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Digital Transformation and the Innovator's Dilemma in Government

An exploration of how a focus on governance better enables innovation and digital transformation in government departments and agencies

Whitepaper

Contents

"Are we best serving ourselves and our customers by attempting to become more innovative, or should we become better at consuming innovation?"

Executive summary

Today, across government and industry, leaders are expected to be more innovative, transform their organisations digitally, and prepare for Industry 4.0 whilst maintaining a robust governance model and minimising risk.

This would appear to be at odds with Clayton Christensen's book, *The Innovator's Dilemma* (1997), which states that an innovator needs to demonstrate a healthy appetite for opportunity risk. Much has changed over the past 20 years, yet the lessons from Christensen's book are even more relevant today, as the pace of technology development quickens.

Like many powerful concepts, successful execution is almost impossible to achieve until enabling technology is invented. So, some twenty years later, it is now possible to safely and effectively consume innovation as part of the digital transformation journey, instead of being compelled to become more innovative.

The question that should be driving today's leaders is, "Are we best serving ourselves and our customers by attempting to become more innovative, or should we become better at consuming innovation?"

In this paper, readers are asked to consider whether a focus on becoming more innovative is best exchanged for a capability to better consume innovation. Paradoxically, the key to effectively consuming innovation is via an enhanced focus on governance and risk management. The lessons from Christensen's book are framed contextually by exploring The Departmental Secretary's Dilemma and how consuming innovation can enable government leaders to better manage sustaining and disruptive technology.

A six-step process is then proposed:

1. Don't try to become more innovative
2. Focus on governance within your technology portfolio
3. Restore decision makers' confidence in the role technology can play
4. Shift your focus from Infrastructure to Operational Technology
5. Design and deliver your first business focussed micro-service; and
6. Consume innovation.

To support these six steps, a facilitation capability being NEC's Digital Transformation Services (NEC DTS), is also introduced.

Finally, this paper asks readers to complete a checklist which categorises their organisation as type 'A' or 'B' as a check-in on their readiness to effectively consume innovation and transform digitally.

Why is innovation great in theory and challenging in practice?

Should government even try and become more innovative?

Innovation, if adopted as a core value, involves the innovative entity demonstrating a healthy appetite for what is known as opportunity risk. The entity also needs to embrace failure in the sense that the innovative organisation needs to, "fail early and fail often". Governing Ministers have an understandable anxiety of being front page news for the wrong reasons and public service stewardship favours reliability, stability and service delivery. Therefore, is it probable, desirable or even possible for government departments and agencies to become more innovative?

Arguably, innovation is best accessed from a vibrant vendor marketplace, yet current procurement practices, involving outsourcing, panels and tendering, have failed to leverage the quantum of technological innovation available whilst simultaneously managing risk. In this model the 'governance layer' is placed on the vendor as opposed to the solution. Tendering processes can stifle innovation through proscription and new approaches are discouraged due to the lack of reference-ability.

Are government organisations better placed to learn how to more effectively consume innovation than become innovative? Further, is the most efficient path to innovation consumption best underwritten via a focus on governance and risk management, two aspects that departments and agencies have as core capabilities?

Why is innovation great in theory and challenging in practice?

The innovator's dilemma

Clayton Christensen published The Innovator's Dilemma in 1997 and with it, disrupted the way leaders thought about technological progress. Apologies to those which have read the book, but it is worthwhile reflecting on the main lessons here.

Lesson #1

There are sustaining and disruptive technologies and innovation works differently for the two

Sustaining technology - involves growing existing technologies by enhancing their performance, mostly through extended functionality or increased capacity.

Disrupting technology - changes the landscape of an entire industry, or sparks a new one altogether, because it solves a problem in an entirely new way or for a new group of people.

As you can imagine, established businesses and market leaders excel when it comes to the first kind. They have realised enormous efficiencies and built up sizeable resources, which make it easy to deliver incremental progress at scale.

However, incumbents often lack imagination and swiftness in technological disruption, irrespective of whether they have initiated it or not.

