

‘Connecting Australian Government’: towards digital-era governance?

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Abstract

This article provides a timely assessment of the impact of digitisation on public service production in Australia. It draws on the findings from a survey of digital thought leaders working at the heart of the change process to explore five key questions: (1) what is driving digital change?; (2) what are the barriers to digital change?; (3) from where does Australia learn about digital change?; (4) where is government acting in Malcolm Turnbull’s terms as an “exemplar” or “catalyst”?; and, (5) what are the characteristics of a high performing technology partnership in the Australian context? Our key finding is that digital change is transforming agencies with significant service delivery and data analytic functions in a radical way. The principle influences on the response of different agencies to digital change is determined by a combination of function, decision-making culture, capability and degree of politicisation (i.e. relevance to the core government agenda). Nonetheless, there is also sufficient evidence to suggest that the essential dynamic of change is such a powerful centrifugal force that even the laggards are unable to resist. We are witnessing a decisive culture shift towards digital era governance in Australia.

Keywords: culture shift, Commonwealth government, digital, governance

‘The crisis takes a much longer time coming than you think, and then happens much faster than you would have thought’ Rudiger Dornbusch.

Introduction

The Australian Public Service (APS) is currently undergoing a historic shift towards the establishment of Digital Era Governance (DEG). The process of change challenges the established ways in which policy is made and public services are delivered, monitored and evaluated. Most significantly, it questions dominant public sector cultures and (sometimes), values and provides evidence of the uneven capacity of departments and agencies in the APS to adapt to new realities. We now live in a digital era, where rapid and disruptive change in societal behaviour and industrial and economic patterns have become the norm. As the Australian Prime Minister Malcolm Turnbull stated in his April 20 2016 address to the Australian Public Service in the Great Hall at Parliament House:

“Digital disruption, greater transparency in data and information, contestability of advice, rising community expectations for fast and personalised government services are just a few of the challenges you face...In this new economy we need Australians to be more innovative, more entrepreneurial and government should be the catalyst...Now, I talk a lot about people being this country's greatest asset because the next boom is the ideas boom...I want the APS to be part of that boom. That's why one of

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the pillars of our innovation agenda is government as an exemplar. I want you to be bold in your thinking. I want you to lead by example.”

But is government prepared to be the catalyst and the exemplar of digital change? The purpose of this article is to explore this question through in-depth interviews with digital thought leaders working at the heart of the change process in Commonwealth government. Two stages of research informed this task. First, at the exploratory stage, we co-designed and processed an on-line survey of the perceptions of digital thought leaders to the critical challenges of digitisation. Second, we used the findings from the scoping survey to shape the questions for a representative sample of 42 elite interviews which were conducted with senior members of the APS and special advisors on digital change (see Table 1). A typology of departments/agencies was designed for this purpose encompassing:

- Departments/agencies most likely to engage in disruptive digital transformation (agencies with digital by default targets of 80% by 2017 e.g. Australian Tax Office and Human Services).
- Departments/agencies least likely to engage in disruptive digital transformation by virtue of their portfolio not requiring significant customer interaction or Big Data analytics (e.g. Attorney Generals, Environment and Energy).
- Departments/agencies likely to require disruptive digital transformation by virtue of the technical nature of their portfolio and the opportunities afforded by Big Data analytics (e.g. CSIRO, GeoScience).
- And, Departments/agencies likely to have embedded norms and values due to longstanding history (e.g. Treasury).

The 42 interviewees were also selected on the basis that they had executive voice i.e. the capacity to influence decision-making and included: 20 Departmental Secretaries, Agency Heads and National Managers; eight Deputy Secretaries; 8 Chief Information Officers; six senior advisors to government on digital/innovation projects and programmes.

The analysis that follows focuses on presenting the qualitative data derived from these interviews and is organised into six parts. Unless otherwise stated, all quotations presented in this article are derived from interviews conducted with APS digital thought leaders for this project. We begin by presenting an overview of what the existing evidence tells us about the 21st century pattern of digital governance in Australia and we use these observations to develop a heuristic that identifies the key features of IT/digital creation in four models of public management which have been deployed by various governments around the world. This will allow us to subsequently map the trajectory of DEG in Australia. The key findings from our survey of digital thought leaders are then presented in response to our five key research questions: (1) what is driving digital change?; (2) what are the barriers to digital change?; (3) from where does Australia learn about digital change?; (4) where is government acting in Malcolm Turnbull’s terms as an “exemplar” or “catalyst”?; and, (5) what are the characteristics of a high performing technology partnership in the Australian context? The article concludes with a series of observations on enhancing the quality of digital governance in Australian Commonwealth Government.

