



School of Public Policy



THE ADVENT OF DIGITAL GOVERNMENT: PUBLIC BUREAUCRACIES AND THE STATE IN THE INTERNET AGE

Patrick Dunleavy, *London School of Economics*
and
Helen Margetts, *University College London*

Paper to the Annual Conference of the American Political Science Association,
Omni Shoreham Hotel, Washington, 4 September 2000

**THE ADVENT OF DIGITAL GOVERNMENT:
PUBLIC BUREAUCRACIES AND THE STATE IN THE INTERNET AGE**

**Patrick Dunleavy, LSE
Helen Margetts, UCL**

Abstract: Rising levels of internet usage by governments, the private sector and society in general herald a new era for public administration, challenging the New Public Management (NPM) paradigm which has dominated public administration trends for the last 20 years. NPM's direct effects on the state's capacity to solve social problems have been offset by indirect reductions in citizen competence and increases in policy complexity. In the Internet era, government organisations face four alternative pathways: a continuation of NPM trends strengthened through web-based development; increasing state residualization, where government organisations lag behind the rest of society in developing web presence, with a consequent loss of nodality; a more positive scenario where a digital state paradigm replaces NPM; and finally, a 'policy mess' where conflicting NPM and e-government initiatives produce no coherent direction of development. In this still open future, central or federal government initiatives need to steer a delicate path between utopian and dystopian pathways to maximise the benefits of the Internet age.

The theme of this paper is that the radical impact of new public management (hereafter NPM), which has wrought such extensive change in public sector organization and methods across many liberal democracies over the last two decades (Aucoin, 1998; Hood, 1994; Pollitt, 1993; Pollitt and Bouckaert, 2000; Dunleavy, 1994), is over. NPM has been overtaken and superseded by the demands of Web-enabled government, which will substantively define one major theme of change in public administration across all advanced industrial countries for the next decade at least (Dunleavy and Margetts, 1999). We need to reorientate the academic study of public administration and public policy to focus in a dispassionate way upon the nature of current changes, steering a fragile course between the contrasting utopian and dystopian views, which (as always) surround major information and communication technology (ICT) changes. The advent of the digital state does offer some

unique potential advantages compared not just with NPM reforms but also with previous waves of change in public sector management practices. But equally the history of ICT changes within the government sector in the USA and Britain is replete with examples of failed expectations, arising chiefly from the impact of pre-existing institutional arrangements and organizational cultures upon how ICT development is interpreted and handled administratively (Margetts, 1999). Web-enabling government is still in an ‘open future’ phase, in which a number of alternate pathways remain open. A few important pathways have perhaps already closed - notably the option of an effective government portal competing with commercial rivals in both the USA and Britain, and perhaps the notion of an integrated government Web presence in the USA at federal level. (Although the US federal government has announced some form of ‘portal’ for the near future). But Web-enabling government can still achieve powerful unique effects in simultaneously raising public services productivity, cutting costs, reducing policy complexity and boosting citizens’ competence to handle issues *if* (only if) its management and development is appropriately handled. We consider: a brief analytic framework for mapping the transformative impacts of public policy ‘regime’ initiatives; how NPM worked in terms of this framework; and how Web-enabling government could at worst repeat or accentuate aspects of the NPM experience, and at best differ radically from NPM in its effects.

1. Analysing the impacts of public policy regime changes

Mapping and explaining the processes by which one policy regime in public sector management succeeds another is a field still in its infancy (Pollitt and Bouckaert, 2000, Ch.1). Pioneering work in ‘zoological’ mode has mapped the patterns of administrative arguments influential in different phases of public management’s development, and reaffirmed Simon’s earlier observation of conflicting parables and principles (Hood and Jackson, 1991). Acute observers argue that the ascendancy of one school of thought (or ‘fashion’) over another owes more to rhetorical devices and selective emphasis from this corpus of conflicting ideas, together with an inherent cyclical dynamic in professional fields (Hood, 1994). Nonetheless Hood and others see a substantial upward dynamic in organizational technologies, with new combinations of the basic NATO₂ toolkit emerging in response to stochastic developments in societal problems and the declining effectiveness of previous effector and detector mechanisms over time. [The NATO₂ typology of policy instruments stems of course from Hood (1983). The initials stand for Nodality, government’s central position in society’s information networks; Authority, the use of legislative and regulatory powers with coercive force; Treasure, the use of public finance and other government-owned resources; Organization1, the establishment of basic bureaucratic capability; and Organization2, the creation of sophisticated scientific, technical and professional capabilities - including developed ICT systems]. Some analysts by contrast see the succession of ‘modernist’ ideas in purely symbolic terms, as an inescapable ritual in which uniform external practices are politically imposed across swathes of public agencies not because of their organic roots in local management practice but simply as a displaced method of testing agencies’ adherence to whatever current ‘good practice’ demands (Scott, 19xx).

Wherever the balance of the argument lies between these competing meta-positions, we focus here on a lower-level set of questions designed to provide a framework for organizing an assessment of the impact of any

given new public sector management regime in a succession of policy regimes, shown in Figure 1. To ‘read’ the diagram we start with the direct effect of a new way of running public sector agencies, which we assume is introduced in order to try and achieve an improved level of social problem-solving in some respect - flow 1. Generally we can characterize the *direct* effect of an sustained policy innovation as positive in some respect and some degree, for if it were not so, if the change had no positive impacts on social welfare at all, the policy sifting and selection process in advanced liberal democracies might be expected to knock the change out of contention or severely delay its implementation (Becker, 1985). Even sustained initiatives with relatively tenuous claims to improve social welfare net of the transaction costs of the change will none the less have some substantial positive effects for several reasons. A pretty stochastic process of policy change probably has some positive effects in disrupting sclerotic tendencies inside the public sector and hence enhancing bureaux’ responsiveness and cutting agency costs. And there is an established somewhat cyclical guidance pattern for the public sectors of liberal democracies with party alternation in government, in which progress towards multiple partly conflicting sets of goals is achieved by first emphasizing one set of priorities for several periods and then a rival set. Hence any reasonably sustained policy regime switch may often have corrective or therapeutic re-balancing effects for an initial period.

But looking only at the direct, intended impacts of policy changes has repeatedly lead decision-makers into under-estimating the overall impacts of new regimes. A growing literature has documented the extent to which policy regime succession can create offsetting ‘side-effects’ or ‘by-products’, often represented as unusual, one-off, unexpected or incapable of prior prediction. By contrast, as James Scott (1998) has recently emphasized in *Seeing Like a State* there is every reason to suppose that these often-neglected side implications of regime succession or major initiatives are absolutely inherent and omni-present. Similarly the impact of much recent public choice literature has been to cast doubt on the previous neo-classical economics assumption of a perfect administrative agent, and to emphasize the inherent transaction and transition costs (in terms of shirking, shaping or rent seeking) in opting for public sector policy solutions, even with relatively vigorous intra-governmental ‘markets’ (Breton, 1999; Horn, 1996; Kraan, 1996).