For example, while it was straight forward for IBM to engineer thinner hard disks and add storage capacity in the 80s, adopting the new 1.5-inch format didn't come so naturally, as long as the 14-inch disks were still selling well.

It is challenging for any organisation to innovate in the absence of a crisis.

Lesson #2

When the resources, processes and values of a company don't match the target market, even the best management doesn't help

The reason a start-up can overtake an industry titan using disruptive technology is that it starts its journey in low-margin niche markets which are often neglected by the incumbent. The target customer's needs are often entirely different to the bulk of the market.

Dominant industry incumbents are all too often slow to serve these customers as they are not efficient to serve at scale. The market leader's culture and capability often result in the following factors being 'rigid':

Resources - anything you can buy, sell, hire or fire.

Processes - patterns of action and communication, both formal and informal.

Values - the criteria by which managers and employees make all organisational decisions.

Market leaders are loaded with resources, but have very hardened processes and a fixed set of values, which rarely match the target market of a start-up.

Money and effort spent on organisational change initiatives is mostly wasted due to established entities being recidivists by their very nature.

Lesson #3

The way market leaders solve the innovator's dilemma is through equipping independent subsidiaries with what they need

So what to do, if you're a leading player in a radically changing market? Christensen suggests to accept the limitations of your organisation's processes and values. It's almost impossible to develop both sustaining and disrupting technology from the common resources, processes and values.

A dominant industry incumbent, developing disruptive technology, may either try to force the new market to grow too fast (1982 was too early for a tablet device), or wait too long. Here's Christensen's answer:

"Found or acquire a subsidiary company with the right values and processes, equip it with the necessary resources, then let it do its thing".

With respect to resources, processes and value, if you're short in two of three factors, use the third to make up for the deficiencies in the other two! When you command significant cash and people, deploy some to a subsidiary that can better satisfy emerging market demands.

This is exactly the approach which Amazon took when it was losing money on retail and web-services were almost non-existent. By the time web services became mainstream, its subsidiary had built up the right processes and values on its own and voilà, Amazon Web Services raked in significant profits from an industry that wasn't previously a core focus.

Why is innovation great in theory and challenging in practice?

The Departmental Secretary's dilemma

As influential as *The Innovator's Dilemma* has been over the past 20 years, it is of little use as a field guide to the Departmental Secretary or Agency CEO grappling with the following challenges:

Machinery of government changes

After an election, a new government often brings with it significant changes to the portfolio of departments and agencies. Moving, merging and splitting departments brings with it a raft of IT related change projects. Basic hygiene IT, such as a departmental website, staff emails and printing, can be challenging to deliver, depending on the extent of the change. Often machinery of government changes are frequent and widespread. This can heavily distract from the provision of new and better services, with the focus returning to keeping the critical or 'survival' services in operation during these periods of change and upheaval.

BAU challenges

This is by far the biggest destroyer of any hope of becoming more innovative or embarking on a successful digital transformation. Most departments and agencies expend the vast majority of IT effort on keeping legacy systems alive and available. Insufficient IT infrastructure and operations (I&O) maturity is the single determining factor of poor innovation and transformation outcomes.

Many government departments and agencies have adopted a version of Christensen's approach through contracting third parties to deliver citizen services via procurement methods such as tendering and supplier panels. Outsourcing of government services is not without its own challenges. Hardly a week goes by without some kind of public funding malfeasance, be it 'pink batts', Registered Training Organisations, child care, or an IT service provider failure such as that recently experienced by Queensland Health, DHS and ABS.

> Often, effort to innovate results in focussing on the transformed state, whereas, many of the challenges arise from a lack of visibility of risks inherent in the current state

Often, this effort to innovate results in an organisation focussing on the transformed state, whereas, many of the challenges arise from a lack of visibility of the latent risks inherent in the current state. To address, NEC's has developed Digital Transformation Services (NEC DTS), which enable Departmental Secretaries and Agency CEO's to shift from a focus being innovative to consuming innovation from a vibrant and engaged vendor marketplace with confidence.

