THE UNIVERSITY OF SYDNEY

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Building a National consensus: Why Customer Stewardship matters

Policy Outlook Paper No. 4

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Executive summary

Customer-led infrastructure is a simple acknowledgment that what customers care about is not the infrastructure as a physical asset, but the services delivered to them using that infrastructure.

The role of the customer in infrastructure is increasingly becoming centre stage. Technology is empowering not only the customer voice through social media; new contestants are offering data enhanced products and services that are disrupting traditional models. This is helping to rapidly dismiss old assumptions that infrastructure users are passive and homogeneous, as opposed to being dynamic and highly differentiated customers.

While intuitively appealing to stakeholders, the ways and means of making customer-led infrastructure a universal working reality for the sector are unclear. This situation does not reflect stagnation or indifference to new initiatives; instead this Policy Outlook Paper has identified a rich diversity of practice, outcomes and maturity across all sectors of infrastructure in Australia.

Policymakers and industry in Australia continue to wrestle with the best way to proceed. On the one hand it is acknowledged more market efficiency is needed in infrastructure, while on the other there are calls for more government intervention, with national project lists based on bureaucratic processes that are accompanied with claims of market failure demanding even more public intervention.

Privatisation, corporatisation and more recently asset recycling continue to attract policy and investment experts from around the world who come to learn from Australia's infrastructure experience.

It is imperative Australia continues to push the boundaries of reform and performance for infrastructure.

The next frontier of reform and transformation, however, is already here: namely the centrality of customers and the creation of infrastructure markets.

There appears to be a heightened political sensitivity to markets and private capital, especially in respect of Australia's future energy security and building new infrastructure, as for example with Western Sydney airport, Snowy 2.0 and the National Broadband Network. While their full costs are still unfolding, customers and markets should remain an important means to efficiently meet Australia's future infrastructure needs. They are both critical to and a necessary enabler of customer-led infrastructure.

The nation has been, and continues to be, well served by markets. However, many of these markets are outside the infrastructure sector.

Image courtesy of Transport for NSW.

Good market design is urgently needed in infrastructure to act as a catalyst for customer-led infrastructure.

For example, when Australia floated the Australian dollar in 1983 there was a complete and unwavering commitment to the foreign exchange market. That included abandoning formal and informal channels to fiddle at the edges of the foreign exchange market. Quality and enduring institutional arrangements were put in place to ensure its integrity in good times and in bad.

This is the same standard of governance that must apply to all the markets that make up infrastructure.

For that to happen, infrastructure markets demand consistency with rules and protocols that govern them from the buying and selling of assets. Governments can play a pivotal role in their settings and ongoing integrity as they move towards achieving reliable, responsible and efficient infrastructure.

Good market design is urgently needed in infrastructure to act as a catalyst for customer-led infrastructure.

Setting clear objectives centred around long-term customer outcomes, then prescribing the consequences to market actors if they are not met, is where governments can do their best in respect of their own procurement. This is the language of performance, success and partnership with private sector.

The transition from long-term stewardship of assets to the stewardship of the infrastructure customer is the subject of this Policy Outlook Paper.

When customer-led infrastructure is a reality, the nation is more likely to be better served by infrastructure solutions that are timely, scaled and feasible.

That means the nation will be better able to more quickly translate its major projects into tangible benefits for customers, community and business. This is as it were the alchemy that underpins long-term success for all customers and stakeholders in infrastructure.

Customer stewardship

Customer stewardship is the principle focus of this Policy Outlook Paper because it provides a pathway for greater effectiveness in translating dollars invested into positive long-term economic and social impact. It is the necessary scaffolding that every infrastructure entity should adopt as it experiments, designs and implements customer-led initiatives in the infrastructure sector.

Put simply, customer stewardship is the collective management principles and practices that focus on delivering quality long-term customer outcomes.

Opening up new pathways for enhanced economic performance and social impact is the long game for customer stewardship. That is, a future based on relationships, reciprocity and participation first. It is also a recognition that infrastructure cannot just rely on past management and regulatory practices limited to cost cutting, rate of return caps and efficiency drives with a 'take it, or leave it' customer philosophy.

Customer stewardship is discussed as a framework in Chapter 2. There are ten principles presented and examined; they will serve as a preliminary framework for direct consultation with infrastructure entities across the value chain.

Strengthening the chain of responsibility, accountability and transparency for long-term customer outcomes is a key motivation for this initiative.

The customer stewardship framework is intended to invigorate a positive and forward-looking transformation agenda so that infrastructure owners and operators can more effectively manage its future in partnership with customers and stakeholders.

Australia must be ambitious about a future where customers and service providers exchange information, understand needs and preferences and are motivated to meet them. It is also important that this occurs without the need for intrusive government intervention that can be costly to implement, could be ineffective at creating good long-term outcomes and that can weaken the customer's leadership role.

National exemplars

Australia has the benefit of a significant cohort of excellent infrastructure providers that are practically demonstrating good customer stewardship.

Chapter 3 details eight national exemplars. Together they provide an important reference point in better understanding the community of practice for customer stewardship, and where the industry can evolve based on these examples of excellence that come from both the public and private sectors.

The 2017 customer stewardship national exemplars are:

- Sydney Airport
- Transport for NSW
- Transurban
- South East Water
- Port of Brisbane
- EastLink
- EnergyAustralia
- VicRoads

All the exemplars are a rich textural mix of innovation and diverse experience in shaping and partnering with the customer and stakeholder. It is apparent from the exemplars that technology, data and analytics are evolving as the new pivot for the future of infrastructure and the capability of choice for meeting the needs and preferences of customers and stakeholders.

Many exemplars are using data and software as a new layer of infrastructure to create value, which manifests as greater flexibility in service delivery despite its reliance on fixed physical assets. In so doing it reduces risk and corrects information asymmetries to improve operational flow, and expands opportunities to make better use of existing infrastructure. It uses systems thinking that naturally extends beyond the traditional boundaries of an organisation to create and shape better supply chains and even ecosystems of service.

A collateral benefit of these initiatives has been the way these layers of intelligence are reducing the need for costly and disruptive capital expenditures to expand existing and/or build new infrastructure.

The exemplars are illuminating a new pathway for infrastructure development that is less capital intensive, but rich in partnership and intelligent use of data with the customer.

A future centred on people and relationships is what customer stewardship can do for infrastructure.

Consensus building

Peter Drucker has been attributed with saying 'if you can't measure it, you can't manage it'.

Chapter 4 discusses how the customer stewardship framework can be developed to help guide and embed a national consensus for customer-led infrastructure.

Customer service has the potential to help match infrastructure to other areas of the economy where services offered make sense, are at a minimum fit for purpose and, in many circumstances, compelling to the point that customers are willing to pay for their full cost of delivery. It will be essential, however, to ensure there are safeguards for social inclusion and balancing the customer needs and rights with stakeholders.

In the case of infrastructure, a great deal of attention has been devoted to the design and execution of major projects. But this effort too often does not benefit from clear objectives in terms of the problem they are seeking to fix, nor long-term indicators to measure success.

Engineers have been very diligent with the technical oversight of the physical infrastructure, and financiers with the risk and reliability of its performance. However, in this environment of monitoring and compliance there is surprisingly little to inform whether those charged with managing infrastructure are engaging with and adapting the assets and services over time to meet the changing needs of existing and new customers.

In fact the infrastructure sector has been missing the necessary information and analytical tools that can help stakeholders assess the extent to which an asset owner/operator is capable and delivering on customer stewardship.

To what extent is it possible to establish a public information tool that informs investors, regulators, policymakers and community stakeholders as to the quality of institutional arrangements to support customer stewardship? This information is materially important to the formation of infrastructure markets.

Chapter 4 sets out the terms of reference and the industry and community consultation process to activate the customer stewardship framework across the infrastructure sector.

Readying infrastructure for a dynamic and disruptive future will not be achieved with yet more of the same practices of the past 100 years. While these have served the nation well, significant technological and social change demand a new Australian way.

While there is nothing new about customers and stewardship in other areas of the economy, there is a very strong case for it to be applied now with greater rigour and intensity to infrastructure.