What does the existing evidence tell us about the 21st century pattern of digital governance in Australia?

Digital changes made feasible by internet and web-based technologies and applications are beginning to move to centre stage in many public services around the world. They are increasingly perceived as integral to central government operations in all advanced industrial states, albeit with a ‘culture lag’ compared with certain private sector and civil society adaptations. A review of two decades of global E-governance practice demonstrates that the hitherto dominant paradigm of ‘new public management’ (NPM) commonly practiced in Westminster-style democracies, marginalized technological changes in favour of a managerial emphasis on organizational arrangements and strong corporate leadership. This reflects a long-running tendency of public administration to downgrade technological factors; a view that some academics have argued should be fundamentally reappraised (Dunleavy et al., 2008; Politt, 2011; Margetts and Dunleavy 2013).

The Australian literature reports the same pattern. Australia was an early leader in e-Government (Accenture 2003; Chen et al., 2007; Dunleavy et al., 2008), developing an international reputation that peaked around 2002 (Clift 2002), but since then, progress has been rather mixed. Australia still fares well in the plethora of consultancy rankings of e-Government and was ranked second to South Korea in the most recent UN rankings (UN 2014, p. 15). Moreover, the Australian Tax Office (ATO) and the Department of Human Services (DHS) have remained at the forefront of innovation in E-service delivery. Indeed, the Australian Federal Government was one of the first to set explicit targets for electronic service delivery, with the former Prime Minister John Howard promising in 1997 that by 2001 ‘all appropriate services would be delivered electronically’. The target has now shifted to 80% ‘Digital by Default’ by the end of 2017 for departments and agencies with high levels of citizen interaction (e.g. ATO and DHS). Australia missed the original target by 16 years despite strong internet penetration in Australian society and other fertile opportunity structures for affecting relatively low risk digital change (see Goggin 2005 and Table 1).

Table 1. Device ownership and mobile usage in Australia

- 89% of Australians own a smartphone
- 60% of Australians have access to a tablet
- 34% of Australians do not have a landline
- 61% of Australians would choose their mobile over their TV
- 30% of Australians either own or plan to own a wearable device before the end of 2015
- 51% of Australians are happy to receive offers on their mobile device from brands they like
- 73% of Australians have made a purchase on-line
- 58% of Australians have made a purchase on a smartphone
- 34% of Australians would like to use their phone as a credit card

Source: 2014 AIMIA Mobile Phone Lifestyle Index

However, more ambitious attempts to move beyond NPM-type reforms such as Digital Era Governance 1 (DEG1) interventions that successfully ‘join up’ across departments or tiers of government (defined here as *reintegration*), or attempts to create client focused structures for agencies through “end to end” user focused redesign of services or “digital by default”

electronic delivery of services have, until recently, been minimal outside ATO and DHS. Not to mention DEG2 interventions that embrace the ‘internet of things’ and fully exploit the opportunities afforded by the social web or build strategic policy capability through Big Data analytics or Artificial Intelligence.

This ‘stop-go’ cycle of digitisation is largely attributed to two factors – the ‘contract regime’ of relationships between government departments and private sector computer services providers (seen as vital to a department’s e-government performance) and the absence of a unifying vision to inform change (see Halligan and Moore 2004) such as DEG or EDGE – inherently digital-by-design services co-designed with and for digital natives (Dunleavy et al., 2008). As Dunleavy et al., observe (2008, 24), “Australia’s e-government is characterized by a supportive environment but a variable record, with early success in e-Government being superseded by a lack of central initiatives or ‘joined-up’ strategy”. But is this now changing? Are we currently living through a decisive culture shift towards DEG in Australia?

Table 2 presents a heuristic that organises the key features of IT/digital creation over the past two decades into four models of public management that reflect different trajectories of IT/digital governance deployed in advanced and certain developing societies. We will use this heuristic to map the trajectory of DEG in Australia in the ensuing sections of this article.