Through a single minded focus on IT governance, departmental and agency innovation is not only possible but a likely dividend.

What does practical innovation offer?

Innovation as a BAU coping strategy (Sustaining Technology)

Every government department or agency has to cope with changes that may include but are not limited to the following:

- Machinery of government changes
- Legislative changes
- Budget constraints
- Policy changes
- Political imperatives; and
- Increased citizen and/or service provider expectations.

If these changes occur faster than the department or agency's ability to absorb through the adoption of sustaining technologies, then it is, by definition, on a downward path to being less and less relevant to Ministers and portfolio constituents.

At the very least, departments and agencies must be able to cope with any and all of these changes faster than they are being generated. This is often referred to as being 'robust' in that the organisation is not unduly compromised by the changes.

What does practical innovation offer?

Government leaders should identify, mitigate and eliminate blockages and friction through the refinement of the governance model and business processes. There is much that sustaining innovation can achieve in this regard. Importantly, an organisation can and should become better at consuming innovation to manage downside risks.

Innovation as a disruption coping strategy (Disrupting Technology)

Government organisations may not be equipped, nor have the opportunity risk appetite, to embark on a program of disruptive innovation. Core to the values and capabilities of any such organisation is a strong focus on governance and risk minimisation.

There is no paradox here. The best protection a government department or agency can develop against external disruptive innovation is a high level of 'I&O maturity', which allows for disruptive changes to either be mitigated or turned to advantage.

Key to this maturity is being both ‘highly orchestrated’ and ‘loosely coupled’ with respect to the technology consumed. The danger when facing externally generated disruptive innovation is in being constrained by legacy systems, entrenched vendor contracts and poor service delivery.

A focus on governance and risk which enables the maturing of I&O capabilities, through a facilitated process, actually makes innovation consumption a reality.

Innovation consumption

Innovation consumption, like many powerful concepts, is almost impossible to execute successfully until enabling technology is invented. So, some twenty years after Christensen’s book was published, it is now possible to safely and effectively consume innovation from a vibrant and relevant marketplace, instead of being compelled to become more innovative.

Step #1 - Don’t try to become more innovative

It is neither necessary nor desirable for government organisations to make any attempt to become more innovative. Lesson #3 from *The Innovator’s Dilemma* reminds us to accept that government departments and agencies are not designed or equipped to manage opportunity risk, the raison d'être for any innovator.

There is also little sense in a government organisation establishing a start-up when the private sector should be able to provide the appropriate environment and mechanisms to enable such innovation to thrive. What is needed is a means of keeping innovation related risk at arm’s length from the government organisation until the moment of consumption.

This is the promise on which current government IT procurement policies and process have not been able to deliver. IT services panels and tendering have struggled to consistently deliver value for money and effectively mitigate risks. It has however, successfully entrenched a class of vendors with hardened processes and sufficient scale, as well as enabling a cabal of advisers. It certainly hasn’t better enabled the consumption of innovation.

Step #2 - Focus on governance within your technology portfolio

Government leaders can, by focussing on their organisation’s core values and competencies, consume innovation as a governance dividend.

By embracing governance, you can consume innovation

Already in existence are globally accepted frameworks for IT governance and risk management. These include ArchiMate® for infrastructure and ITIL for operations. Combined, these frameworks encapsulate ‘I&O maturity’. The challenge with their adoption is that they are frameworks, not standards. This normative, as opposed to criterion referencing leaves any adopting organisation prone to the law of diminishing returns. Too little investment sees sub-optimal risk management and too much results in self-serving processes and controls.

Innovation consumption

Finding the 'Goldilocks' level of investment starts with base-lining 'I&O maturity', followed by applying I&O standards appropriate for the organisation. Through utilising NEC's Digital Transformation Services, an organisation can, within weeks and months comprehensively baseline its 'I&O maturity' by rapidly ingesting artefacts already available into the visualisation tool set. This then enables a government organisation to clearly see the most direct path towards 'I&O maturity' and innovation consumption. A government department or agency can then focus on what it does best, governance and risk management.