Figure 1 (shown below) represents these possibilities by focusing on how a new policy regime affects citizen competence on the one hand (flow 2) and level of institutional and policy complexity on the other (flow 4). Autonomous citizen capabilities for addressing or coping with societal problems is always critical for the final level of social problem solving, indicated by the positive flow 3, even in societies with the most extensive state sectors (Scott, 1998). So even what chaos theory terms ‘butterfly wing’ effects which reduce citizens’ competence can have dramatic multiplier effects. Yet there is every reason to suppose that new policy regimes will normally reduce citizen competence, especially in their early days. New policy and administrative concepts and terminologies are introduced, often at variance with established public understandings. And new agencies, procedures, methods of operating, and systems for allocating scarce public benefits appear, jarring with people’s previous expectations. Thus the net impacts of flow 2 and 3 are likely to be net negative - a negative acting on a positive.

New policy regimes also tend to increase institutional and policy complexity. The transactions costs of introducing and implementing changes are concentrated in the early years, when the new arrangements are by definition not routinized and administrative actors are required to undertake exceptional levels of policy

learning. Policy succession is also rarely complete, so that the new regime tends to overlay pre-existing arrangements and procedures. The characteristic pattern of development in modern technological systems is also towards further specialization of sub-systems. So the direct ameliorative effects of new initiatives on social problem solving are generally offset to some extent by countervailing increases in problem complexity. This development is adverse because policy complexity is one of the key inhibitors on effective social problem solving, magnifying information demands, boosting the number of clearance points needed for progressing solutions, and creating in particular increased co-ordination problems. Note that co-ordination difficulties are not necessarily premised upon direct conflicts of interest between actors. Problems of synchronization, design fit, assignment and realization problems with innovation attributes can recur even in situations where all actors accept a common interest in achieving shared goals (Milgrom and Roberts, 1992, p. 90). Hence again boosting policy complexity will impair to some degree social problems solving - a positive (flow 4) plus a negative (flow 5) has a net negative impact on the dependent variable. But in addition, increased policy complexity has negative effects on levels of citizen competence - the more difficult it is for citizens to understand internal state arrangements and operate appropriate access points to represent their interests politically and administratively, the more their autonomous capabilities to solve policy problems may be eroded. This loop may operate in particularly forceful ways in some areas, as suggested in Illich's (1977) controversial general argument that the industrialization, professionalization or technicalization of social life all have fast and dramatic effects in eroding autonomous citizen competences to cope with their own problems which they cannot actually match by providing replacement solutions. If this loop is present then again a negative (flow 6) plus a positive (flow 3) yields a net negative effect on social problem-solving.

We can also sum up Figure 1 in slightly more formal terms: $\Delta S = f(\Delta R, \Delta O, \Delta X)$

where Δ stands for 'change in', S denotes social problem-solving, R a policy regime change, O the level of citizen competence in the issue area, and X the level of institutional and policy complexity. Holding all other things except the regime change equal, and assigning lower case letters to serve as parameter labels from Figure 1 we get: $\Delta S = aR - oR - x_1R - x_2R$

- which says that the change in social problem solving is the sum of the direct effect of the regime switch (whose efficacy is given by a and magnitude by R) minus the mediated side-effects operating through reduced citizen competence (o) and increased policy complexity directly (x_1) and indirectly (x_2).

Finally in Figure 1 there are important feedback loops from the level of social problem-solving achieved to other variables. Successful problem-solving increases citizen competences and tends to reduce policy complexity as issues become more benign and tractable. Worsening levels of ability to cope with problems can spiral into vicious circles or even crises, eroding citizens' confidence in their abilities to handle life-issues and greatly boosting difficulties in achieving institutional and policy co-ordination. We could easily incorporate feedback effects lagged by one relevant period in the equation above.

Note that the overall impact of new policy regimes in Figure 1 is moot - there is no implication that there is any general pattern. There are *always* displaced side effects of these two kinds when introducing new policy regimes, and typically these side effects to some extent offset any direct welfare gains achieved. But these propositions are consistent with new policy regimes having a wide range of net effects. A strong direct impact of a new public management regime on social problem-solving might easily dwarf the mediated side-effects. But on the other hand, a less impressive positive main effect might not be enough to stop overall social welfare being eroded by the change process. We turn next to briefly characterizing new public management reforms in these terms.

2. The impacts of new public management

There is no precise scholarly agreement on how the new public management regime should best be characterized, but all the authors involved generally refer to pretty similar range of phenomena. Trait theory approaches have drawn up exhaustive lists of NPM changes associated with the Thatcher and Major governments, the Australian and New Zealand governments since the mid 1980s, and (in a humanized form) with aspects of the National Policy Review process under Clinton and Gore in the mid 1990s (Margetts, 1997; Peters and Savoie, 1998). More theorized views have pictured NPM as a move down-grid and down group in the terms of cultural theory (Hood, 1998; Dunleavy and Hood, 1994), a shift from conventional hierarchical and rule-bound agencies to more entrepreneurial public bureaucracies, or as an accentuation of 'individualistic' and selected newer aspects of 'hierarchicalist'/leadership elements in administrative cultures at the expense of 'egalitarian', 'fatalistic' and older hierarchical elements (Hood, 1998). But we adopt here a more public choice-influenced characterization of NPM as a combination of major efforts at organizational *disaggregation* (such as layering, quasi-markets or purchaser/provider separation) with attendant impacts on areas such as ICT or personnel systems; the introduction of new forms of *competition* (both administrative competition to attract 'customers' carrying with them real or virtual packets of financing, and inter-sectoral and inter-modal competition); and new patterns of *incentivization*, de-emphasizing public service ethics or professional collegiality in favour of transferring assets to the private sector, involving private sector finance, deregulation and so on (Dunleavy, 1994).