Table 2. Four models of bureaucracy and the role of IT/digital technology

Model	Service Architecture	Role of IT/ Digital Technology
New Public Management focus on managerial control through economy, efficiency and effectiveness and assumes <i>a world with secrets</i>	Managerial modernization focusing on disaggregation, competition and incentivization	<i>Peripheral</i> – initial tokenistic IT adoption for better service, but strong oligopolistic IT markets, weak e-Gov, no citizen/consumer role
Digital Era Governance 1 deploys new technology to enhance government’s nodality obligation as the epicentre of society’s information networks	Reintegration through shared services; digitalization of paper/phone-based systems, basic nodality; some system integration and user design	<i>Central</i> – First wave transactional e-services and static Web sites, portals – still at periphery
Digital Era Governance 2 <i>Assumes a world without secrets</i> and embraces the internet of things to enhance nodality	Acceptance of Moore’s Law and cost containment strengthened reintegration; proactive systems integration; more nodality; user design by default	<i>Core</i> – social media, rich media, co-production, cloud/utility IT, early ‘time-stream’ starts
EDGE Essentially Digital Governance <i>Services co-designed with and for digital natives</i>	Inherently digital-by-design services, free or low cost scalable services displacing legacy models. Intelligent centre/devolved delivery architectures; state bureaucracy is the key nodal actor in the societal time-stream	

What is driving digital change across the public services?

When we asked our interviewees if digital changes had now plateaued, or were likely to continue in the next decade at or above the pace of recent years, they unanimously chose the latter. No one in government now expects a ‘quiet life’ on the technology and organizational fronts – a significant change from senior leaders’ expectations in earlier periods (Dunleavy et al., 2008).

The key drivers of digital change programmes now in place tend to differ depending on the agency portfolio (i.e. policy, delivery, regulatory role) and size. As noted above, large departments with over 50,000 citizen interactions per annum now have ‘Digital by Default’ targets and have adopted ‘Digital First’ mentalities. Smaller agencies (depending on their core business) tend to adopt a needs-based approach due to budgetary constraints and are, on the whole, pragmatic compliers. The most frequently mentioned drivers of digital change are listed in Table 3 and discussed below.

Table 3. Most frequently mentioned drivers of change

<i>Turbull-effect and creation of digital governance policy instruments</i>	<i>Public opinion, consumerisation and rising citizen expectations for personalised service provision</i>	<i>Advances in DEG2 technologies create new opportunity structures for innovation (e.g. artificial intelligence, social media and Big Data)</i>
<i>Macro-economic conditions and Moore’s Law</i>	<i>Smaller government pressures</i>	<i>Continuous improvement In services</i>

Macro-economic conditions

All of our respondents identified prevailing macro-economic conditions as a stimulus to digital change. This was variously associated with ‘cost containment’, ‘doing more with less’, the ‘austerity-climate’, ‘getting best value’, achieving ‘productivity gains’, ‘returning the budget to surplus’ or ‘the next logical step after fiscal consolidation’. The majority were of the view that austerity provided fertile conditions for digital change, but that in the short term it also complicated the investments needed to achieve medium to long-term efficiency gains. Most accepted the proposition afforded by Baumol’s relative price effect and Moore’s Law; that over time outputs in high productivity sectors get cheaper to produce (Moore’s Law) and outputs in low productivity sectors get relatively more expensive. Hence, as public services tend to be characterized by low productivity and are labour intensive the relative price of public services rises over time. Digital public service production can potentially reverse this trend because on-line services tend to be two thirds cheaper to deliver than traditional services (Productivity Commission, 2016).

A Turnbull-effect?

‘Yes the ‘Turnbull-effect’ has been huge. Largely because for him achieving innovation through technology is a natural thing’.

'The process has definitely accelerated since he [Turnbull] became Prime Minister but there was an electoral commitment to Digital First in 2013'.

Most respondents also recognized that the pace of digital change had accelerated as a consequence of the emergence of a strong political agenda fostered by Prime Minister Malcolm Turnbull 'who gets technology and the opportunities that it provides for improving problem-solving in a period of fiscal constraint':

'The notion of government as digital exemplar creates a space for the digitally-minded to innovate.'