Step #3 - Restore decision makers' confidence in the role technology can play

Any word association game, played by decision makers within a department or agency, which mentions 'IT' would most likely cue a string of pejoratives around costs, poor transparency, incalculable risks and outright failures. Primarily, this can be attributed to (1) the incomprehensible nature of the technology landscape to any non-technical decision maker and (2) a poor track record of IT project delivery.

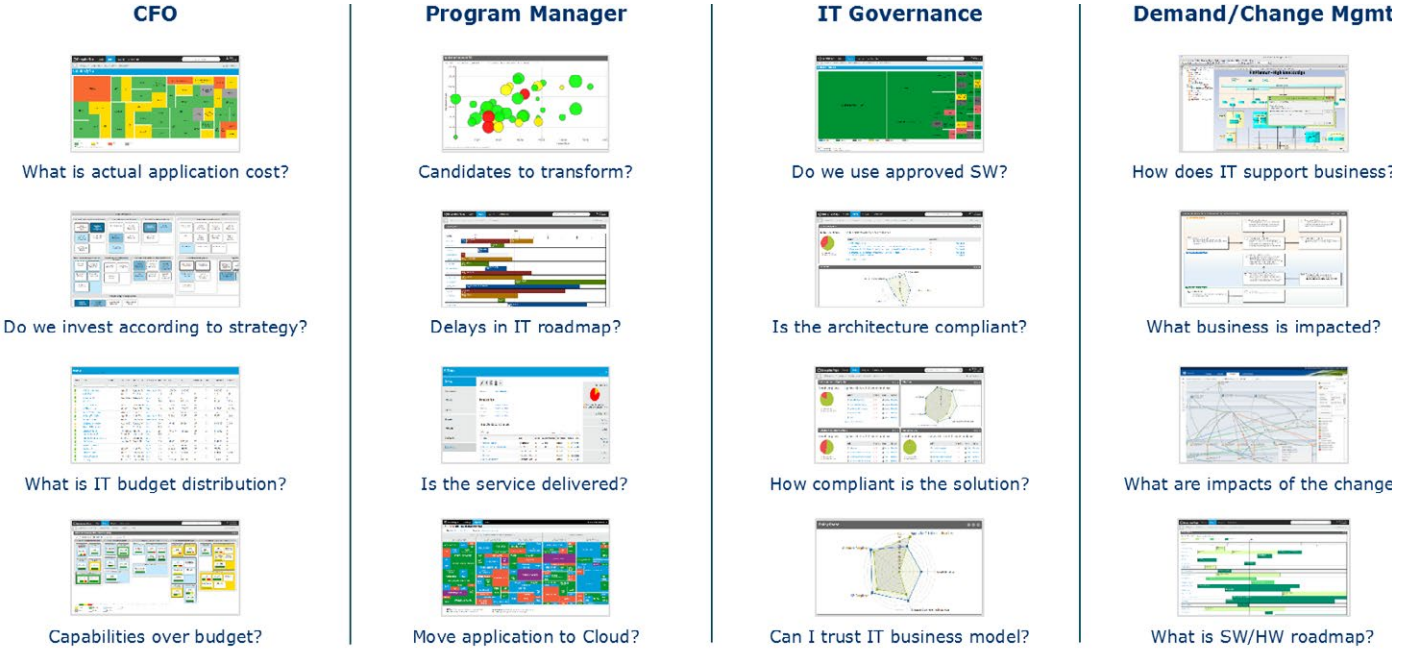
Make the IT landscape comprehensible to both non-tech decision makers and, at arm's length, the vendor marketplace

The current 'gold standard' for technology infrastructure articulation is the presentation of a business and technology 'enterprise map', SparxEA and Abacus come to mind as useful tools. This 'enterprise map' defines the technology landscape in accordance with a framework such as ArchiMate®. As this map is able record the multiple dimensions associated with an IT landscape, it is a much better medium than shoe-horning the landscape into spreadsheets, process flow visualisers and two dimensional charts.