Customer stewardship is a fundamental reform and a catalyst for cultural change centred on people and relationships. Australia can rely on this to help it navigate the future with greater ambition and conviction to service first.

“Customer stewardship can ensure better services and help resist the expensive build-first mentality of the past.”

Garry Bowditch
Better Infrastructure Initiative

Chapter 1
Introduction

From its inception, the Better Infrastructure Initiative has championed the notion of customer-led infrastructure as the cornerstone for a new reform agenda for policymakers, investors and asset operators. Knowing who the customer is, what they expect and how to please them is evolving in a highly dynamic environment that is rich in challenges and opportunities.

Customer-led infrastructure is a simple acknowledgment that what customers care about is not the infrastructure as a physical asset – but the services, which are delivered to them using that infrastructure.

The customer's role in infrastructure is increasingly taking centre stage. Technology is empowering not only the customer voice through social media; new contestants are offering data enhanced products and services that are disrupting traditional models. This is helping to more rapidly dismiss old assumptions that infrastructure users are passive and homogeneous, as opposed to being dynamic and highly differentiated customers.

Finding the right path for transition is challenging for many infrastructure service providers. Although diligent engineering, technical design and maintenance of assets are obviously still important and critical, they are quickly emerging as not being enough.

The transition from long-term stewardship of the asset to the stewardship of the infrastructure customer is the subject of this Policy Outlook Paper.

Big picture, bigger outcomes

Not surprisingly, infrastructure customers are no different from customers in department stores, online customers with Amazon and app-driven customers with rideshare platforms such as Uber.

In fact they are the same people.

The infrastructure customer understands what is great service because they interact and experience it every day of their lives.

Important progress is being made in Australia towards a better deal for the infrastructure customer that will benefit all stakeholders and the nation in the long term.

Strengthening the focus on customers is an important and necessary building block to help accelerate the power of the customer in guiding and disciplining the nation's infrastructure capital and operational expenditure.

When customer-led infrastructure is a reality, Australia is more likely to be better served by infrastructure solutions that are timely, scaled and feasible.

That means the nation will be better able to more quickly translate its major projects into tangible benefits for customers, community and business.

Too often the connection to the final customer is tenuous, and taking account of their current and future expectations difficult. As a result, the customer can be relegated to more of an abstraction in the high intensity environment of delivering a major project.

Customer-led infrastructure, as both a concept and as a guiding light for the national reform agenda, has been in development for the past couple of years. The reasoning and issues that have led to its development are documented through the Better Infrastructure Initiative's Policy Outlook Papers 1 through 3.

What is customer stewardship?

Infrastructure has not always had the benefit of a strong customer-centred culture.

Customer stewardship is fundamental to the future of infrastructure, because without it an absence of both discipline and purpose to guide the capital and operational spending will prevail. Left unchecked, this would not be conducive to building community and customer confidence and trust.

Peter Block (1993) defined stewardship as:

> *...the set of principles and practices that have the potential to make dramatic changes in the governance of our institutions. It is concerned with creating a way of governing ourselves that creates a strong sense of ownership and responsibility for outcomes at every level of the organization. It is a buck that stops everywhere. It means having more of a partnership with customers and creating self-reliance on the part of all who are touched by the institution. It says that the answer to economic problems is not reduced costs or better funding; it is to focus on relationships, reciprocity, and participation first.*[1]

Customer stewardship for the purposes of this Policy Outlook Paper is informed and inspired by Block[2] and we would simply express it as: the collective management principles and practices that focus on long-term customer outcomes.

Unless customer stewardship is embedded into every infrastructure organisation, regulatory agency and contractual instrument associated with them, its absence will almost certainly contribute to systemic and poor customer service that will be increasingly expensive to deliver.

Lighting the way

Good customer stewardship and its continuous improvement is not achieved by accident, nor can it be served by only focusing on the short term.

Adaptation to new technology, shifts in population structure and higher incomes are all drivers of change in the way the community and customers interact with, and set expectations for current and future service requirements.

Despite the historical importance of infrastructure to our predecessors, the needs, dependency on and expectations modern Australians have of their infrastructure are of an entirely different order of magnitude.

Today every aspect of the modern built environment has a profound interdependency with the broader infrastructure network.

As population densities in cities and regional centres increase, buildings are becoming increasingly more technologically complex and requiring specialist energy, telecommunications, water and waste management. Combined with the transport needs of their occupants, the quality of amenity, liveability and economic viability are all heavily dependent on these many interfaces with the broader infrastructure system working consistently and efficiently.

In fact, these interdependencies are not only critical to the performance of business and functioning of communities, they are also relied upon to sustain life and protect the nation's most vulnerable.

Infrastructure service delivery is becoming increasingly more complex and multifaceted. Especially as customer contacts proliferate and grow more unstructured through, for example, social media, and take place outside the sponsored channels or traditional boundaries in, for example, social media and digitally-based information delivery.

Customer care key performance indicators (KPIs) can be fixed in time and may not respond dynamically to the changing needs of customers. This can compel management and staff to a set of strict rules and compliance that are less relevant to customer and stakeholder expectations. KPIs can help buttress short-term performance but it is more important they should also be regularly calibrated so they are relevant to the customer's changing needs and expectations.

Customer stewardship as discussed in this Policy Outlook Paper, is asserting a higher order of performance and adaptation, where the infrastructure asset owner and operator is more vested in customer outcomes over the longer term.

Setting up a more effective signalling mechanism between customers and asset owners/operators invites an important new discipline to infrastructure.

It has been argued in previous the Better Infrastructure Initiative Policy Outlook Papers that Australia is in need of more information (public and private) to inform decisions about the best way of meeting the demand for infrastructure.

Building new infrastructure assets to meet demand, while necessary at times, can also be costly and disruptive. An over-reliance on this approach can distort investment decisions so that policymakers overlook the vast opportunities of renovating existing assets.

Superior cost-benefit ratios associated with better use of existing infrastructure are well documented,[3] and customer stewardship is seeking to add greater clarity to do this.

For example, having more contestability in the provision of a deep and comprehensive layer of software that extracts more from the existing infrastructure could greatly increase economic productivity and growth.

Establishing a stronger focus on customers can be helped through greater transparency and access to data, and software to make sense of it.

The customer stewardship framework for infrastructure detailed in Chapter 2 demands much more transparency (including open data) to inform better investment decision-making across stakeholder groups.

This more encompassing approach to customers is a necessary new benchmark as infrastructure services are more interdependent than ever on adjacent assets and services. It is also the case traditional boundaries of infrastructure entities are no longer enough to deliver customer outcomes consistently and effectively over time.

There is a need for a better guiding light to help navigate and shift the field of vision of infrastructure entities so they can act, not only to improve their own situation, but the ecosystem that they rely upon.

For example, a focus on actively managing sustainability and minimising energy and carbon consumption resulted in a new tunnel ventilation system for a toll road. The new system can respond to the volume of traffic travelling through the tunnels, as well as the vehicle mix, such as the increasing proportions of vehicles with hybrid electric/combustion drivetrains and battery-powered electric vehicles, which will generate less pollutants and reduce ventilation requirements. This has not only transformed the infrastructure's long-term energy and carbon costs, it has also adapted it so it can respond to future changes in the vehicle fleet and will benefit from the emergence of electric vehicles (see Chapter 3, Australia's 2017 Exemplars: lighting the way).

This will be a long-term change involving culture, capabilities, human capital and leadership.

Who is the infrastructure customer?

It could be argued that infrastructure is so essential to the fabric of the economy and society that the question 'who is the customer?' is simply redundant.

That is because for it to be successful, infrastructure owners and managers should seek to treat everyone as their customers. While that may seem to be unwieldy, there is some truth to it.

A mark of distinction for successful infrastructure is that it delivers far more profound benefits than just good customer service.

Infrastructure that is doing its job to the fullest extent is also an agent of change; rich in externalities that help lift the performance of economic and social activity of a precinct, city, and even the national economy. Its reach is well beyond the physical boundaries of a road, school, hospital, water or energy system.

If Australia is to extract the full long-term benefits of its infrastructure investment, then it must have a stronger framework so that all individual agencies (public and private) have a shared commitment to the betterment of the system (network) of infrastructure, not just the individual asset or entity.