'Turnbull is a vibe by which people feel empowered to change things'.

A potential drawback of dependence on Prime Ministerial involvement was also mentioned by some observers, namely that in Westminster systems around the world PMs typically accumulate more issues to keep in view the longer they are in office. Maintaining momentum behind digital transformation may thus become progressively more difficult, unless it is successfully institutionalized early on.

A digital culture shift?

At the same time there is also evidence of the need for government to respond to a culture shift in Australian society where increasing numbers of citizens have become 'IT literate' and expect the same quality of transactions with government that they experience with private service providers through their Ipad or smart phone. There were approximately 12.8 million internet subscribers in Australia at the end of June 2015 with only 1.3 million without access (ABS, <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8153.0/>). Consumerisation has heightened citizen expectation for quality on-line service interactions 'any time, any place, anywhere' and this is particularly evident in the uptake of smart phone technology.

Continuous improvement and the acquisition of enabling technologies

Although most of our interviewees acknowledged that this was a period of accelerated change or as one informant put it "Uber change", digital modernisation has been occurring incrementally through a stop-go process of incremental change catalysed by periodic events such as changes in legislation (e.g. 1988 Privacy Act, 1999 Electronic Transactions Act, 2001 Government Procurement Act, 2014 Privacy Act), the acquisition of new enabling technologies (e.g. Artificial Intelligence, Big Data, cloud, smart phones, wireless sensor networks) and the drive for increased productivity. This period is therefore variously defined by our informants as one where digitisation is enabling significant strides in the ways in which data is collected and analysed ('*data is the new oil*', '*data is the new black*'); where insatiable demand for quality services can be met ('*digital is a survival strategy – how else will we cope?*'); and where government can play an important role in facilitating economic development and promoting Australian products ('*digital provides government with a more obvious role to play in facilitating economic development*').

There was, however, a view that the APS requires a period of disruptive change to make more profound alterations in how things get done – '*...we respond really well in a crisis and can innovate very quickly under pressure but not under normal conditions; this says a lot really!*'

Cultural barriers

‘Digital change is not about IT; it goes to the root and branch of what we do and how we do it’.

The cultural barriers – *“the dominant ways we do things around here”* – to digital change remain formidable. These include:

“Government tends to work like a machine rather than a system; digital requires a systems approach because it should be behavioural in character”.

“The separation of the policy elite from delivery means that key expertise is locked out of policy design particularly in relation to service design.”

“The policy elite is dominated by formal economists and their policy values. They have little time for any method that questions their assumptions about how the world works.”

“There is insufficient understanding of what the public values or empathy – the policy elite assumes that citizens want to engage with government. They exaggerate their importance. The majority of citizens want to have as little to do with government as possible.”

There was also reference to the dominance of departmental/agency IT elites that have relatively cohesive values that are antipathetic to conceptions of open data or using the ‘internet of things’.

Executive voice through digital champions is perceived to be an important catalyst to change prompting some insiders to propose a radical review of the traditional CIO role to ensure that agencies have a sound grasp of digital issues. In some smaller, less citizen-centric agencies there is perceived to be an absence of a digital strategic perspective. Digital change is often treated as IT management and a ‘wait and see’ approach drives many digital investment and enabling decisions leading to perceptions of a culture of risk aversion. However, it is also remarkable that IT change is one area where there has been significant toleration of failure in the APS (often viewed as a key trigger to public sector innovation – see Mulgan and Albury, 2003).

“Over the past decade several big IT projects have fallen over and the failure has been tolerated. IT is the one area where we haven’t been risk averse”.

“The inability to access resources to deal with old IT is a problem of leadership. The more politically adept secretaries have not found this to be a problem”.

It is notable that in many agencies digital culture shift has already occurred at the individual rather than the organisational level. Indeed the degree to which a “Digital First” approach has been taken is reflected in whether digital concerns have been mainstreamed into the organisational culture or compartmentalised into a unit or office. In many agencies significant cultural barriers to deep digital change persist. So what makes it so hard to be strategic in digital government? Perceptions oscillate around seven main areas where difficulties arise in strategic thinking and the implementation of digital strategy in government.

- *Commissioning.* Daily operational pressures on both the political and permanent leadership can tend to ‘squeeze’ strategic working out of the system.