The challenge with an 'enterprise map' is that it is incomprehensible to most executive decision makers. MBA programs do not, and probably shouldn't, teach executives how to interpret ArchiMate® diagrams and CFO's cannot easily assess investment profiles and risks. It is analogous to giving the board of the Australian Chamber Orchestra sheet music and seeking a decision on funding the symphony.

NEC DTS addresses this critical gap through the interpretation of the business-technology landscape captured in the 'enterprise map' into elegant and easily consumable visualisations that have validity, impact and meaning for the executive decision makers.

This improves the confidence of non-technical executive decision makers that the enterprise technology landscape is; (1) truly understood, (2) aligned to the business objectives, (3) managed effectively and efficiently, and (4) worthy of further investment. Equally as important, it readily exposes latent conditions to help wash out implementation risks for the vendor marketplace.



Innovation consumption

Step #4 - Shift your focus from Infrastructure to Operational Technology

It's normal for there to be a number of residual IT projects focused on closing the 'I&O maturity' gap, as a step-in to digital transformation proper. These usually focus on activities such as cloud transition, enterprise service bus implementation and service catalogue establishment.

Less common is concurrent investment in an often neglected capability, Business Architecture. Most organisations try to connect the technology layer to business objectives via organisational constructs, such as administrative groupings of people and resources, as the Business Architecture has not been articulated in a meaningful way.

An ability to meaningfully articulate Business Architecture is the key milestone required to give an organisation permission to talk in terms of Operational Technology (OT). The emphasis of the organisation moves from delivering IT projects to managing a portfolio of business initiatives, enabled by innovation and digital transformation. Each initiative has a clear return on investment and is orchestrated as part of a conservative and risk adverse portfolio that the department or agency never loses control over.

NEC DTS allows for this governance, risk management, control and transparency through 'democratising' the transformational journey, and enabling stakeholders to engage with each other, in a meaningful way, when making decisions thus reaping benefits through access to insights.

Step #5 - Design and deliver your first business focussed micro-service

Another key juncture in an organisation's transformation narrative, is the use of business focussed micro-services. The design and development of these services ideally should commence, after the bulk of the pure IT projects have been eradicated. There are two basic tests which a micro-service should pass - it needs to be; (1) cost effective and, (2) of benefit to sizeable group of end-users.

"Think big, start small and act now" – digital transformation needs confidence and momentum

Successfully delivering the first low-cost business focussed micro-service is the best way to commence any digital transformation journey. If this journey starts with; (1) a sizeable budget, (2) high organisational impact, and (3) low 'I&O maturity', then perhaps reconsider your approach.

Two activities should completed as be a part of the last suite of pure IT projects, being implementation of; (1) an enterprise services bus and (2) a service catalogue. For the avoidance of doubt, implement the services bus first. Access to a scalable services bus to expose business services from legacy systems to end users, rapidly demonstrates the benefits of digital transformation.

Innovation consumption

Step #6 - Consume innovation

Enjoying the benefits of higher levels of I&O maturity, having delivered some initial business micro-services from the legacy architecture and transitioning from IT projects to business initiatives, is a must for the consumption of innovation to be successful.

Widespread innovation consumption now involves appropriately exposing enough strategy, business and I&O information to the vendor marketplace, so that unsolicited proposals can be effectively assessed on merit. NEC DTS enables the comparison of the proposed 'solution plateaus' with the 'as-is plateau', in order to make valid and reliable predictions of feasibility and benefits realisation.