Whether it is private capital and its appointed operators, or government agencies delivering infrastructure services, there is a need to embrace a wider definition of customer, rather than a narrow black letter interpretation of a concession deed.

Good customer stewardship in infrastructure demands a coherent approach to managing the fact that customers and community stakeholders come with very different perspectives and expectations. The twist for infrastructure that is potentially more apparent than in other sectors is that the customer and community stakeholder are more than likely to be the same people.

For example, road customers obviously want safe, reliable and quick transit times, but will not want these assets to encroach on their homes.

It is therefore important that customer stewardship can evidence the necessary processes, mechanisms and protocols to effect resolutions to these conflicts that are emerging more readily as space and competition for it intensifies.

The question of who is the infrastructure customer might seem to be reasonably clear-cut in the case of entities with retail services, such as public transport, energy and water utilities. That is because the infrastructure provider has a direct contractual relationship with consumers to deliver services, but of course their responsibilities do not end there. To a large extent, the efficacy of delivery of services to customers can be monitored and assessed, and also balanced in respect of the broader stakeholder client group.

Infrastructure also has a very large and complex web of assets and operators that mainly provide wholesale services to other infrastructure retailers. These include landlord ports, electricity generation, distribution and transmission, telecoms infrastructure, such as mobile telephone towers, and fixed-line broadband networks, including the National Broadband Network.

Unlike many of the retail infrastructure entities that operate in more competitive settings, many wholesale infrastructure entities are network-based with highly monopolistic market characteristics.

It is a given reality that the adequacy, pricing and quality of the infrastructure services that wholesale infrastructure owners provide can and does have a fundamental impact on the quality and value for money for the final customer.

Governments, regulators and wholesale infrastructure owners have sought to manage the flow-through effects of wholesale services to infrastructure retailers with varied results.

The customer stewardship principles are intended to tighten the connections and quality of collaboration between an entity's decisions to engage their customers and the betterment of the ecosystem and stakeholder that make it up.

Other industries have achieved this to considerable effect, such as the Rolls Royce jet engine 'Power by the Hour' that reshaped the entire supply chain to the final customer needs around 'on demand jet thrust' for airlines. (See Policy Outlook Paper No.1, pp. 18–19 for details of this case example.)

Privilege to serve

Organisations that have been given the privilege of ownership and custodianship of infrastructure must continue rising to the challenge that good customer stewardship can help outperform those that choose the short-term narrow pursuit of advantage.

There is evidence of impressive progress with reform and extending the institutional capacity of organisations. While that is encouraging, this Policy Outlook Paper will detail a select few organisations that are advancing with customer stewardship and can serve as an industry exemplar in specific areas.

An exemplar is intended to inspire and challenge others to accelerate the change. There is no doubt that some firms and areas of government are extending themselves and achieving impressive results. A variety of industry exemplars are featured in Chapter 3.

The infrastructure sector is evolving in its relationship with customers, such that expectations are escalating, industry boundaries are blurring and disruption is the new normal. As a result, much more is being done, and much more needs to be done in aligning and establishing stewardship principles not just in front-line entities but also with the entire supply and regulatory chain of infrastructure.

While it is encouraging to see Australian infrastructure entities demonstrate excellence in customer stewardship, there is a risk that policymakers are not doing enough to strengthen the regulatory and contractual arrangements for its further propagation.

Long-term customer stewardship of the infrastructure system is fundamental to its future success, so that it can adapt, be flexible and serve as a catalyst to security, growth and prosperity. Customer stewardship is about seeking to strike a better balance by improving the performance of any single infrastructure entity with the enhancement of the broader networks on which it relies and to which it belongs. When this is present, we can expect a higher likelihood of infrastructure that is more productive, inviting less risk and better financial performance.

This Policy Outlook Paper will set out why further reform and cultural change is needed, and how there is a strong case for building a national consensus for enhanced customer stewardship in infrastructure.

A mark of distinction for successful infrastructure is that it delivers far more profound benefits than just good customer service.

Chapter 2
Customer stewardship

This chapter introduces the customer stewardship framework and its ten constituent principles for infrastructure. They are preliminary and will be further developed consultatively and iteratively with industry and government, with the aim of developing consensus on the best way to deliver greater transparency in the sector that supports customer-led infrastructure.

The principles that make up the customer stewardship framework have been developed over the past two years based on the Better Infrastructure Initiative's applied research and thought leadership program with government and industry.[4]

Our objective with the customer stewardship framework is to stimulate a positive and forward looking conversation with the infrastructure sector and all its stakeholders. This is about how to better understand and adapt to the rapidly changing expectations and requirements of customers.

We expect that customer stewardship can support policymakers and infrastructure asset owners/ operators to have a much clearer understanding of customer outcomes, aligning with better capital and recurrent expenditure decision-making.

It is important the framework has the full benefit of extensive consultation so it is informed by the diversity of practices, issues and impediments that exist across this vast sector. Accordingly, the framework is presented as preliminary while it is has the benefit of review and input from a wide range of stakeholders in infrastructure.

The Better Infrastructure Initiative has already engaged in very helpful and constructive consultations in August 2017 with over 20 leading infrastructure entities in private, government and not-for-profit sectors. This process provided a finer resolution of detail about infrastructure entities' customer stewardship practices and processes. It was from this consultation that the exemplar case examples were drawn, and each organisation contributed to its preparation with relevant information and facts.

The Bureau of Infrastructure Transport and Regional Economics provides an excellent summary of the state of play of measuring infrastructure performance and customer satisfaction in its recent research report.[5] This has helped shape the customer stewardship framework discussed in this chapter.

It is imperative, however, that the industry and its customers and stakeholders have the fullest opportunities to debate and inform the principles so they are fit for purpose, practical to implement and credible to all. This will be discussed in Chapter 4.

As the industry steps up its endeavours with respect to customer stewardship practices, there may be a need to enhance the scope and composition of the customer stewardship principles as better practice pushes new boundaries.

The principles

Figure 1 sets out a high-level summary of the preliminary ten principles of the Better Infrastructure Initiative's customer stewardship framework.

The first five principles can be summarised as being more concerned with the short-term and transactional nature of dealing with customers and stakeholders.

That is, they focus on how an infrastructure service provider is delivering customer stewardship day-to-day. Whereas the latter five are more broadly concerned with long-term considerations, and aim to assess how well the infrastructure service provider is preparing the infrastructure asset for the future.

Each principle is discussed below and they are intended to work together and strengthen the chain of responsibility across the different dimensions that make up customer stewardship. Table 1 provides a summary of the customer stewardship principles' desired impacts.

Figure 1: Customer Stewardship framework: ten working principles

Source: Better Infrastructure Initiative, John Grill Centre for Project Leadership

Principle 1: Rights and fairness

All customers are entitled to know and understand their rights to access, service quality and compensation for faulty and/or non-performance.

Infrastructure service providers should set out clearly the rights of customers and how they can enforce these rights.

There are a number of mechanisms that infrastructure service entities may use to set out customer rights, including customer service charters.

For example, better practice consists of service providers that:

- set out customer rights clearly in an easily identifiable format
- establish how a customer may enforce their rights
- are transparent in reporting publicly on performance against established standards
- assess where possible the degree to which it is acting within the spirit of the law, the extent to which customers are paying a fair price for consumption of the infrastructure service, and how financial inclusion is managed
- reveal the degree to which it refunds customers when it fails to deliver the service to a defined standard.

Infrastructure service providers should where possible value their customers' loyalty and ensure that product offers and upgrades are available to all customers, not just new ones. Better practice consists of providing customers with equal access to offers, proactively contacting customers to understand their existing and future needs and product design that does not penalise passivity, or time-poor customers.

Infrastructure entities benefit from establishing strategies to actively manage customer rights and addressing fairness through reduced costs from disputation, being able to manage customer expectations and an enhanced reputation.

Sources of Information: customer charters, customer Q&As and dedicated sections on infrastructure entity websites that detail customer rights, financial hardship policies and annual reporting.

Principle 2: Informed with choice

Empowering customers to be informed about when, where and how to access infrastructure services is highly beneficial to customers and suppliers alike. When this is coupled with meaningful customer choices of products and services, it can help match individual needs and requirements.