Now that NPM is looking long-in-the-tooth, it seems reasonably clear that its impacts fit neatly into the framework of Figure 1. Disaggregating previous integrated hierarchies, introducing private sector competition for public services production, and pushing forward new monetarized incentive systems and transfers of asset ownership, have all had some positive direct effects in cutting public services costs and in some cases increasing

public services delivery in the main countries where self-conscious NPM strategies have been applied - the UK, New Zealand and Australia. But the policy succession cycle has also swung against NPM, beginning earliest in New Zealand in 1992 when the administrative reform impetus there began to peter out. There has been a marked retreat from some NPM ideas in Britain after the 1997 Labour government's emphasis upon 'joined-up governance' halted the main disaggregation trend towards agencification. It also scrapped the 'quasi-market' initiative in the UK National Health Service, reintegrated previously semi-privatized schools under local authority control, and abandoned mandatory competitive tendering for local council services in favour of a 'best value' approach. But other elements of NPM, including an emphasis on strong organizational leadership, output or outcome-based performance indicators, new forms of performance-related pay, and the introduction of private finance into public services investment and operations have all continued.

Making extensive use of ICT developments has always been an important element of NPM, especially on the managerial side. Of course, ICT changes have been heralded as a potentially transformative influence by successive cohorts of public sector managers in all advanced countries since the 1970s. It formed part of the conventional wisdom of NPM that technological changes of the late 1980s and early 1990s offered unprecedented opportunities to push through slimmed down and flatter organizations with greatly expanded management information flows (Bellamy and Taylor, 1998). Progress on ICTs would allow a small 'provider' staff agency to act as an 'intelligent customer' to competing contractors, or help a central (or federal) department to monitor policy performance of a large number of distributed service providers or local public agencies. Thus 'informatization' and NPM were seen by practising managers and IT utopianists as inextricably intertwined:

'NPM can be interpreted as a special and prominent case of an attempt to deliver the transformational properties of informatization. Full-blown NPM is an information-intensive reform of the structures and processes of governance, demanding new and complex horizontal and vertical flows of information in and around government organizations' (Bellamy and Taylor, 1994: p. 26).

However, all along many commentators on NPM in public administration adopted a much more sceptical view, dismissing changes in ICTs as of minor significance for organizational cultures. Some authors just completely exclude all mention of changing ICTs in discussing NPM (Barzelay, 2000). Others grudgingly acknowledge some possibility of influence. For instance, Pollitt and Bouckaert (2000, p. 160) remark disparagingly that despite the many problems of implementation: 'Nevertheless, technological progress will sometimes be able to resolve the contradiction[s of NPM], which is no doubt one reason why it is such a universal favourite of the rhetoric of public management reform'. Tellingly, however, this is almost all they have to say on ICTs in a book of over 300 pages.

NPM advocates made great claims that their particular wave of reforms would stand outside the normal pattern captured in Figure 1. In particular they argued that NPM would boost and not erode people's autonomous capabilities to look after themselves. Exponents of greater privatization routinely presented it as 'the ultimate decentralization' and argued that introducing an option for 'choice' amongst alternative service providers instead of their dependence upon previous monopoly suppliers would empower public service consumers (Savas, 1987 and 2000; Pirie, 199x). Some of the most individualistic themes in NPM tapped an enthusiasm for isocratic administration (self-administration by the individual citizen) that might be traced back

to Jeffersonian ideas and before that as far back as the Greeks (Hood, 1998). For example, the late Thatcher model of the British welfare state envisaged an empowered consumer able to choose where to educate their children amongst a wide range of locally managed (even quasi-independent) schools, and cared for by a family doctor similarly empowered to choose on their behalf amongst competing NHS hospitals, set up as local public corporations within an overall NHS quasi-market.

Similarly NPM was billed initially as reducing policy complexity by ‘streamlining’ sclerotic conventional public administration systems; flattening hierarchies inside remaining large agencies; and making inter-relationships, flows of funding and relative responsibilities transparent in policy systems. The use of publicly published performance outcome tables (like school and hospital league tables) would transform methods for assessing and controlling devolved public agencies or contractors, and promote market-like disciplines. Another powerful ‘simplifying’ trend was supposed to be unbundling discrete bundles of bureaucratic work and giving each of them strong entrepreneurial leadership, a trend which in ten years moved more than 85 per cent of UK civil service staff from being integral elements of Whitehall departments to hived-off Next Steps agencies.

Turning to the possible side-effects of NPM, did it indeed escape the previous normal tendency for a strong new policy regime to reduce citizen competences and increase policy complexity? NPM’s impact on citizen competences seems to have been negative in a significant degree. Encouraging consumerist involvement with the public services predictably boosted the exercise of ‘exit’ rather than ‘voice’ options (Hirschman, 1970), while the commercialization of public services in the UK and New Zealand introduced a clamp-down by providers on releasing previously public information under the guise of commercial confidentiality. Capacities for exercising citizenship were thus eroded motivationally and in terms of fruitful opportunities for involvement: thus nominal control by public service users only served to erode citizen and community capacities to overview issues. Much consumer choice also proved illusory since it relied on the existence of a stock of surplus school or hospital places, which certainly in the UK was too costly for central government to maintain. ‘Choice’ thus became a misnomer for the more exaggerated operation of club-type effects within the public services, with active and well-off citizens able to advantage themselves using new consumerist procedures relatively to less active or less well-resourced or knowledgeable people (Pollitt et al, 1998).

NPM also unambiguously increased policy complexity. For example, the effort to sustain an NHS quasi-market in Britain, sustained from 1988 to 1997, had as a pre-requisite the introduction of a centralized classificatory system for more than 15,000 different types of hospital operations and then the independent production of market-based prices for hundreds of independent hospital trusts, each nominally constituted as a financially self-sufficient public corporation wholly dependent on incoming patients for its revenues. No more than a small part of this agenda had been tackled by the time the effort was scrapped by the new Labour government, and in that decade the number of NHS accountants and managerial positions soared at the expense of relatively static front-line nursing and medical staff levels. In all the areas where it was introduced, purchaser/provider separation more than doubled the number of inter-relating bureaus. A study of the greater London area in the period during which its metropolitan government was abolished showed a cumulative NPM fragmentation effect which was severely disabling on strategic competences (Dunleavy et al, 2001 forthcoming). A spiralling pattern of agency fragmentation, where strong leaders and a corporatization of

agency's internal procedure accentuated their planned level of independent operations to unanticipated levels, had especially direct and adverse effects upon citizens' ability to understand, let alone operate the new NPM arrangements. The partial NPM ideal of isocratic co-ordination of public services foundered on the realistically impracticable information costs of self-administration.