Target Architecture Changes

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Name	Type	Last Approved Stage	Target Stage	Prerequisite	Internal Effort	External Effort	Cost	Completion Status
Calling Appl GUI	Application Interface		Production	☐				Not completed
Call me Back processing	Business Process	Development	Production	☐		200		Not completed
Collecting Client's Cash-Flow...	Business Service	Candidate	Production	☑	N/A	N/A	N/A	Not completed
Collecting Information about ...	Business Service	Candidate	Production	☑	N/A	N/A	N/A	Not completed
Collecting Information about ...	Business Service	Candidate	Production	☐		50		Not completed
Financial Review Service	Business Service	Candidate	Production	☐	10			Not completed
FinPlanner Access from from...	Business Service	Candidate	Production	☐	50			Not completed
FinPlanner Application	Application Compon...	Candidate	Production	☐	40		10000	Not completed
FinPlanner from Internet	Business Service	Candidate	Production	☐		30		Not completed
FinPlanner Presentation Layer	Application Compon...		Production	☐		10		Not completed

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Widespread innovation consumption now involves appropriately exposing enough strategy, business and I&O information to the vendor marketplace

The entire journey may be a bridge too far for some government departments and agencies to contemplate from the outset. With this in mind, NEC DTS can assist in the development of traceable business requirements to inform the vendor marketplace and assist with the qualification of proposals. NEC DTS also has an integrated bi-modal P^3O capability that can be leveraged to:

- Replace or enhance an organisation's PMO
- Manage the portfolio of IT and OT initiatives
- Govern vendors
- Orchestrate complex solutions from multiple vendors
- Track and manage the health of the digital transformational journey; and
- Manage governance and risks at the portfolio level.

This approach effectively shifts the governance focus from the vendor to the solution, and enables an organisation to source and consume innovation more widely. For example, some services and solutions may be better consumed from the innovative micro-business and SME market. NEC DTS effectively places a governance and assurance 'wrapper' around each and every solution to help manage risk. This is far more valid and effective than trying to govern vendors when consuming innovation and driving digital transformation.

Conclusion

Picture two government organisations:

Department A	Department B
☐ Low levels of (or cannot quantify) 'I&O maturity'	☐ High levels of 'I&O maturity'
☐ Executive decision makers that are suspicious of IT spend and activities	☐ Executive decision makers that are engaged and understand the IT investments and costs per business capabilities
☐ A CIO that can't articulate the technology landscape in a meaningful way to executive decision makers	☐ Executive decision makers that truly understand the business-technical landscape
☐ Operational managers that have recourse to 'shadow IT' workarounds	☐ Operational managers with ownership of the enabling technology which supports their objectives
☐ Applications do not exist in an orchestrated network (or aren't connected at all)	☐ A narrative that is focussed on business services and customer outcomes/experiences
☐ A hybrid ecosystem of in-house, contractors and outsourced service providers that evolved over a number of years to the point of entrenchment	☐ Applications that exist within a seamless orchestrated network and can be swapped out as a BAU activity
☐ A narrative that is trapped in the infrastructure or application layer	☐ Confidence to undertake business transformation initiatives without external 'advice'
☐ A tier-one or tier-two Consulting firm as an 'adviser'	☐ Access to a broad marketplace of relevant vendors that have enterprise landscape insights so as not to price in contingency risks
☐ Vendors that habitually price in contingency risks to cater for inevitable latent conditions (or an entrenched vendor that is the only one that understands the environment)	☐ An emerging track record of delivering business services from legacy systems and the current hybrid ecosystem at low cost and high impact
☐ A big budget multi-year Digital Transformation initiative with a start and an end date	☐ An orchestrated portfolio of business transformation initiatives where each initiative is supported by a business sponsor and has its own ROI and benefits realisation

Conclusion

Through the consumption of NEC DTS, organisations can embark on the journey to becoming ‘type-B’ organisations within weeks and realise sizeable benefits within months. The costs and risks of remaining a ‘type-A’ organisation are no longer sustainable or necessary.

Christensen’s *The Innovator’s Dilemma* is as relevant today as it was 20 years ago. There is no need for government departments and agencies to strive to become more innovative. What’s now different is technology has matured to the point where an organisation can safely consume innovation, by focussing on governance and risk management, enabling rapid and sustainable digital transformation.

For more information, visit au.nec.com, email contactus@nec.com.au or call 131 632

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