Technology is rapidly transforming the infrastructure sector, and customers' expectations of better information, so choice and discretion can play a bigger role is yet to reach its full potential.

For example, better practice consists of service providers that:

- provide customers with a range of products and services that match individual needs and preferences
- provide customers with information about the service's availability and its cost and quality that lets customers make informed decisions concerning when and where to use services
- let customers meet their own needs and exercise price for quality decisions
- provide prompt and where possible real-time information that is accessible and easy to understand
- design choices in such a way they are beneficial to the customer, and communicated quickly, clearly and without confusion
- use online calculators and graphic tools can be effective in conveying information.

Customer choice, if it is well-structured and relevant for customers is a mechanism to improve the process of price discovery that can inform future investment decisions.[6] This can be helpful for providing a stronger rationale for enhancing existing infrastructure and avoiding unnecessary capital costs in building new facilities.

Technology allows infrastructure entities to provide customers with minute -by-minute updates on the availability and quality of an infrastructure service. Examples include apps that provide up-to-date and relevant information for customers. The presence of an app, however, may not mean the information is rapid or reliable, as there are apps that are not based on real-time information.

Rapid reporting of service information can help customers make decisions, potentially deferring consumption to a better time of day or period in the cycle. It is also important that quality information on historical consumption of services by customers better supports individual choices and when done well can augment positive customer perceptions.

Sources of information: customer choice and supporting information can be found on infrastructure entity websites, apps and at the point of delivery.

Principle 3: Stakeholder management

Customer stewardship extends beyond the strict bilateral transaction of service provider and customer. It must also evidence systems, structures and processes for engaging proactively with industry and community stakeholders to understand concerns and balance them with the needs of customers.

For example, better practice consists of service providers that:

- engage proactively with stakeholders to understand perceptions and concerns about the impact and consequences of their activities
- evidence that stakeholder concerns are acknowledged and incorporated into short- and long-term decision-making
- demonstrate a stakeholder plan that is forward looking and have personnel skilled in soundly implementing it.

Infrastructure service providers must deal with a range of stakeholders astutely, and deal with the complexity that often customers and stakeholders can be the same people, but present with very different expectations and motivations.

For example, motorists want better roads but do not necessarily want new or bigger roads to encroach on their homes and neighbourhoods.

The diversity of infrastructure stakeholders appears to be increasing, and so their interest in the decisions that are made about an infrastructure asset will reflect this. Stakeholders' interests can be very different and can include some stakeholders who may actively oppose any change to the asset.

Stakeholder management is about establishing the systems, structures and processes to listen and work with stakeholders to address concerns that must be balanced and worked through in evolving customer outcomes.

Proactive management of stakeholder relationships can be an agent of change. However, perspectives on this have changed and will continue to do so. For example, Milton Friedman claimed in 1962 that the business of business is business.[7] Today's businesses are subject to far more public scrutiny. The ability to manage stakeholder management well is an element that supports an infrastructure entity's ability to deliver long-term success.

When stakeholder management is done well, there is a more conducive environment to strengthen the social licence, reduce scope for operational and reputational risk and encourage a more positive investment and project delivery environment.

Sources of information: stakeholder management can be found on an infrastructure entity's website, in annual reports as well as information provided by stakeholders on their websites.

Principle 4: Human capital management

Organisations that commit and demonstrate an improving culture, management of specific opportunities and risks, including health and safety, employee performance and incentives, are probably more likely to fit with a stewardship ethos.

For example, better practice consists of service providers that:

- establish systems and processes to manage all aspects of human capital
- evidence the importance of organisational culture. Ensure incentives for staff and executives are transparent and linked to customer outcomes
- keep a record of managing key risks such as health and safety, employee performance management and transparency, around incentive structures.

People matter in infrastructure and ensuring all systems and processes reinforce a customer centred culture.

For example, how executives and staff are paid can influence their priorities to focus on quality of customer support and affect the quality of interaction with customers.

Linking pay and salaries to the delivery of relevant customer outcomes is one mechanism for testing whether the entity has aligned its incentives structures with customers. Linking pay to relevant customer service outcomes is an indicator the infrastructure service provider regards customer outcomes as materially important.

Investing in employee skill development, hiring practices, proactively managing employee performance and organisation culture programs are mechanisms that support organisations to deliver over the long term.

Strengthening human capital management can help set up the infrastructure sector to achieve greater self-direction and self-regulation. In other words, less government intervention that can be prescriptive and reduce scope for a more dynamic, innovative partnership implied with customer led infrastructure.

Sources of information: annual report, sustainability report, and market disclosure.

Principle 5: Customer-centred design

To what extent can an entity demonstrate evidence of systems to measure and adjust in the process of sustaining long-term customer loyalty? This is fundamental in blending together short- and long-term considerations of customer stewardship.

The integration of customer needs and preferences into decision-making for infrastructure design and ongoing service delivery is pivotal to stewardship.

For example, better practice consists of service providers that:

- establish and implement customer management systems that reinforce a customer-focused culture
- put customers at the centre of everything that they do, and have systems that continue to address customer needs and preferences over time using existing ways to measure net promoter scores, satisfaction and other customer listening practices
- demonstrate structures, processes and programs to gain continuous customer insights and customer feedback, focusing on:
  - maintaining operational excellence
  - developing and maintaining a customer-driven culture
  - delivering clear, simple and transparent information, services, or transactions so that customers get the most from the experience.

This principle is broader than customer satisfaction, which is generally defined as being affected by recent experience at the point of consumption. Customer management systems need to have a focus on the long term and are about ensuring customer experience is repeated and enduring.

Customer-centred design seeks to instil a culture of continuous improvement. It is also highly consistent with evidence-based decision-making, where qualitative and quantitative data are more central.

These practices are helpful to proactively respond to challenges and adapt in the face of changing customer expectations.

Sources of information: annual reports, corporate strategic plans.

Principle 6: Transparency

Infrastructure service providers must evidence a high standard of transparency and disclose their performance, policies, systems and service volumes.

The cornerstone of this principle is that transparency is essential in championing greater accountability and better quality decision-making.

For example, better practice consists of service providers that:

- produce reports and provide data that lets stakeholders compare performance over different reporting periods
- enable stakeholders to draw conclusions about the infrastructure service performance, including data and narrative descriptions
- ensure data openness and its availability to enable dynamic and entrepreneurial processes for both opportunity and need identification for capital and operating spending.

Infrastructure service providers should be transparent and disclose their performance, policies, systems and service volumes.

Data openness not only lets stakeholders monitor and assess service performance. It can also engender an innovative culture through a deeper software layer of infrastructure that is more conducive to better use of existing infrastructure and, gradually, greater productivity and economic growth, with the possibility of reduced political interference.

Sources of information: master plan, corporate strategic plan, performance reporting, annual report, special government and parliamentary inquiries.

Principle 7: Planning

All infrastructures require evidence of long-term planning to support its current and future strategic and operational requirements.

In fact, the Better Infrastructure Initiative has anchored aspects of its work with the proposition that better infrastructure requires better long-term planning.

For example, better practice consists of service providers that:

- plan and invest for a better customer, stakeholder and community future Make publicly available their long-term business strategies that actively considers the future needs of customers and the changing operating environment
- realise strategic planning could identify challenges and opportunities that may not be affecting the asset today, but could in the future
- report strategic plans and the means by which these plans will be financed, funded and implemented.

Where a long-term strategy is being actively implemented based on customer and stakeholder priorities, it is considered a leading indicator that the entity is positioning itself to adapt to a changing customer profile, and in turn a changing economy and society more cost-effectively and with less risk.

Sources of information: master plan, corporate strategic plan, and annual report.

Principle 8: Innovation

Infrastructure service providers should demonstrate evidence that infrastructure entities are acting and investing in dynamic and relevant customer outcomes.

For example, better practice consists of service providers that:

- actively identify, analyse and implement innovations that can directly improve customer outcomes through both lower costs and enhanced value
- have a portfolio of investment in innovation, including disruptive technologies to both respond and shape a dynamically changing environment
- will nurture and champion innovation of the broader network the entity operates in, and engenders a collaborative (as opposed to competitive) ecosystem
- infrastructure services must be dynamic and adaptable to the shifting needs of customers and the economy if their full long-term benefits are to be secured.