The inter-relationship between NPM's impacts and the development of ICTs was closely bound up in these adverse side-effects, and proved much more complex in operation than NPM advocates or IT utopianists had hoped. Although investment and the technological sophistication of government internal systems both increased markedly from the mid 1980s to 2000, as one would expect under any policy regime, expectations of a transformative impact in NPM countries or agencies were generally dashed. Although PC-based systems brought distributed processing power to many more public sector desktops, and ICT costs declined across the NPM period, evidence of major productivity improvement effects are as hard to pin down within public sector organizations as in many business corporations. Certainly there has been no close correlation between IT spend and organizational effectiveness in the UK or USA. And studies of the use of ICTs within government suggested that to the contrary, large scale computer systems inside public agencies in Britain and federal departments and agencies in the USA were actually working against NPM trends (Margetts, 1999: 173-175). For instance, large-scale computer contracts offset disaggregation. The oligopolistic nature of government computer services markets has worked against competition, especially in the UK where the market for government services and systems integration is much more concentrated than in the United States (Bastow et al, 2000). Assessing information technology investment using output measures has also posed real dilemmas for public sector managers.

Thus, far from bucking previous trends in the cyclic development of public services NPM followed the normal pattern almost to the letter. An initial rapid policy boom was sustained on the back of impressive short-term direct effects, but later eroded into a crawl in the mid 1990s by the emergence of powerful off-setting side effects in terms of damaged citizen competences and greatly increased institutional and policy complexity.

3. Possible scenarios for Web-enabling government

Socialized as we are into disparaging the idea of technologically-determinist processes of social change, most social scientists will be initially sceptical about the transformative potential of the next phase of public administration changes. Perhaps this reaction, together with the hitherto relatively modest financial costs of Web provision, helps to explain the current vestigial academic literature in public administration and public policy studies about the administrative impacts and corollaries of incorporating Web sites, e-mail methods of working, intranets and extranets into public service systems. But there are critical features of internet and Web impacts on public management which represent a qualitatively different kind of shock compared to previous initiatives. In particular, the escalating levels of internet access in advanced industrial societies, the extent to which 'bricks and mortar' companies have had to adapt rapidly to new virtual competitors, and the spread of internet adoption by other civil society organizations and groups, all constrain government into making a rapid

adaptive response. The normal caveats about political leadership being essential for effective public sector reform have less force in this more constrained-change situation. Of course, strong political leadership remains a useful contributory element - as witnessed by commitments like Singapore's very rapid progress on electronic transaction; the Australian Prime Minister's rather vague promise of fully electronic public services 'wherever possible'; Tony Blair's apparently more specific pledge of full electronic delivery of UK public services by 2005; and the various tranches of the 'Access America' program and the later phases of the National Performance Review in the USA.

Will Web-enabling government break out of the established pathways of radical NPM changes (in countries like Britain, Australia and New Zealand) or more modest NPM-influenced changes (in countries like the USA or Spain) to define a new and different paradigm of public sector organizational change? Current cohorts of administrators and politicians have been socialized in a more or less NPM-influenced environment, and most have committed themselves very heavily to part at least of the disaggregation + competition + incentivization agenda. The managerial and political vision needed to fully embrace the implications of Web-enabling and electronic delivery of public services is likely to be in scarce supply, whatever the welfare-maximizing logic of making a radical break with NPM approaches. Similarly where implementation of NPM reforms has been most extensive the underlying organizational allocation of core competencies has often shifted radically, especially in the provision of ICT support and implementation to government, where major international service-providing corporations now play a critical role in the sifting and adoption of new innovations, and currently still have strong incentives to selectively accentuate those elements of the Web-enabling agenda most consistent with their established (post NPM) market positions and methods of working.

We can combine these possibilities in the following simple table, which shows

- along the vertical axis the extent of change in public management and policy arenas, with two alternatives for radical (transformative change) or for more modest, catch-up change lagging behind private corporations and civil society; and
- along the horizontal axis three alternative settings for the pattern of change, depending on the extent to which Web-enabling continues and reinforces pre-existing NPM momentum, or makes a radical break towards a distinct new paradigm of public sector management, or falls instead into some intermediate space where no clear pattern on these lines can be discerned and a slow move towards web-enablement works against the vestigial arrangements left by previous NPM initiatives.

The intersection of these categories suggests four feasible outcomes, with two empty cells in debarred combinations (shown shaded). We consider each possible scenario in turn.

	<i>Pattern of Web-enabling government change:</i>		
<i>Extent of change</i>	Continues/ reinforces NPM	Supersedes NPM	Cuts across NPM
Radical/transformative	1. Digital NPM scenario	2. Digital state paradigm	Infeasible
Slow/partial	4. State residualization	Infeasible	3. Policy mess

1. A ***Digital NPM scenario*** would occur if the rapid development of internet and Web versions of public service transactions was aimed at producing a dramatic displacement of demand from current physical services into electronic substitutes, with the emphasis on substantial cost reductions for standardized public services and major cutbacks in public agencies' personnel numbers. Estimates of the potential scale for displacement of transactions and associated staffing reductions vary from sector, but a significant potential on these lines is already evident in some government-to-business (G2B) services. An overall potential for 50 per cent staffing reductions in liberal democracies public sectors over ten years seems reasonably modest. In Singapore electronic tax filing is estimated to have saved £7 per head of population (CITU, 2000: 59).

As an example of an already almost realized potential on these lines, consider the Next Steps agency which is responsible for producing key business information on corporations and firms in Britain, called Companies House. In research for the UK's National Audit Office we found that in its old, pre-internet model of operation CH was a regulatory agency suffocated by paper. It sent out 4.5 million paper forms a year to businesses for them to complete, and had huge proportions of its 700 staff occupied in simply handling paper. Seventy people worked in its post room alone, just moving cartloads of forms around the office; 150 people were in its examiners section, trying to implement a few basic checks on forms sent in, looking for completeness, consistency and possible mistakes; dozens more people then electronically scanned in the paper forms so that they could be held more manageably on micro-fiche, or re-keyed information from paper forms into databases; and more people again ran the main the agency's revenue generating activity, supplying companies information on fiche to business customers, principally in bulk sales to the 14 large business information companies in the UK. Under the new Companies House strategy for moving to a fully digital environment in operation from late 1998 on, the need for these tasks will disappear, and staff numbers could fall by around 40 per cent. Firms will have to send in their data from the outset on electronic forms (with automatic checks for consistency at the form-filling stage), either via the internet or on disc. Once in the agency the information will drop automatically into the agency's databases, and zero touch technology (ZTT) systems will allow much more extended checking of data quality than in the past. The dissemination of companies information to customers has moved extensively onto the Web, with customers notifying their data needs to the agency, paying for services, and receiving back information electronically. Our research suggested that for the vast majority of central government agencies in the UK (and we would now add many local government ones also) the potential for digital changes to transform their operations is every bit as extensive as it is for Companies House. A possible pathway for the development of Web-enabled government then is for the cost-cutting potential of the regime to be differentially developed, rather than its potentials for enhancing quality of service or opening up government to greater citizen accountability.

