not be contemplated'. This does not quite come up to Beer's third question, but it comes fairly close.

5. The Social Context of E-Government

The stages-of-growth model, however, has one distinct strength: It immediately focuses attention on issues such as progress and development, and learning and experimentation. If those using the approach have sufficient grasp of the literature, it should also lead to consideration of the extent to which *growth* will necessitate or result in fundamental re-thinking of the context within which the evolution is charted. If the final stage is associated with *maturity*, then there should also be an intimation that such a stage is usually tantalizingly beyond reach, but constantly present as an ambition. When applied to any context within which technology plays an initiating role, stages-of-growth models should also move from a focus on the technology itself to more broadly-based considerations of the ways in which the

context itself changes – as a result of both assimilation and accommodation. This will then preclude falling into the trap of technological determinism: Recognition of the applicability of Piaget's dual-natured concept of adaptation prevents allocation of primacy to either the technology or the surrounding context.

Furthermore, establishing stages affords a basis for bench-marking which can be helpful to practitioners and policy-makers and other stakeholders. Moreover this implies that the model should be couched in terms to which these constituencies can relate, so that the model can be revised and modified accordingly. In the context of e-government it is crucial to understand that the learning process is undergone by component institutions and bodies within governmental structures, as well as by *government* itself: And this includes those *being governed*. Ideas about e-government should prompt stakeholders to ask Beer's second and third questions; *how should government be run given the existence of ICT?* – and – *Given the existence of ICT, what is the nature of government?*

One of Beer's fundamental assumptions – at least in his early work – is that organizations develop as systems, but are themselves immersed in a systemic – even systematic – environment. The metaphorical basis of this, one which permeates his work, is that organizations are in some sense *organic*; hence his key books are entitled *The Brain of the Firm* and *The Heart of the Enterprise*.⁴ Correspondingly the concepts of learning and maturation assume that organizations can be considered to be organic – they grow, evolve, mature and perish. This organic metaphor has great power and is part of the – implicit – basis of applying a stages-of-growth model to e-government. But the metaphor has its limitations, and one of them is that it usually encompasses the assumption that the environment within which the organism grows is relatively constant – certainly far more so than the individual organism itself. So in the context of e-government it is often assumed that governance takes place in a relatively stable environment. This compounds the failure to pursue the third of Beer's questions or challenges, since the current environment is far from stable.

What has to be grasped is that the very nature of government and governance are altering as a result of massive socio-political changes and ruptures. The current socio-political context has been variously labelled *the information age*, *the knowledge society*, *the digital economy*, and *the informational form of capitalism*; depending on which author you read. Yet these all fail to encapsulate one of the key aspects of contemporary society: Constant and continuously unpredictable change on a global scale but with local and specific impacts. The recent work of Bauman (various), Beck (1992), Giddens (1991) and Sennett (2000) amongst others offers a valuable resource against which issues such as e-government can be understood in this light. In what follows I will focus specifically on what Zygmunt Bauman has termed *liquid modernity*, and the ways in which strategies for e-government need to take account of this fluid socio-political formation.

⁴ His later work was devoted to explication of 'the *viable systems model*'; which extended the organic metaphor, and which links directly to work on complexity in the writings of Varela, Espejo, etc.

6. Liquid Modernity – Flux and Turbulence

In a landmark paper in the 1960s, Emery & Trist (1965) distinguished between four types of ‘causal texture’; thereby focusing on different environments within which organizational activities and developments take place. The four types ranged from the placid to the turbulent. Each causal texture or environment was characterized by the distribution of what they termed ‘goals and noxiants’: Or in the words of Sellar and Yeatman (1998), ‘good things and bad things’.

In the *placid-randomized* case these goals and noxiants are ‘relatively unchanging in themselves and randomly distributed’. This corresponds to ‘the economist’s classical market’ which takes little or no account of discontinuities. In such causal textures, there is no distinction between tactics and strategy. Tactics can be learned by simple trial and error, and then generalized across the entire environment. The placid-randomized environment sounds more like an idealized context than anything that might actually exist; but in ecological terms Emery & Trist likened it to large areas of grassland such as the Steppes, where vast barren expanses are punctuated by small concentrations of food.