- *Analysis.* Strategic analysis can either be too short term and trend-based to help steer the organisation or too far-fetched and improbable to hold the attention of policy-makers.
- *Line of sight.* Strategy work can seem to be exclusively about high-level goals, or it can seem to be purely about a particular set of policies, or it can appear to be a preoccupation with functional strategies or with delivery planning. Line of sight is achieved when there is a clear line between delivery in the community and the high-level goals the organisation has set itself.
- *Product but not enough process.* Strategies that create change within organisations and in the world beyond are the result of a process driven by those who work in the organisation and its stakeholders. Yet too often they are simply documents produced by a small group of consultants which do not create new understanding, still less change.
- *Insufficient challenge.* A common complaint in government and the wider public sector is that public servants are poor innovators. Strategy requires new understanding and a preparedness to do things in new ways, challenging received wisdom. Yet government tends to incentivise compliance and conformity in its employees and restrict challenge.
- *Uncertainty about public value.* Outcomes can be identified using sound analysis, but they also need both the mandate of political leaders and their sustained interest. This means that the organisation as a whole must be capable of focusing on a set of goals and returning to them again and again.
- *Lack of strategic capability.* Prime Ministers and Ministers in Westminster-style democracies regularly bemoan the absence of strategic capability within their organisations often resulting in the increasing use of special advisors and consultants.

Legislative barriers

Our interviewees were divided on the significance of the legislative barriers to change. Several emphasised that a priori legislation was a prerequisite for disruptive change. ‘Tell us once’ (a joined up information management system) is not possible within existing federal privacy laws. A similar problem was viewed to apply to procurement laws and the capacity of agencies to use different digital channels of communication and delivery. However, others argued equally forcefully that the call for legislation was ‘an excuse for inertia’: ‘There is normally significant room for manoeuvre in legislation. If the political intent is there; you can make the change’.

Resource barriers

The key resource barriers to digital change are largely associated with finance (budgeting and investment), and a range of capability problems. Budget rules (e.g. persistence of annual budget cycles) are perceived by some to be ‘a serious impediment to establishing and maintaining the necessary digital infrastructure for transformative change’. Others were of the view that the Department of Finance ‘could be convinced with a sound business case’; whilst others perceived Finance and Treasury as ‘compliance-based organisations with no business understanding’:

‘There is enough space to do it but you have to do it yourself’.
‘We can always find a budget rule to suit us’.

It is noteworthy that the creative centre of the innovation agenda in New South Wales is in the Department of Finance and Innovation; although states do assume a greater delivery role than in Commonwealth agencies. There was a strong consensus of opinion that investment in digital infrastructure needed to be closely aligned with national innovation needs with a small number of informants arguing that Australia required a National Digital Infrastructure Initiative.

There was also a strong perception that the APS does not know its digital workforce capability and by implication its present and future workforce needs:

'We don't have the workforce to deliver on a digital revolution'.

'We do have the skills but they are in short supply'.

The Australian Public Service Commission's *2014-15 State of the Service* report does include data illuminating this issue and in a separate segment of the report compiled by the Digital Transformation Office the capability challenge was acutely defined:

'[T]he majority of respondents indicate that they know their agencies need to make greater progress, but feel under-equipped to meet the challenges of digital transformation. The 2015 agency survey identified a clear gap in capability. This includes the need for comprehensive digital planning across the APS and the need to ensure digital strategies are integrated with broader agency strategic planning'.³

Three perspectives on capability loom large amongst responses to this question. A first view was (as noted above), that the APS does not possess sufficient technology leadership at the Executive level service-wide to strategically manage and lead digital change. Second, some agencies with major IT projects clearly face serious capability constraints in getting skilled staff but agencies with modest IT effort report few difficulties. Capability constraints are reported in the following areas: digital strategists, data scientists and analytics, cyber security, and user experience professionals:

'As soon as we develop the capability it is gobbled up by one of our partners'.

Third, establishing mutually satisfactory technology partnerships is perceived to be a throttle to change.

From where does Australia learn its digital lessons?

'Canberra is very insular; closed to what happens in other countries and industries – a 'we know best' approach tends to dominate which is blatantly absurd'.

'We shamelessly take ideas from wherever we can find them'.