Another strong example of web-trends potentially reinforcing NPM patterns concerns the de-professionalisation or (more controversially) 'proletarianization' patterns built up in the last two decades. For instance, both the quasi-market reforms in the British NHS and the creation of 'hospitals enterprises' in France lead to the rise of a new cadre of hospital managers with control over financial, accounting and performance-monitoring arrangements. This change contributed a major push to the de-privileging of doctors in both systems from a professional status giving them resource control without detailed accountability (Griggs, 1999). Within administrative systems where such trends are well-established, the strong 'disintermediation' impacts of the

internet and the Web (and associated technologies, such as Web-enabled call centres) could give greatly enhanced momentum. For instance, in the UK the government has established an organization called 'NHS Direct', which seeks to give people free, direct telephone or Web access to salaried nurses and professionals operating a Web-based call centre and able to give advice on minor complaints and treatment issues. Allied with other initiatives made possible by the Web-basing of NHS medical information records - such as creating drop-in medical centres at train stations or in problem housing estates where salaried doctors can treat people not registered with them as GPs (general practitioners, that is family doctors providing local health care) - such developments have already been identified by the GPs' professional bodies as a major threat to their advisory role and volume of work. Similarly, the development of distance learning (perhaps by both publicly funded agencies and private corporations) could yet powerfully erode the market base of conventional universities, especially those in the public sector. Similar disintermediation trends may also affect a wide range of other professional services.

In this scenario also the push to Web-enable public bureaucracies would give a further strong twist to the contracting out/privatization elements of NPM, as governments look to private finance initiative (PFI) solutions to meet the substantial equipment and capital costs of creating effective intranets and Web-enabled databases. Privatization of service delivery might also be accentuated with a 'joined up governance' provided in a virtual way simply by government-branded but consumer-friendly Web sites, which mask from citizens the involvement of a plethora of private suppliers even in sensitive policy areas. Alternatively governments' current tendencies to want to 'brand' public services as such, and to fine-tune the details of their provision in locally distinctive ways, could reduce in favour of simply purchasing for their citizens pre-defined packages of services provided by large international corporations - the 'MacDonaldization' of public services route (Ritter, 1997; Dunleavy, 1994). Government's role here would devolve onto determining citizens' eligibility for electronic tokens or licenses which would confer appropriate recipient rights with corporate suppliers.

In all the large and long-lived liberal democracies there are important political reasons which may constrain governments from proceeding along an NPM-based internet route. In these countries there is strong resistance to technological trends from some groups, especially small businesses and elderly people, implying that multi-track access pathways will have to be maintained for the foreseeable future. Governments cannot usually *compel* citizens to use electronic access if they choose not to, although they may incentivize them using small discounts for using electronic forms or data acquisition methods. And there are important political sensitivities in the 'digital divide', sharply uneven social access to the internet via personal computers, since PC ownership is heavily class structured in most advanced industrial societies. Thus in the larger and more diverse liberal democracies, exponents of Web-enabling government in an NPM vein look to imminent techno-social developments alone to flatten the social distribution of internet access - such as the diffusion of digital TV with interactive services, the spread of internet-access portable phones and personal organizers, and increasing numbers of public access internet kiosks in banks, post offices, libraries, town halls and internet cafes.

However, in countries that are not yet established as full liberal democracies, notably Singapore and Hong Kong, there are very much reduced political constraints about requiring people to use electronic transactions and about worsening or adding to social inequality. And in a development state perspective there is also considerable scope for strong government action to leverage a broadening of internet access patterns. In its

strongest form, government would aim centralised web-based initiatives at achieving radical increases in competitiveness and market liberalisation - using a public sector Web presence overtly as the catalyst to create an e-based society (Wing Man Shea, 2000; Heeks, 1999). In Singapore, the government has a mission to 'create a sense of urgency in people to adopt new information age technology' (CITU, 2000: 62) which has contributed to Internet penetration rates rising from 16 per cent in November 1999 to 53 per cent in March 2000. The small size and authoritarian governmental structures of Singapore facilitate an especially centralised approach in which citizen participation can be mandated and a 'strong vision' of electronic government (Lawson, 1998) pushed forward, unhindered by dissenting interests. However, there are also some smaller but long-lived liberal democracies (like Finland) which also have 'strong state' traditions which can accommodate governments mandating that enterprises and citizens interact with them in particular ways.

Inherent in the continuation of NPM trends in this scenario is the potential accumulation of substantial costs in terms of damaging citizens' competence and levels of political involvement, and a likely increase in policy complexity as governments' remaining in-house capabilities for undertaking Web administration and Web-enabling hollow out. This scenario would thus repeat the analysis in Figure 1 rather than vary it.

2. By contrast, the *Digital State Paradigm* represents a different track where radical Web-enabled change inside government *replaces* or supercede NPM as the dominant public administration paradigm. In this route the challenges of Web-enabling public bureaucracies add to the forces undermining and to some degree reversing the trend of past NPM reforms. This possibility is the most transformative one. It reflects the experience of liberal democracies already well on the road to major changes, which is, that the logic of Web developments works strongly against the fragmenting tendencies of NPM. Whereas NPM methods placed a premium on single organizations handling discrete service tasks in a financially independent way, with minimal policy integration with partner agencies, the logic of Web development is much more integrative. Internet and Web changes are now one of the strongest forces for 'joined-up government', for a 'holistic' approach to data acquisition and utilization instead of the previously highly compartmentalized and non-communicating data 'silos' of NPM's fragmented departments and agencies.