The *placid-clustered* environment differs slightly from the randomized one, since ‘goals and noxiants are not randomly distributed but hang together in certain ways’. Strategy and tactics are now distinct since it becomes important to be able to decipher the non-uniform environment, gaining an understanding of which parts to avoid and which to approach. The ecological exemplification given by Emery & Trist is an area of scrub land with clearings and forested areas; the latter being both sources of danger from attack as well as food and shelter. In organizational terms, in such contexts there is a need to develop long-term plans and devise resource management strategies accordingly. This also necessitates the development and encouragement of (vertical and horizontal) division of labour, or what Emery & Trist term ‘distinctive competences’, accompanied by centralization and hierarchy aimed at optimizing co-ordination and control.

The third type of causal texture they termed *disturbed-reactive*. The key difference between this texture and the previous one is that as well as the environmental aspects, account has to be taken of competitors. As a consequence strategies have to incorporate ways of anticipating the actions of others and also anticipating their responses to such expectations, and so on. As well as tactics and strategy, the concept of *operations* is required. This brings together ‘a planned series of tactical initiatives, calculated reasons by others, and counter-actions’. One key ramification of this additional facet is that some de-centralization is required since there is a ‘premium on quality and speed of decision at various peripheral points’. Emery & Trist base this observation on the derivation of *operations* from the military context, where the lack of any, or any reliable, real-time communications necessitates decentralization of precisely this sort. Organizations have to decide on the extent to which they are prepared to

decentralize, allowing operational decisions to be taken rather than waiting for authorization from command-and-control centres.⁵

Organizations have to choose between strategies that range from the fiercely competitive to the openly co-operative; and will have to judge when to move across this range. Ecologically this can be likened to an environment with several groups of chimpanzees, in close proximity to baboons, leopards, and the like; in other words where there is co-location of competitors and predators. This is a context that will encourage the appearance of an oligopoly with non-zero sum competition, and so necessitates that actors foster alliances and out-think competitors. 'One has to know when not to fight to the death'.

The fourth type of causal texture is the *turbulent* field. Emery & Trist argued that in this context the dynamic processes themselves lead to the triggering of other dynamic processes, some of them emerging from the turbulent field itself: 'The *ground* is in motion'. This is akin to the phenomenon of 'soldiers marching in step over a bridge'; the Millennium Bridge over the Thames in London provides a recent example.⁶ Furthermore they also argued that in such contexts there is an 'increasing reliance on research and development ... [leading] to a situation in which a change gradient is continuously present'. In other words the only thing that remains unchanging is change itself.

In ecological terms turbulence is exemplified by disrupted eco-systems such as rain-forests in 20th century, and even more so now in the 21st century. It also applies to the current global economic system; 'the dynamic properties arise not simply from the interaction of the component organizations, but also from the field itself. The *ground* is in motion'.

These trends mean a gross increase in ... *relevant uncertainty*. The consequences which flow from ... actions lead off in ways that become increasingly unpredictable: they do not necessarily fall off with distance, but may at any point be amplified beyond all expectation; similarly, lines of action that are strongly pursued may find themselves attenuated by emergent field forces.

In other words, large changes can have negligible effects, and small ones can have significant ones: What is now sometimes referred to as the butterfly effect.

Writing in the 1960s Emery & Trist were clear that the response to turbulent fields cannot be simply a larger, more bureaucratic and over-arching hierarchy. On the contrary, their tentative solution called not for stronger, more powerful or extensive structures; but rather relied on 'the emergence of *values that have overriding significance for all members of the field*' (stress in original). They justified this by arguing that in conditions of persistent

⁵ Any idea that in the context of an information society it is now largely possible to overcome this dilemma with the introduction of reliable real-time communications and monitoring is almost certainly mistaken!