The desired impact of innovation is to open up new ways of meeting the burgeoning demand for infrastructure. For example, this includes increasing the scope for better use of existing infrastructure, thereby accelerating the pass-through of benefits to customers, stakeholders and community without waiting to build new. Innovation in the better use of existing infrastructure can gradually increase economic growth and productivity more than traditional build-first approaches.

Sources of information: master plan, corporate strategic plan, sustainability and annual reports.

Principle 9: Risk

Entities should be able to evidence that they have systems and processes concerned with both value creation and reducing costs, in context of technology or other sources of disruption.

Risks constantly evolve and require infrastructure service providers to be vigilant, scanning for future risks while managing existing risks.

For example, better practice consists of service providers that:

- ensure they are at an advantage to deal with change and uncertainty along with current and emerging suite of risks
- have internal processes to challenge perceptions of risks and address blind spots
- establish risks and processes to accommodate the changing risk environment and have systems in place to actively manage risk.

Examples of new risks include cyber intrusion for which there have been examples of attempted hacking of infrastructure assets. Understanding how an infrastructure entity is managing risk is important for customers and stakeholders to have confidence that the infrastructure service will be delivered in the future. To avoid gold plating, in other words over-investment, it is also important to balance the costs of these measures with their benefits to customers and stakeholders.

Sources of information: master plan, corporate strategic plan, annual report

Principle 10: Leadership

Is there a record of a preparedness to step forward in the interests of securing better long-term outcomes for customers, and the betterment of the broader network without an expectation of immediate or direct financial gain?

Infrastructure is connected to networks of other assets, and relies on them to function and to take responsibility for it, even if this is not legally necessary.

It is therefore critical that high quality citizenship applies to infrastructure network ecosystem to ensure these interfaces work effectively, are cooperative and synchronised.

Infrastructure service providers are faced with the challenge of managing infrastructure assets in a constantly changing environment. Depending on the asset, ownership structure and regulatory environment, there are likely to be elements that are beyond the ability of the infrastructure service provider to control.

Leadership by infrastructure service providers is critical to addressing blockages that may prevent an asset and its adjacent network from adapting.

Best practice examples of leadership include preparedness to engage in the long-term architecture of the entity's supply chain and network ecosystem. Importantly, leadership is rich in systems-wide thinking and action, and is prepared to act decisively, collaboratively and in some circumstances without waiting for government.

The do-it-yourself infrastructure protagonists that were discussed in detail on Policy Outlook Paper No. 3 are highly relevant to completing the picture of leadership.[8]

Other areas where entities have evidence of leadership include a willingness to engage on controversial topics, investment in research and public policy, and participation in public debates around infrastructure. Leadership by its very nature involves being first to do something and as such does involve risk where ideas and concepts may not be universally supported.

Sources of information: the best evidence base is an entity's actions and their demonstration effect, followed by secondary sources like speeches, submissions, policy papers, investment in research.

Better practice

The principles described in this chapter synthesise the key links and interfaces that have to occur for customer stewardship to take hold and deliver the long-term outcomes and behaviours that underpin customer-led infrastructure.

Chapter 3 will help to demonstrate what good customer stewardship looks like in practice, through a series of case examples where organisations are already engaged in important reform, innovation and leadership across some or many of the principles discussed. These are the exemplars.

Table 1: The desired impact of customer stewardship principles

Principle and description	Rationale	Desired impact
1. Rights and fairness Demonstrate that all customers are entitled to know and understand their rights to access, service quality and compensation for faulty and non-performance.	Infrastructure plays a critical and intimate role in the lives of its customers and the community. An explicit accountability to customer rights and guarantee of fairness are very important to engendering trust and confidence.	– Set realistic expectations for customers and suppliers. – Reduce scope for disputation and build trust. – Encourage providers to communicate in plain and clear language.
2. Informed with choice Is there evidence of empowering customers with information and choice to help match individual need and requirements? To what extent are customers informed about when, where and how to access infrastructure services?	Technology is rapidly transforming the infrastructure sector. Customers expect better information so choice and discretion can play a bigger role, but is yet to reach its full potential and can be highly beneficial to both customers and suppliers.	– Better-informed customers can help reduce bottlenecks, and congestion in peak periods. – Achieve higher customer satisfaction. – Reduce capital expenditure on new assets, and greater room to invest in existing assets (data, software).
3. Stakeholder management Is there evidence of systems, structures and processes for engaging proactively with stakeholders to understand impacts and issues and how these are taken into account in meeting customer needs and preferences?	Customers and stakeholders in infrastructure need reassurance of integrity, and that long-term outcomes are socially responsible. Customers and stakeholders can often be the same people, but have different expectations and motivations. Stakeholders can oppose any change if not properly consulted.	– Strengthen social licence over the long life of infrastructure. – Substitute self-interest and confrontation with collaboration and participation first. – Reduce operational and reputational risk. – Enable a more positive investment and project delivery environment.
4. Human capital Demonstrate what and how there is a commitment to improving culture, management of key opportunities and risks, including, for example: – health and safety – employee performance – KPIs centred on customers and stakeholders – targeted incentives to responsible and long-term shareholder wealth.	People matter in infrastructure. Ensuring a clear and public alignment of systems and processes are essential ingredients in shaping a well-balanced and integrated culture that champions long-term outcomes.	– Empower all personnel to take leadership across all aspects of customer stewardship. – Greater scope for self-direction and self-regulation. – Reduce scope and risk of government interventions owing to poor performance. – Create more opportunity to discover how to meaningfully engage with customers and stakeholders. – Greater room to innovate with and for the customer.
5. Customer-centred design Is there evidence of integrating customer needs and preferences into decision-making for infrastructure design and ongoing service delivery? What systems are in place to measure and adjust so as to sustain long-term customer loyalty?	Good infrastructure goes beyond just customer, service in a transactional sense. It must account for the long-term security and trust of customers that is pivotal to fulfilling stewardship.	– Instil a continuous customer improvement culture – Generate and use data to inform future infrastructure investment. – Comprehensive view of customer outcomes across value chain, regularly updated.

Source: Better Infrastructure Initiative, John Grill Centre for Project Leadership.

Table 1: The desired impact of customer stewardship principles

Principle and description	Rationale	Desired impact
6. Transparency Is there evidence of a high standard of transparency and disclosure about economic performance, policies, systems, service volume and quality?	To champion accountability and improve the quality of decision-making with respect to customers and shareholders. Customers and stakeholders are more likely to support change when culture of transparency is present.	– Enable stakeholders and customers to monitor and draw conclusions on infrastructure project selection, prioritisation and performance. – Better support an evidence-based policy and management culture. – Reduce scope for political interference.
7. Planning Is it evident there is long-term planning to support future strategic and operational development?	Strategic planning could identify challenges and opportunities that may not be affecting the asset today, but may in the future. Better practice consists of publicly reporting strategic plans and the means by which these plans will be funded, financed and implemented.	– Maximise use of scarce resources such as land, and access to it. – Reduce delivery costs and project risk. – Open up full suite of integrated infrastructure, land use and population planning.
8. Innovation Can it be evidenced there is a culture that is intent on shaping and investing in dynamic and relevant customer-led innovation?	To extract the full long-term benefits of infrastructure, its services must be dynamic and adaptable to the shifting needs of customers and the economy.	– Better use of existing infrastructure. – Accelerated pass-through of benefits, without long wait to build new. – More gradual increase to economic growth and productivity than traditional build-first approaches.
9. Risk Is it evident that entities have systems and processes concerned with both value creation and reducing costs, in context of technology or other sources of disruption?	Risk is a catalyst for innovation, and therefore its management should be dynamic and forward looking and adaptable to change.	– Record of stronger innovation. – Greater agility and adaption at lower cost. – Enable greater wealth creation.
10. Leadership Evidence of stepping forward in the interests of securing better long-term outcomes for customers and stakeholders, the betterment of the broader network without an expectation of immediate or direct financial gain.	Infrastructure is connected to networks of other assets, and relies on quality collaboration for these to function. It is critical that high quality citizenship applies to the infrastructure network to ensure these interfaces work effectively, are cooperative and synchronised.	– Systems based thinking and culture that delivers more for less risk. – Collaboration to replace compliance to rigid rules and procedures. – Greater intelligence and adaptation to change.