Current digital government initiatives can take advantage of the qualitatively different nature of Web-based technologies from earlier ICTs. Internet initiatives lend themselves to an evolutionary 'build-and-learn' approach (Dunleavy and Margetts, 1999) which requires a culturally different treatment from the 'big-bang' implementations of large-scale ICT projects during the 1980s and 1990s (Margetts, 1999). Companies leading the field in web-based development use the Web as part of a process of continual organisational learning, making incremental improvements and testing effects on customers - for instance, putting up new Web pages or facilities and taking them off again - which allows continual and rapid customer feedback. Maximising the benefits from this characteristic of the Web as a medium is essential to the digital state approach, entailing agency staff really trying to get close to customers and to use their feedback to re-engineer public services. This stance means a marked cultural change for many government organisations, especially in the UK civil service where senior officials had out-sourced almost all their ICT provision to a small group of large firms (Bastow et al, 2000). With no one with ICT expertise on their management boards, and with Web developments for a long

time 'below the radar' in financial terms, the British civil service began to lag badly behind the international pace of development from 1996 to 2000, contenting itself with devising increasingly bogus ways of meeting political targets given by the Prime Minister - such as counting telephone calls as 'electronic' transactions (Dunleavy and Margetts, 1999). They also developed a 'big-bang' approach to the Web, putting off communicating with their customers or providing internet services until hugely expensive re-equipment processes could be put in train. In late 1999, for instance, the UK agency for paying social security monies to claimants (the Benefits Agency) had only a couple of hundred out of 68,000 staff who could even see the agency's Web site, and was spending around £35,000 a year on its very poor site, out a running-cost budget of £2,400 million. Yet the Benefits Agency was itself a complete NPM creation and had been practising NPM methods for years by this stage. Where senior officials have taken this 'hands-off' approach to ICT development they have repeatedly been caught unawares by Web and internet changes. And they have shown astonishing reluctance to experiment with and learn about citizens' preferences and behaviour. Another UK body heavily associated with NPM trends was the Passport Agency, which became determined to cut costs slightly by contracting out its 'non-core' operations to a private computer corporation, pressing ahead with its scheme in 1998-9 even though it was obviously failing. As the public became uneasy that it would take weeks or months to process their passport applications under the new failing systems, a flood of early applications produced a crisis in the agency in which its phone and mail systems collapsed in mid 1999, requiring it to be rescued by ministers. But even at the height of its problems, when it could not communicate with citizens using any normal route, the agency was updating its Web site only every couple of months - instead of daily.

By contrast to these clear cases of NPM-induced administrative blindness, a digital state paradigm would centre around using Web-based changes to dramatically enhance citizen competences and to radically cut policy complexity. In its most extreme form, this trend means that over time public organisations must 'become their Web site', as one Australian public official observed of the Australian Tax Office. Instead of being a small, extraneous add-on to the agency's main administrative routines and computerized databases, the Web site plus associated interfaces becomes the central operating tool of the whole organization as well as the critical interface between government and society. Making available agency intranets over the Web is used to radically increase citizens' potential for self administration and their ability to monitor and cross-check for themselves what government is supposed to be doing under their mandate. The Australian Tax Office has already opened up its intranet so that interested citizens can access subsets of the same legal databases that public officials use to adjudicate on tax decisions. The US Internal Revenue Service has also committed to making available to citizens access to their own personal tax accounts by 2003, so that they can see the information which the government holds about them and the pattern of assessments made and payments received. In an era when international parcel firms can give sophisticated tracking services to their customers on transactions lasting two or three days at most, it is extraordinary that so few public agencies worldwide have yet realized the enormous citizen demand there is to be able to follow-up via the Web progress on administrative processes that often take weeks or months at present to accomplish - such as grant-bids, or licenses or regulatory applications, appeals against administrative decisions or appeals against taxes levied or decisions made. The creation of a genuinely and radically open government in this way is an essential element of the digital state paradigm, as well of course as making available virtually all non-secret government documents. Freedom of information would be radically

re-thought so that all non-secret elements of information used by governments in policy-making would be held on electronic databases (instead of in paper file registries), and could be retrieved ideally using zero touch technologies again, and accessed at need by citizens via agency Web sites.

The digital state paradigm has similarly radical ambitions in relation to reducing policy complexity. Government Web services would not become a sprawling jungle of incompatible, unindexed and hard-to-understand agency-run Web sites, as in the US federal government currently. Instead, as in Australia and in Singapore and to a lesser degree in Britain, there would be some strong standardizing elements in public Web sites' formats and they would be closely inter-connected and easily searchable using a single central government access point and publicly funded search and finder services. Citizens would be able to, for instance, notify all the public authorities with whom they have relationships of changes in their address or circumstance by sending in a simple form. Government services would be provided in 'joined-up' electronic fashion, with need-based interfaces, electronic communities and specialist sites providing additional views of public provision to the still dominant agency/organization-based views. In relatively short time period the task of providing these integrated views is likely to produce completely different ways of organizing agency provision, with a redrawing of boundaries on much more client-group lines. This trend is already apparent in the UK social security system where the previously integrated benefits payment organization is giving way to separate systems for pensioners and working age people; and the organizational divide separating social security payments from labour market and unemployment services is breaking down fast for working age people.

In the digital state scenario Web-enabling government effectively will mean that much more fundamental re-engineering of government services takes place than ever before. In the NPM era senior civil servants were simply encouraged to reshape their agencies organization while leaving tangled administrative processes and ICT systems unchanged, simply exporting risks by shifting out-dated ICT systems and back-office services to private corporations to handle at one remove. But getting close to customers, in a more and more open government environment where citizens can monitor agencies' performance on individual tasks affecting them personally, will require a wholesale effort to re-imagine services in the most effective possible way and to deliver them seamlessly. Monitoring systems will also allow political leaders, MPs or Congress personnel, and central departments like finance ministries and offices of the prime minister or the president to directly assess agency provision - a radical disintermediation process operating within central or federal governments directly. As the information costs of monitoring reduce, as response times and point of service standards in the private sector are transformed by Web and internet access, so the pressure on agency chiefs for up-to-date performance and efficient policy design and delivery will increase. E-mail communication, Web-site provision and inter-agency access to joined-up databases, together with inter-communicating intranets and cross-agency and cross-tier of government extranets will also cut the information costs for agencies and increase policy transparency to rivals and partners.

3. A **Policy Mess** is the third possible scenario, and the one which is most likely if governments try but fail to promote effectively the digital state paradigm - if change in the public sector is not boosted, or if the prevailing administrative cultures derived from the NPM era or earlier conventional hierarchical patterns serve to greatly degrade, blunt, slow down or distort the push to Web-enabling government. Web development in the

public sector would proceed much more slowly than in the private sector and in civil society at large, and it would be implemented inside the public sector in a cack-handed manner, increasing policy complexity and consequent reductions in citizen competence. A kind of deadlock is possible in which Web-based change occurs too slowly inside the public sector to counteract the deadweight of 'legacy' organizations and ICT systems left from years of NPM change, or pre-NPM arrangements.