⁶ When this new footbridge over the Thames opened late in 2001, everyone flocked to walk across. In so doing they set up vibrations that caused the bridge to sway and so forced its closure and re-engineering.

‘relevant uncertainty’, attempting to select a course of action on the basis of its consequences is self-defeating and largely pointless; there is no way of having or developing any insight or understanding of future effects. They suggested that people will need to have recourse to ‘rules ... to provide them with a guide’. These days we might use the term *heuristics* and contrast them with *algorithms*; the former implying more flexibility as opposed to the rigidity of the latter.

Emery & Trist did not, however, specify how such rules or values - ‘such as the ten commandments’ – will emerge and be sustained. They simply offered the imperative statement that strategic objectives can no longer be formulated in terms of location (which was deemed appropriate for clustered fields) or capabilities (appropriate for disturbed fields); but ‘must now be formulated in terms of *institutionalisation*’: Which they defined as the state an organization reaches ‘through the embodiment of organizational values which relate them to the wider society’.

There is a striking resonance between Emery & Trist’s ideas, and the recent work of Zygmunt Bauman on *Liquid Modernity* (Bauman 1999, 2000, 2002, 2004). This second phase modernity is a result of modernity’s melting powers, initially applied to ‘traditional’ or ‘pre-modern’ social entities now acting upon modernity itself: So that earlier reference points and concepts, presumed to be fixed and immutable, have been emptied of meaning and content. This phase of social development ‘sets itself no objective and draws no finishing line; ... it assigns the quality of permanence solely to the state of transience. Time *flows* – it no longer marches on’. The disruption initiated by modernity now acts upon modernity itself in a fashion that has no end point: Like the sorcerer’s apprentice, social forces have been unleashed and continue to develop out of control – and there is no sorcerer who on his return will break the spell.

In the light of Bauman’s work we can see that Emery & Trist’s turbulent field is no longer restricted to particular organizational contexts or sectors, but has now become the axial principle of society. Consequently there is little or no chance that organizations can break out of turbulence by seeking to embrace, or orient themselves towards more stable and solid values from society in general. The core values of society are themselves those of flux, innovation, change, transformation and competition.

Society in the 21st century has been described by Ulrich Beck (1992) as undergoing a process of *second modernity*. One result of this is that previously fixed points, rich with meaning and significance for social actors – and for organizational and institutional orientations – have lost their fixity and significance. Beck terms them *zombie categories* and *zombie institutions*, and examples include *family, class, neighbourhood*. Bauman develops this insight by noting that we have a ‘redistribution and reallocation of modernity’s *melting powers*’. Initially aimed at ‘extant institutions’ these melting powers have now moved on to undermine ‘configurations, constellations, patterns of dependency and interactions’. ‘The liquidizing powers have moved from the *system* to *society*, from *politics* to *life-policies*’. In such an environment concepts of citizenship, participation, government and governance are stripped of their meaning. Reinvention of government and governance is not a choice, it is ineluctable and essential; mandated by the context.

So the turbulent field of Emery & Trist is no longer an organizational or local context, it is now ubiquitous; and any hope that society and well-founded institutions could provide stability to counter this turbulence is unfounded. Society and social institutions are not the solution, on the contrary they are at the heart of the problem; and so this has severe repercussions for consideration of government and governance – with or without the e-prefix. Any prospect that e-government could simply be some 21st century *Cyber-Leninism* has to be ruled out of hand. The *business of government* has changed, and will continue to do so, there is no end-point to which it can be directed.