Source: Better Infrastructure Initiative, John Grill Centre for Project Leadership.

Chapter 3
Australia's Customer Stewardship 2017 Exemplars: lighting the way

The Better Infrastructure Initiative has used the customer stewardship framework and principles described in Chapter 2 as a filter to examine and highlight the growing community of practice that is evident in Australia. As a result, eight industry exemplars have been identified to help complete the picture as to what good customer stewardship looks like and how it is being practised in Australia.

Australia has the benefit of a significant cohort of excellent infrastructure providers that are practically demonstrating customer stewardship.

Infrastructure exemplars reported in this chapter provide an important reference point in better understanding the community of practice for customer stewardship, and where the industry can evolve based on these examples of excellence in both the public and private sectors.

Customer stewardship exemplars are evidence of the capacity and capability of infrastructure service providers to deliver customer outcomes. It is also recognised that this is a fast moving and contestable space, even for monopoly providers, where the bar for excellence is continually shifting upward.

By highlighting their achievements, exemplars are intended to help stimulate better practice that in turn inspires and challenges others to try harder and accelerate change in favour of the customer.

The exemplars are also valuable in helping to inform the long-term work the Better Infrastructure Initiative is doing to establish a framework that will lead to a way of measuring and comparing the state of play of customer stewardship in an organisation over time.

Customer Stewardship: ten working principles

Sydney Airport

Customer stewardship lands better outcomes for all

Sydney Airport has been a fully privatised ASX-listed company since 2002. It is Australia's busiest airport, as well as one of the oldest in the world that is run commercially. In 2015, Sydney Airport introduced a new approach to its international Airline Services Agreements (ASA). The ASA further embedded Sydney Airport's focus as a customer-led business, fostering collaboration with its airline partners to enhance the efficiency of operations and increase passenger satisfaction. The ASA aimed to create a better airport experience for airline customers and more than 100,000 passengers who travel through it every day.

Sydney Airport's ASA is an excellent example of customer-centred design and innovation, which are encompassed in Principle 5. The ASA includes evidence of integrating customer needs and preferences into decision-making for infrastructure design and ongoing service delivery, and transparency. It also encompasses Principle 6 where there is evidence of systems, structures and processes for engaging proactively with stakeholders to understand concerns and balance with customer needs.

Customer collaboration

In an Australian first, Sydney Airport's ASA committed to developing a service level framework that includes a set of customer-focused KPIs aimed at improving the quality and efficiency of operations to support the success of airline partners. Sydney Airport understood that when airline partners were successful with customers, it was also because they are providing services to the same people.

Sydney Airport has collaborated with its airline customers' business needs; set up measurement parameters; establish a reporting mechanism. The KPIs track service outcomes related to enhancing passenger experience, improving operational outcomes and streamlining facilitation.

The KPI framework now generates objective and reliable data that guides Sydney Airport's investment decisions for large infrastructure projects as well as operations. These include new solutions to improve safety, efficiency and passenger experience with baggage, check-in, security and border facilitation, and logistics. The process has engendered a renewed and heightened level of trust between Sydney Airport and its customers. The 2015 ASA reflected a change from an 'inputs-based' agreement to a new 'outcomes-based' framework focusing on providing better service levels and key performance reporting.

In another first, Sydney Airport invested in queue measurement technology to record processing and wait times at various passenger facilitation points. This investment has delivered benefits beyond monitoring performance standards. By enabling more dynamic resource allocation at outbound border processing and security screening, it has been instrumental in supporting more efficient operations. The airport also shares real-time queue wait-time data directly with passengers, empowering them to better plan their time in the airport and enhance their overall experience.

Overall the development and delivery of the service level framework and associated KPIs has resulted in a more collaborative environment where data is being used by a range of stakeholders across the airport community to deliver better outcomes for passengers.

Better data, better business

The development, measurement and reporting of KPIs that reflect the customers' needs has resulted in deeper capability for data-driven decision-making that allows for more targeted investment to deliver efficiency and effectiveness. According to Sydney Airport, the focus on 'outcomes' through the KPI framework is "leading to a more collaborative approach to consulting with customers and has enabled us to develop shared solutions to issues that arise across the business".

For example, following a decline in Sydney Airport's customer satisfaction KPI for the comfort and quality of its gate lounges, it examined its qualitative feedback so that it could understand the issues that were lowering this score. The airport shared this feedback directly with airlines and consulted them so that the designs for new gate lounges at the T1 International terminal addressed known concerns of both airline staff and passengers. The designs

now respond directly to this feedback and are being trialled before being introduced across the terminal.

The agreement lets Sydney Airport be innovative and flexible in its approach to delivering outcomes for airline customers. For example, it has been able to deliver improved efficiency in passenger processing at check-in and at the outbound border through automation, negating the need for more costly infrastructure expansions. This helps to keep prices lower for their airline customers.

The focus on outcomes has also let Sydney Airport apply a more structured approach to project delivery, helping it to identify capital efficiency opportunities through grouping projects that reduce overall management costs, and secure economies of scale in procuring materials and resources.

Most importantly, monitoring Sydney Airport's performance against KPIs has provided significant insight into its business. Having this data has meant management and staff understand operations much better and can collaborate with airlines and ground handlers to target investment in infrastructure, systems, people and process improvements. All these are crucial in making a material difference to the experience of passengers. Armed with evidence of improving satisfaction scores across all key measurements of service quality, as well as improving outcomes for missed bag rates and queue wait times, Sydney Airport confirms that customer stewardship done well, is good for business and all stakeholders.

Image courtesy of Sydney Airport Corporation.

Transport for NSW

Breakthrough culture moves NSW forward

Transport for NSW (TfNSW) is the lead agency of the NSW Transport cluster. It is responsible for strategy, planning, policy, regulation, funding allocation and integration of service delivery for all modes of transport in NSW including road, rail, ferry, light rail, point to point, regional air, cycling and walking.

Since its creation in 2011, there has been strong annual public transport patronage (up over 25 percent), matched with a significant uplift in customer satisfaction with public transport (up 10 percent). The organisation has and is continuing to go through extraordinary change that fits well with a broad range of customer stewardship principles, particularly in respect of customer-centred design (Principle 5), stakeholder management (Principle 3) and innovation (Principle 8).

Opal card: a gateway to efficiency and new customer opportunity

Opal cards are smartcard tickets used to pay for travel on all forms of public transport in Sydney. Whilst smartcard ticketing systems are now used in public transport systems around the world, their adoption requires a significant cultural step change for customers, which can complicate transition. However in Sydney there has been widespread acceptance and rapid adoption of the Opal card, reflecting a staged, sensitive roll out of the technology with all the key groups, particularly the aged. At each step, TfNSW engaged with customers to understand how to help them make the transition.

Beyond the simple act of customers being able to add money to a card then tap on and off wherever they travel on Sydney's public transport network, Opal has opened up a rich set of opportunities where TfNSW can deploy emerging technology to the benefit of customer and stakeholders. That is where data, analytics and innovation can be fused together to better connect communities, transform service delivery and personalise mobility services for customers.

TfNSW also continues to innovate with credit cards now being trialled as an alternative form of contactless payment for travel on public transport. A test and learn approach is being taken starting with a pilot deployment on the Opal gates on Sydney Ferries service between Manly and Circular Quay to build an understanding of customer reactions and needs. This exemplifies the opportunity to leverage existing infrastructure to deliver customers benefits by co-designing solutions with them.

Open data, powering an innovation ecosystem

Delivering better transport and customer outcomes increasingly depends on TfNSW being at the forefront of applying new and emerging technologies. This process is driven by a vision that transport needs to become a technology business.

A key to delivering this vision is the way open data can harness the benefit of third party products. For example since the launch of TfNSW's Open Data Hub there has been a dramatic expansion of third party real time apps, where visualisations and dashboards have been effective in conveying information to customers, and providing a finer resolution of detail. The real time bus occupancy data has been closely associated with improved customer outcomes because it gives more timely information and more choice for customers.