In particular, it is already apparent that Web and internet developments require mainline administrators and policy makers to become content providers and to play a central role in the development of ICTs, contradicting the NPM push to contract out all such 'ancillary' functions. The NPM approach to ICTs saw them as discrete 'back office' functions (Margetts, 1999), but the challenges of Web-enabling focus instead on the effective integration of ICT systems into every aspect of an agency's interaction with its clients and partners. For instance, in order to operationalize an electronic form agency staff have to get close to and understand their customers in a much more fundamental way than most have ever previously attempted. Web-based change also requires very close-fitting integration with most agencies' 'legacy' databases and systems, which is difficult to achieve under typical NPM arrangements where ICTs are contracted out to one firm, Web-development to another, and the content providers and policy-setters remain in a maze of different agencies or divisions within the public sector. The logic of Web-enablement is hence to internalize or re-create in-house a closely integrated Web-ICT operation, as in the most successful Web-enabled private corporations. But can any large public agency which has once out-sourced its ICT provision actually recreate that capability? Can NPM-educated cohorts of senior officials even be brought to recognize the conflict between their established methods of working and full-scale Web-enabling? If not, then Web based change will likely become stuck in a no-mans land where ICT managers and providers control what gets done, and senior managers assign the tasks low priority.

Another conflict between Web-based development and NPM could come into play in this scenario. Web-based technologies are qualitatively different from earlier information and communication technologies which were largely based inside organisations, with only minimal interface with the outside world. Web-based technologies offer possibilities for transforming citizen-government relationships, but require a willingness to listen to agency clients that may not be recognized. In addition the method of development is different. While earlier ICTs tended to necessitate undertaking large-scale projects once in a long period (an approach dominated by five or ten year planning horizons and major ICT investments, and accompanying management styles), web-based technologies lend themselves to an evolutionary 'build-and-learn' approach and much more decentralized management.

Similarly, the whole approach fostered by NPM over two decades has tended to concentrate managerial control of organizations in their leadership, and to reduce or remove entirely central state capabilities to over-view or guide how agencies run their internal affairs. A philosophy of 'letting 1000 nettles bloom' has applied in the UK over government Web sites, while in the USA the proliferation of sites has been enormous - with 3,000 Web sites within the Department of Defense alone. There is only a moderately effective organization-finder site at the centre of British government provision, and in the USA a succession of limited and uncomprehensive sites for finding other federal government organizations have been desultorily organized by the White House, the NPR team, the General Services Agency, Fedworld and others - all of them pretty

hopeless for US citizens trying to find what they want. The best list of US federal Web sites is maintained by the library of the State University of Louisiana, but not many people will find their way to it.

The potential for a degraded form of Web development is thus that most aspects of the digital state paradigm happen only partially, happen late and happen inconclusively. Government bureaucracies adapt to the Web and the internet era slowly and incompletely, continuing to lag years or even decades behind private corporations in their internal work processes - still addicted to paper, to seeing people in person, to recording things in filing registries, to not accepting each others' administrative processes and so on. Web and internet access add to the complications of transacting with government for citizens and a pattern of sprawling, uncontrolled Web and intranet provision increases the costs of understanding what is happening inside the public sector for top policy-makers and central agencies.

4. The *State Residualization* scenario is the final possible option, which kicks in if government prove so bad at adapting to the inescapable challenges of the internet and Web era that their failure gives another twist to a spiral of governmental decline. The prospect here is that government could become marginalized from modern society - government organizations will be less accessible and more remote from the vast mass of businesses and prosperous citizens involved in the Web economy, and public administration (even more than it is now) becomes seen as a by-word for primitive organization methods and lagging, expensive organizational technologies. Hence political pressures would mount for the sphere of governmental action to be pared down to the absolute minimum. Instead of providing mainstream services to the vast majority of citizens, government assistance would be concentrated upon those outside the normal economy and least able to communicate using Web-based methods - the old, the poor, the sick and so on. Where government remained involved in large-scale subsidies then there would not even be a need to retain public sector contractors as such. Government partner corporations might deliver all aspects of what current public administration systems do now. For instance, in Britain a subsidy called child benefit is currently paid to all families with children of school age by a government agency using a primitive system of paper benefit books issued by civil servants and redeemed in through post offices, and large back-office databases maintained by private contractors. In a residualized state future, government's role might boil down to paying one contractor to maintain an eligibility list database - and all payments might take the form of just communicating an eligibility token to private corporations who would perhaps undertake the transaction of benefits for almost nothing, such as large foodstore chains anxious to get customers into their stores to receive their benefits, because they would then be likely to spend money in the stores as well. In this kind of case, internet disintermediation may effectively cut out of the loop much of what has long been accepted as government's role.

In broader terms, if government does not keep up with current Web trends, if public agencies become relatively invisible on the Web and e-mail networks compared with private sector and civil society organizations, then government's nodality, its ability to receive information free from societal actors and to broadcast messages which are accorded special attention by them, will radically decrease. But nodality is a very cheap resource for government now and in the future. If nodality resources are depleted or lost completely, then to maintain a static role the state would have to make use of other resources in the NATO2 typology in a bid to compensate. Less nodality thus implies more recourse to authority, to treasure or tax-financed programmes, to

greater bureaucracy - all of them vastly more expensive resources. It is impossible to envisage a political context in which more government intervention, more government spending or more burgeoning government organizations could flow from the public sector demonstrating in conclusive fashion its inability to respond effectively to Web and internet-based change. Far more likely political response would be calls for draconian cuts in the state sector as a whole. Thus for a public sector which wants to survive in a similar form to contemporary provision, responding very poorly to the challenges posed by the internet and the Web is not an open option.

Conclusions

New goods often bring out a rash in people - especially rash utopian or dystopian predictions. Utopians look forward to the improbable resolution of deeply ingrained social problems by quick technological fixes. Dystopians predict the improbable collapse of deeply entrenched social institutions from simple contact with the new products - the shock of the new. In the end things are usually more complex, more boring and less alarming. Social institutions assimilate and absorb the new goods, changing substantially in the process but not transforming or disintegrating utterly. Our standard reaction has become, in the slightly cynical words of REM: 'It's the end of the world as we know it, and I feel fine'.

The root cause for pessimism about how quickly and how adequately government will adapt to the challenge of the Web and internet era is a familiar channel rivalry problem - the employees and managers who make a livelihood out of the old ways of conducting public administration are not going to particularly welcome 'zero touch' technologies that consign their roles to a historical museum. And even if the large government organizations really *want* to push for the achievement of digital government, the chances that they will make a good job of getting there are relatively slim. Culturally, politically, organizationally, historically - the limits in their path are myriad, subtle and close-binding. So (as ever) incompetence and complexity form a large part of the answer to why the current crop of IT utopias are not going to happen.