7. Rational Government – Player Piano and Cloud Minders

In his earlier work on globalization, Bauman (1998) made the point that the state has been dismantled. In particular its foundational tripod of military, economic and cultural sovereignty has been destroyed; all three legs have been broken, the economic most of all. To a large extent governments have responded to this catastrophic loss of sovereignty by re-inventing themselves as employment agencies, touting their workforce as skilled, flexible (i.e. easy to get rid of), and cheap. A quick tour of the websites of governments and governmental agencies bears this out. As such there is a basis for the argument that citizenship in the 21st century is dependent on being able to register as an employable person and to sustain that employability. Much of the language about e-government uses concepts such as *inclusion*, and *participation*; but a glance at the EU websites on E-Inclusion (sic!) indicates that for all the talk of *inclusion*, E-Citizenship is for the most part targeted at those able to prepare themselves to be employable – i.e. perpetually-flexible – knowledge workers for the globalized information society.

In his more recent writings, Bauman (2004) has looked at *waste*; both in terms of consumerism and people. Thus he stresses that liquid modernity demands that people throw out yesterday's innovative consumer products in order to make way for today's. It is not only yesterday's newspapers that are used to wrap fish and chips; everything that is 'old news' is due for disposal in one way or another. Similarly, people themselves can be consigned to the scrap heap; the term *redundancy*, now often masked by some management-speak euphemism such as *flexibility*, *down-sizing*, *right-sizing*, *market-factoring* testifies to this. A stark evocation of this was actually provided in Kurt Vonnegut's novel *Player Piano* written in the 1950s, where the few 'fortunate' enough to be employed in the corporate world – where they are at the beck-and-call of the truly fortunate, extremely powerful and wealthy elite – are separated from those for whom there is no longer any employment, other than occasional menial tasks. An episode of *Star Trek*, '*The Cloud Minders*', runs along similar lines (clearly derived from Lang's cinematic masterpiece *Metropolis*) with its depiction of life on the planet *Ardana*. Here the floating city of *Stratos* appears to offer the most cultured and cerebral civilization in existence – however far one may have boldly gone. But the apparent idyll has a less pleasant aspect; the Troglytes who dwell on the surface perform all the menial tasks and drudgery for those floating above them. Also the gas on the surface causes the Troglytes to suffer from retarded mental development and leads to psychological disturbances such as anger and aggression. Thus the city dwellers can separate themselves from the surface dwellers, justifying this in terms of the Troglytes coarse and vulgar behaviour. As the ever-perceptive and unpretentious Mr Spock observes: 'This troubled planet is a place of the most violent contrasts. Those who receive the rewards are totally separated from those who shoulder the burdens. It is not a wise leadership.'

Developing the *Star Trek* motif we might say of the realities and potentials of e-government: *It's government Jim, but not as we know it.* Or we might restate Beer's third question: *What, given liquid modernity, should e-government actually be?* Those working on e-government, or government in a technological age, really ought to contend with the insights and admonitions of those such as Vonnegut and the *Star Trek* writers; but few actually do so. Far too much writing on the subject takes off from an un-examined rationalism that assumes that e-government is the desirable and desired end result of some rarefied, ultra-rational, well-planned process that will inevitably lead to *better* government, because it will incorporate and be partially guided by technology. Those suffering under this misapprehension may well be doing so for the best of motives; surely this is the basis for a wise and enlightened society? But if this is what they really think then they need to consider the work of, for instance, Stephen Toulmin (1990), who has argued that if we wish to take our lead from the Enlightenment, we should aim at a humanism derived from Montaigne as opposed to a rationalism derived from Descartes.

An overly rationalistic and mechanistic view of government, all too readily convertible to the 'e' form, is one based on certainty; a certainty beyond wisdom along the lines of Crosby's model. But as Voltaire noted; 'doubt is an uncomfortable position, but certainty is a ridiculous one'. If we are not careful our concepts of e-government will simply be prescriptions for automating a residual and out-moded form of government; an on-line employment agency, boasting the lowest costs, easiest redundancies and termination, lowest overheads, simplest extrication and disengagement: Perhaps with additional, value-added services for waste disposal and security.

All this will be mere persiflage; failing to engage with the real complexities of the liquid modern age: And by way of conclusion I can offer nothing more pithy and succinct than the words of that great liquid modernist – Bob Dylan ...

*Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'*

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