'We tend to cherry pick positive and negative lessons from certain countries and international organisations such as the OECD'.

³ See: <http://stateoftheservice.apsc.gov.au/2015/10/digital-transformation-in-the-aps/> (accessed 29 March 2017).

Most informants were of the view that ‘Australia is currently playing catch-up with its European counterparts’ with regard to digital change but ‘we compare well with the US’. Some argued that the APS was not very open to new ideas but others that internationalisation involves both informal and formal processes of policy learning through professions and international organisations.

The APS tends to learn most of its digital lessons from the Anglophone countries such as the United Kingdom (e.g. digital service delivery), New Zealand (e.g. data integration) and the Banking sector (e.g. data integration and fraud deterrence). Many informants including at least five with a UK background questioned the UK case as a positive exemplar. The countries that were impacted most profoundly by the Global Financial Crisis appear to have embraced digital disruption; in particular, New Zealand and the UK. Estonia was the exception in this regard. Most interviewees referred to the Estonian example as a source of emulation but recognized that it wasn’t perhaps the most exportable example given the countries state of development and different base-line for change. Frequent mention was also made to the Nordic countries and particularly Denmark and the work of the Danish Agency for Science, Technology and Innovation and Mindlab.

Where can we find government acting as an exemplar within Australia?

Many respondents pointed to examples of APS agencies acting as digital exemplars. Table 5 shows that the schemes most nominated cover a range of DEG1 and DEG2 reforms. The size of the agency, its history and core business and its proximity in relationship to the primary government agenda tends to inform the selection of examples. For example, the ATO and the DHS have long histories of engagement in digital innovation due to the large number of transactions they conduct on-line and their potential for joining-up other service areas (ANAO, 2009).

It will be important to monitor and evaluate these interventions carefully to assure proof of concept. Most agencies see significant potential for Artificial Intelligence in enhancing citizen interactions with government and Big Data analytics for improving the quality of real-time decision-making. Table 5 also demonstrates the wide range of innovations currently taking place in these areas.

What technology partnerships are working and why?

The APS has a broad range of technology partners to enhance capability in software and application design, the establishment and management of data centres and government Cloud IT services, data analysis, co-design of new business processes (e.g. shared services), the design of ‘one-stop’ provisions and increasingly ‘ask-once’ processes (see Table 6). As noted above, most interviewees were sceptical about the capability of agencies to build strong and lasting technology partnerships. As one respondent put it: ‘*Many Commonwealth agencies (with some high profile exceptions) do not know how to work collaboratively with digital industries*’ (defined in the broadest sense to also include creative industries and other sources of collaboration and innovation).

Table 5. Most frequently mentioned government exemplars

Area of innovation	Exemplar	Experimental Methods
Digital Era Governance 1 Enablers (digital by default on-line services, reintegration through shared services, user design)	<i>ATO's Roadmap of Change for Tax Professionals, and My Tax; ABS E-census; Department of Employment's Work for the Dole Supervisor App; DHS's MyGov; Service NSW</i>	<i>Co-design with users Small scale experiments</i>
Digital Era Governance 2 Enablers via "The Internet of Things" and high tech defence enablers that fully exploit the opportunities afforded by the social web or build capability in Big Data analytics or Artificial Intelligence	<i>ABS CPI and Freight Movement Projects CSIRO Cotton Research CSIRO Data 61 CSIRO Big Data and Earth Observation delivered via the AuScope Grid GeoScience Remote Sensing project enabled through Data cube technology via Landsat satellites</i>	<i>Drone, satellite and robot technologies Big Data analytics Co-design/partnerships with technical stakeholders via partnerships</i>
Governance enablers (institutional mechanisms to enable and exploit digitisation)	<i>Digital Transformation Office/Agency, NISA Delivery Unit, PM&C Innovation and Transformation Team, Policy Office DSS, Digital Academy, Digital Market place, DFAT's Innovation Xchange, DSS Investment Approach</i>	<i>Big Data analytics Co-design with users RCTs Small scale experiments</i>

Nonetheless, our informants identified similar ingredients of better practice for forging productive technology partnerships. These included a variation of the following qualities: 'clear mission or purpose'; 'common understanding of the problem or task'; 'mutual recognition of interdependence'; 'respect'; 'shared responsibility'; 'joint financial investment'; 'clear ground rules'; 'process transparency and accountability' and 'flexibility'. It was envisaged that these qualities would help to foster trust systems and build problem-solving capability. There was divided opinion as to whether you required a set of common values to underpin the venture. These observations are in keeping with better practice in collaborative governance (see Ansell and 2008; O'Flynn and Wanna 2008).