The Open Data Hub and Developer Portal resulted in an accelerated delivery program of just four months to launch in April 2016. Since the launch there has been a consistent increase with current users exceeding 5100. New registered applications and application programming interface (API) hits show an escalating demand for transport data. There are 400 real time APIs and data sets accessed over 609 million times since the launch, demonstrating the high demand for this data, including targeted innovation for improved outcomes for customers with accessibility needs.

A breakthrough mindset

Cultural change is an essential ingredient when embracing customer stewardship. TfNSW has demonstrated a clear minded and persistent approach to transforming its culture that is anchored around the following five behaviours collectively described as engendering a 'breakthrough mindset'. These are:

1. Sharper focus on outcomes
2. Accelerated decision-making
3. Calculated risk taking
4. Intervention to remove barriers to progress
5. Active sponsorship of technology enabled initiatives.

Their cumulative effect is to ensure TfNSW is more adept and agile to current needs of customers while being strategic and forward-looking about future opportunities to secure long-term customer loyalty (Principle 5). This position is well evidenced in the Technology Roadmap where TfNSW developed a range of scenarios with respect to the future of technology enabled public transport.

Importantly, TfNSW concluded from this planning that it cannot predict the technology winner and that a flexible strategic framework is necessary in order to adapt depending on how technologies evolve and how customer behaviours change. TfNSW has developed multiple strategies to personalise transport by:

- integrating the digital platforms customers use to plan, navigate, pay and engage; and by customising their interactions
- automating the mass transit network backbone, to reduce journey time, enhance service delivery and cut costs
- fostering shared and demand-responsive services, particularly for first-mile, last-mile and local connections that lie between car-based point-to-point services and regular bus services
- enabling connected and automated vehicles (CAV). Trials are critical to help understand how people react and respond to this technology and identify the regulatory and network changes needed
- creating a transport data science hotspot that enables intelligent network management and service delivery by using the Open Data platform, and engaging with digital entrepreneurs and industry partners to rapidly develop Proofs-of-Concept using big data, analytics and artificial intelligence.

TfNSW has amply demonstrated that customer stewardship done well demands a long-term vision and program of change that enhances the quality of interaction with customers and stakeholders. Breaking down traditional silos and ensuring an integrated transport network is well advanced, but these endeavours are generally always work in progress. Despite the uncertainties of the future, TfNSW can confidently rely on its customer stewardship achievements to continue pushing the boundaries of good practice that will be beneficial to NSW and the national economy.

Image courtesy of Transport for NSW.

Transurban

Sharing leadership with community and customers

Transurban is an ASX-listed toll road services company. It owns and operates assets that include the M2, M7 in Sydney, CityLink in Melbourne and Clem7 and Gateway Motorway in Brisbane.

The company's roads are essential to the movement of people and goods for Australia's three largest cities and their regional centres. Transurban's 2017 customer stewardship exemplar reflects how it is helping customers be better informed, with greater choice (Principle 2), which is embodied in the innovation of the LinktGO project (Principle 8).

Transurban is seeking to address impediments to customer access and usage, as well as enhancing financial inclusion for a broader cross section of the community. Transurban has demonstrated leadership (Principle 10) through its preparedness to invest in and shape the long-term debate on road user charging with its Melbourne Road Usage Study.

Investment in innovation is essential for adapting toll roads to changing customer and stakeholder needs. Most drivers on Victoria's toll roads spend less than AUD10 a month. In the past, these 'casual users' had to either commit to a tag account that they may use infrequently or arrange to buy a one-off pass. The latter invited some risk for the casual user, particularly if they failed to remember to buy a pass either before or shortly after completing travel as this would result in penalty fees and even legal enforcement to pay.

Listening to customers

LinktGO is Transurban's response to customer feedback, where casual users expressed both a need and a preference for greater choice and flexibility in accessing and paying for their toll road services.

LinktGo was released in NSW for trial in May 2017. It is a GPS-based smartphone App that enables real-time information exchange with customers, and removes the need for customers to commit to an account in advance of travel, install a tag or buy a time-limited pass.

Customers can register on their smartphone, and use the app to enter licence plate numbers and credit card details. Using the phone's GPS to detect toll road travel, LinktGO notifies customers of their travel cost in real time and they pay the toll directly from the app. Trip-by-trip payments and payment reminders help customers avoid fees for non-payment.

LinktGO will provide Transurban with customer feedback on the interest in intensifying using smartphone apps to manage not only toll trips, but in due course adapt it to help meet broader mobility needs and preferences. While this product touches many dimensions of customer stewardship, the data it produces may provide a richness of future new product and service opportunities for customer-centred design (Principle 5).

Shaping future policy

Principle 10, leadership, is fundamentally about securing the long-term betterment of the broader network and/or policy ecosystem that Transurban operates in. It is imperative that the transport system, and its many connections, including rail, sea and air, work effectively. Reforming the funding model for roads is an important endeavour that must involve the customer and stakeholder groups who depend profoundly on a functional and viable road network.

Transurban's Melbourne Road Usage Study is a case in point. According to Transurban it is the first real-world experiment that simulates a trial of user-pays road charging in Australia. While the concept of user-pays road charging has support among many industry and policy experts, for the community it represents a new and very different way of funding road infrastructure.

The 18-month study began in May 2015, recording the responses of 1635 private light vehicle motorists from the Greater Melbourne region to five different user-pays charging options. It was designed to meet three objectives.

Image courtesy of Transurban. Clem7 is a bypass road connecting Brisbane's inner north suburbs to the southern and eastern suburbs.

- To gauge motorists' knowledge and understanding of our current road-funding system and assess their attitudes and preferences toward user-pays charging options.
- To understand motorists' behavioural responses to different charging and implementation options.
- To prove that technology is not a barrier to implementing a practical user-pays system.

Two road-charging models with distinct purposes were tested consecutively:

- usage-based model – this tested three usage-based charging options: charge per kilometre; charge per trip; and flat rate (capped kilometres)
- congestion-based model – this tested two congestion-based charging options: cordon (area); and time of day.

According to Transurban, a series of attitudinal surveys conducted at key points throughout the study demonstrated a considerable shift in participant preferences – that is towards a user-pays model over the current system. For example, at the start of the study, 85 percent of participants were comfortable with the current funding system; however, after experiencing alternative ways of paying for road use, a marked turnaround occurred where 60 percent preferred a user-pays system.

An important insight gained is the effectiveness of information-sharing and practical experience in creating customer awareness and new perspectives about difficult public policy issues. In fact, when organisations do these types of studies, and they are done well as was the case with Transurban, they are helping to engender a sense of shared leadership with the customer that goes to the core of long-term customer stewardship.

The Melbourne Road Usage Study is an important contribution to the future shaping of the funding model for transport infrastructure. Australia has much to gain from carrying out more studies and pilot schemes such as this. Leadership initiatives involving the public more deeply can themselves serve as an agent for change. The study also has the potential to help build an important body of knowledge that brings evidence to the road funding debate about reform and possible pathways for it to occur.

South East Water

Innovating for vibrant communities
Metropolitan, Victoria

South East (SE) Water is a government trading enterprise that provides water utility services in Melbourne's south-east suburbs. It services more than 675,000 residential and 58,000 commercial and industrial properties, which are equivalent to more than 1.7 million people.

Two major long-term challenges are confronting SE Water, increasing population and climate change. Both these directly influence the future demand for water and its supply. It is abundantly evident that SE Water is preparing for an uncertain future.

Necessity is the mother of invention, and SE Water has mobilised its people and customer talent to ensuring it can deliver on the needs and preferences of its customers and stakeholders, particularly as Melbourne's population is projected to almost double by 2065.

SE Water's entry onto the customer stewardship exemplar list reflects its planning for uncertainty by involving customer and stakeholders (Principles 3, 5 and 7), enabling risk to be a catalyst for innovation (Principles 8 and 9) and leadership (Principle 10).

SE Water's approach to planning means that the organisation has an in-depth understanding of the impact that population growth and volatile weather patterns have on its long-term ability to service customer needs.