And yet, for once, the Web era still holds out the promise of genuinely open government (backed by the power of rapid reaction, cost-sharing on-line communities) *at the same time* as more efficient government. The cultural change that the civil services of liberal democracies all need to grasp in the Web era, and yet still find hard to face, is a change towards making their organizational operations visible in detail to each other and to citizens. The ICT technology and organizational know-how is in place around the world at different points that could still allow for a shift to Web-based interactions between the state and civil society that can not only deliver direct gains in social problem-solving, but also boost citizen competencies and reduce institutional and policy complexity at the same time. And the social push for this kind of change is lively, even if only just beginning. So the utopians could yet be partly right, that the Internet will shed more public light on the workings of the state, could help empower 'isocratic administration' by individual people and enterprises, could let civil society steal a march on state bureaucracies. For public administration and public policy studies the trick will be, to help make it so.

Notes

This paper derives from a research project in the ‘Future Governance’ programme, funded by the UK Economic and Social Research Council (ESRC): *Public-private Partnerships in Central Government ICT Systems*, 2000-2002, award no.L216 25 2030, based in the School of Public Policy at University College London. We thank Simon Bastow and Jane Tinkler for their invaluable help.

Contact Details for Authors:

Professor Patrick Dunleavy
Government Department
LSE
Houghton Street
London WC2A 2AE

Tel. 020 79557178

Email. P.Dunleavy@lse.ac.uk

Dr Helen Margetts
School of Public Policy
UCL
29/30 Tavistock Square
London WC1H 9EZ

Tel. 020 76794980

Email. H.Margetts@ucl.ac.uk

Bibliography

- Aucoin, P. (1998) Accountability in Public Management: Making Performance Count, paper presented to the authors' roundtable, Revitalising the Public service, Ottawa, Canadian Centre for Management Development, 12-14th November.
- Barzelay, M. (2000) *The New Public Management: Improving Research and Policy Dialogue* (Berkeley: University of California Press).
- Bastow, S., Dunleavy, P., Margetts, H. and Tinkler, J. 'The Advent of a 'Digital State' and Government-business Relations', paper to the Political Studies Association Conference, LSE, London, 10-13th April 2000.
- Becker, G. (1985) 'Public Policies, Pressure Groups and Dead Weight Costs', *Journal of Public Economics*, vol. 28, no. 2, pp. 329-47.
- Bellamy, C. and Taylor, J. (1998) *Governing in the Information Age* (Buckingham: Open University Press).
- Breton, A. (1999) *Competitive Government* (Cambridge University Press).
- Central IT Unit (CITU) (2000) *Information Age Government: Benchmarking Electronic Service Delivery* (London: CITU).
- Davis, R. (1999), *The Web of Politics: The Internet's Impact on the American Political System* (New York: Oxford University Press).
- Dunleavy, P. (1994) 'The Globalization of Public Services Production: Can Government Be "Best in World"?' *Public Policy and Administration*, vol. 9, no. 2.
- Dunleavy, P. and Hood, C. (1994) *From Old Public Administration to New Public Management* (London: LSE Public Policy Group, working paper series).
- Dunleavy, P. and Margetts, H. (1999) *Government on the Web* (London: National Audit Office).
- Ferdinand, P. (2000) 'The Internet, Democracy and Democratization', *Democratization*, volume 7 no. 1 pp. 1-17.
- The Harvard Policy Group on Network-Enabled Services and Government (2000), *Eight Imperatives for Leaders in a Networked World: Guidelines for the 2000 Election and Beyond*, Cambridge, John F. Kennedy School of Government on www.ieg.ibm.com
- Heeks, R. (eds. 1999) *Reinventing Government in the Information Age: International Practice in IT-Enabled Public Sector Reform* (London: Routledge).
- Heeks, R. and Davies, A. (1999), 'Different Approaches to Information Age Reform' in Heeks, R. (eds) *Reinventing Government in the Information Age: International Practice in IT-Enabled Public Sector Reform* (London: Routledge)
- Hirschman, A. (1970) *Exit, Voice and Loyalty* (Cambridge, Massachusetts: Harvard University Press).
- Holmes, D. (1997) *Virtual Politics: Identity and Community in Cyberspace* (London: Sage).
- Hood, C. (1983) *The Tools of Government* (Macmillan).
- Hood, C. (1985) 'Contemporary Public Management: a New Global Paradigm?', *Public Policy and Administration*, 10: 2, Summer, pp. 104-17.
- Hood, C. (1994) 'Economic Rationalism in Public Management', *Explaining Economic Policy Reversals* (Buckingham: Open University Press).
- Hood, C. (1998) *The Art of the State: Culture, Rhetoric and Public Management* (Oxford: Clarendon Press).
- Hood, C. and Jackson, M. (1991) *Administrative Argument* (Aldershot: Dartmouth).
- Horn, M. (1996) *The Political Economy of Public Administration: Institutional Choice in the Public Sector* (Cambridge University Press).
- Illich, I. (1977) *Limits to Medicine: Medical Nemesis: The Expropriation of Health* (Harmondsworth: Penguin).
- Kraan (1996) *Budgetary Decisions* (Cambridge University Press).
- Lawson, G. (1998) *NetState: Creating Electronic Government* (London: DEMOS).
- Margetts, H. (1997) 'The National Performance Review: A New Humanist Public Management' in A. Massey (ed.) *Globalization and Marketization of Government Services* (London: Macmillan, 1997), pp 47-70.
- Margetts, H. (1999) *Information Technology in Government: Britain and America* (London: Routledge)
- Milgrom, P. and Roberts, J. (1992) *Economics, Organisation and Management* (Englewood Cliffs, NJ: Prentice Hall).

- Peters, G. and Savoie, D. (eds. 1998) *Taking Stock: Assessing Public Sector Reforms* (Montreal and Kingston: Canadian Centre for Management Development and McGill-Queen's University Press).
- Pollitt, C. (1993) *Managerialism and the Public Services* (Oxford: Blackwell), Second edition.
- Pollitt, C. Birchall, J. and Putnam, K. (1998) *Decentralising Public Service Management* (London: Macmillan).
- Pollitt, C. and Bouckaert, G. (2000) *Public Management Reform: A Comparative Analysis* (Oxford: Oxford University Press).
- Savas, E. (1987) *Privatization: the Key to Better Government* (Chatham House, NJ: Chatham House).
- Savas, E. (2000) *Privatization and Public-Private Partnerships* (New York: Chatham House).
- Scott, J. C. (1998) *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press).
- Shea, Wing Man (2000) 'Electronic Government: Government Utilisation of Internet Technologies in Hong Kong and Singapore', dissertation for MSc in Public Administration and Public Policy, August 2000, LSE, London.
- Singapore eGovernment Action Plan on www.ida.gov.sg