Parting shots – seeing digital

As we have seen, the principle influences on the response of different agencies to digital change is determined by a combination of its function, decision-making culture, capability and degree of politicisation (i.e. relevance to the core government agenda). It is evident that digital change is transforming agencies with significant service delivery and data analytic functions. Other smaller, non-technical agencies have been less affected. We can organise responses to digital change in the APS around four main types – innovators, pragmatic compliers, critical compliers and laggards. *Innovators* are the earliest adopters, who display

leadership and enthusiasm for implementing digital change. They tend to make mistakes because they are chartering new territory in areas where they often lack technical expertise. *Pragmatic compliers* are the second wave of adopters who emulate the innovators and do only what they need to do. They are essentially adaptive agencies that avoid confrontation with both central coordinating authorities and agency interests. *Critical compliers* are late adopters who reshape their digital policies and programs to fit their own needs and preferences. The level of innovation in these organisations can equal or even surpass the efforts of the innovators. Indeed delay is used as a strategic device to gain comparative advantage. *Laggards* exist outside the gaze of political attention where there is little pressure to respond to mainstream agendas. These are either highly technical portfolios with low tech digital needs or non-technical agencies with low tech policy or regulatory needs. Nonetheless, there is also sufficient evidence to suggest that the essential dynamic of change is such a powerful centrifugal force that even the laggards will be unable to resist. In a period of declining trust in government at all levels digital change affords government a unique historical opportunity to reconnect with the citizen. Hence, as one informant put it: 'The guiding principle of digital change should be whether the level of trust that citizens' have in government increases as a consequence'.

Table 6. Most frequently mentioned technology partnerships

<i>Partner</i>	<i>Function</i>
<i>EMC</i>	<i>Data storage</i>
<i>Accenture</i>	<i>IT consultancy, system integrator</i>
<i>IBM</i>	<i>System integrator</i>
<i>Microsoft</i>	<i>Desktop, Software</i>
<i>Oracle</i>	<i>Enterprise solutions</i>
<i>SAP</i>	<i>Enterprise solutions</i>
<i>Telstra</i>	<i>Communications</i>

Despite its impressive ranking in global league tables, there is still much to be done in the APS to clearly articulate the purpose of digital change and embed it in the hearts and minds of public servants. Once the APS has a strategic digital vision and a set of policies working to achieve that vision, it then needs to look at itself. The implementation of a strategic vision almost always requires change: change in the activities and behaviours of public servants and of the service as a whole, including of budget allocations. If a strategy is designed properly then it will be possible to construct an understanding of plausible potential futures, a desired vision of the future, a set of outcomes that create public value, organisational alignment and allocation of resources throughout the delivery system to support achievement of those outcomes, together with accountability and feedback mechanisms to measure attainment. In combination these can provide 'line of sight': a way for leaders – both political and bureaucratic – to see the links between strategic aims and intent, policy processes and delivery and achievement at the front line – and a way for the front line and citizens to see exactly the same things.

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APPENDIX 1. A list of the organisations interviewed for this project

Commonwealth departments and agencies

Australian Public Service Commission
Attorney-General's Department
Australian Bureau of Statistics
Australian Federal Police
Australian Research Council
Australian Taxation Office
Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Defence Science and Technology Organisation
Department of Defence
Department of Education and Training
Department of Employment
Department of the Environment
Department of Finance
Department of Health
Department of Human Services
Department of Immigration and Border Protection
Department of Industry, Innovation and Science
Department of Social Services
Department of Veterans' Affairs
Department of Prime Minister and Cabinet
Digital Transformation Office
National Transport Commission
Treasury

States and territories

ACT CIO (former)
NSW Department Finance, Services and Innovation
NSW Department of Premier and Cabinet
NSW Education
NSW Health (e-Health)
NSW Treasury

Digital Consultants

Bigpond