An increasingly large population will result in increased demand for potable water: currently SE Water draws around 156 gigalitres (GL) from catchments and it expects that by 2065 annual demand will be around 200 GL.

Having tested a range of different climate change scenarios, SE Water identified the following three major impacts:

1. increased water consumption through higher summer temperatures
2. reduced rainfall impacting catchment capacity
3. potential for extreme weather events and urban flooding.

Such impacts have focused the attention of SE Water's strategic planning experts as they seek to realise their objective of a sustainable environment by making services more resilient to climate change with less impact on the environment.
Inspiring confidence that water assets are being well managed and are dynamic and adaptable to future challenges has been a centrepiece of SE Water's practice. This is evident with issuing an Urban Water Strategy and Corporate Plan to clearly communicate the challenges, and planning to address them.

Building long-term confidence
Melbourne's water supplies are considered secure in the short term, and accessing water from the Victorian Desalination Project managed by AquaSure is an important factor. SE Water's approach to planning has led the organisation to understand that its ability to meet its long-term objectives demands change to how the water cycle is managed and new ways to engage customers.

To ensure long-term water security and meet objectives around sustainability and customer value, SE Water is developing a series of integrated urban water management (IUWM) strategies.

According to Robert C Brears (2017), integrated urban water management activities advance 'technological solutions for water management while simultaneously modifying attitudes and behaviour of individuals and society towards scarce water resources'. This is important given humans are 'part and parcel of the environment rather than its masters'. The benefits of doing so are reduced costs to build new infrastructure (new supplies) and meeting ever more stringent ecological requirements as water becomes more scarce.[9]

Planning for change
A key element of preparing for the future is the preparedness to trial new technology (Principle 8) and new ways of doing things (Principle 5). Innovation is critical to the long-term infrastructure services, enabling water services to adapt to the shifting needs of customers and the economy. By combining IUWM with a focus on innovation, SE

Image courtesy of South East Water.

Water is creating the possibility for services to adapt in the future, particularly with its focus on creating alternative water products and services.

SE Water currently removes around 121 GL of waste water per year, with 12 percent treated at eight water-recycling plants. Around 5 GL of recycled water is supplied to households for toilet flushing and outdoor use and is also used by agriculture, viticulture, recreation and business operations.

There is an ambitious objective of aiming to double the volume of alternative water supplied to users to more than 9 GL by 2065. As part of its strategy to create alternative water supplies, SE Water is developing different projects including Fishermans Bend, one of Australia's largest urban renewal projects. It aims to reduce potable water consumption by incorporating water tanks into the design of buildings and establishing a sewer mining project that may deliver recycled water for applications such as flushing of toilets.

Aquarevo involves new technology and systems to manage three sources of water at a new residential development in Lyndhurst on land that was previously occupied by a water purification plant. SE Water is working to establish a community that integrates potable water, recycled water and rain water in each home, using an intelligent system enabled by OneBox® a monitor and control device developed in-house by South East Water.

Featuring a pressure sewer system that pumps wastewater to a local water recycling plant, treat the waste to Class A standard, and sends it back to each home for use in the garden, toilet or washing machine – closing the loop. Each home will have rainwater tanks linked with technology that receives weather forecasts – then releases water before heavy rainfall to minimise overflows or flooding in local waterways.

Each home will also have a leading edge rain to hot water system, so that rainwater can be used for non-drinking, hot water purposes (such as showering, baths and other hot water faucets). Aquarevo residents can monitor their energy and water consumption on a customised smartphone app. The development is expected to reduce demand for potable water by as much as 70 percent.

The outcome of SE Water's long-term approach to planning and commitment to innovation is likely to be that customers will progressively change their behaviour over coming decades and not only adapt but also drive innovation. Success for SE Water is likely to be that water continues to be a catalyst for vibrant communities while being a quiet and enduring partner to it (Principle 10).

Port of Brisbane

Customer centred for the whole journey

Port of Brisbane is a private unlisted entity. It is owned by some of Australia's and the world's largest and most influential infrastructure funds management companies. The Queensland Government privatised the Port of Brisbane in November 2010. It is therefore the most mature of the major gateway capital city container ports privatised by the state governments of Queensland, New South Wales and Victoria over the past ten years.

Port of Brisbane is a cornerstone of the logistics and transport network of Brisbane and the wider South-East Queensland regional area. Its inclusion in Australia's 2017 Customer Stewardship Exemplars reflects the port's multidimensional approach that touches many aspect of the customer stewardship framework.

Of particular interest is the innovative way in which Port of Brisbane has, in close consultation with its technology partner, customers and state government stakeholders, developed and applied new technology in favour of stronger long-term customer outcomes. The sensor and data network permits a substantial increase in the size of vessels processed in the port without requiring extensive and environmentally challenging dredging to increase the physical capacity of the channel.

The consultative development used by Port of Brisbane is an excellent example of customer-centred design and innovation encompassed in Principle 5. That is, evidence of integrating customer needs and preferences into decision-making for infrastructure design and ongoing service delivery. There is also clear evidence of innovation encompassed in Principle 8, are where the Port is acting and investing in dynamic and relevant customer outcomes.

Optimising channel access with world-leading technology

Globally, shipping vessels continue to grow in size and an increasing number of larger container vessels are seeking to call in on Brisbane.

In November 2016, Port of Brisbane worked with a range of stakeholders, including the Harbour Master, Brisbane Marine Pilots, tug operators, Maersk and Patrick Terminal, to welcome the first 8500TEU vessel into Brisbane – a major achievement.

Port of Brisbane has worked closely with specialist engineering and environmental consultants DHI and developed NCOS (Nonlinear Channel Optimization Simulator), a big data-based technology that can accurately predict a vessel's underwater keel clearance. NCOS lets larger vessels safely navigate the channel on certain tide windows (taking account of conditions such as tides, wind and waves). NCOS was successfully launched in August 2017, and it is expected it will greatly reduce the need for costly and disruptive capital works to deepen the channel.

NCOS is now delivering significant operational benefits for the port and its customers. Its high level of accuracy, together with stringent oversight greatly reduces risk for Port of Brisbane and the shipping industry while allowing greater flexibility and better vessel scheduling that bring network-wide benefits. Port of Brisbane is continuing to work with DHI, the Harbour Master and other stakeholders to fully implement NCOS into the port's systems (Principle 3, Stakeholder management).

Integrating with transport networks

Principle 7, planning: All infrastructure requires evidence of long-term planning to support its current and future strategic and operational requirements.

Since privatisation, Port of Brisbane has also been effective in accessing capital and implementing large-scale network planning, capital expenditure and development projects. These major capital works are integrating the port's operations into its customers' logistics chains and getting the most productivity benefits from state and federal transport networks.

Image courtesy of Port of Brisbane.

Examples of Port of Brisbane's planning and development projects are:

- AUD110 million Port Drive upgrade, delivered ahead of capacity constraints to boost safety, as well as greatly enhance the productivity of its customers/logistics/transport businesses
- planning for south-east Queensland's only mega cruise ship terminal with a 500-metre berth, catering for the world's biggest cruise liners well into the future (currently the biggest cruise liner is 362 metres long). It is expected this infrastructure will be a catalyst for the national tourism industry
- working with customers on data management and integration, which is in the very early stages of assessing the value of a Port Community System, whereby supply chain data can be integrated, delivering productivity benefits
- working with stevedores and container customers on the potential for automated vehicles, along with a AUD2 million partnership with University of Queensland for ten research projects into both economic and environmental challenges.

Port of Brisbane strategic planning unites a customer-centred and long-term view to identify and resolve issues that will affect its future operating environment. The proposed Melbourne to Brisbane inland rail project is a case in point where essential and urgent corridor planning is needed today so that this new national rail link can connect to Port of Brisbane.

The Port has been a leader (Principle 10) in working with government as a catalyst to better customer and stakeholder fulfilment. By tackling one of the most challenging issues in infrastructure, Port of Brisbane is seeking to fix the so-called 'last mile' challenge so infrastructure transport networks can be complete and operate to their maximum potential.

EastLink

Reducing risk, being future ready

EastLink is a privately-owned tollway that has been operating since 2008. It services 250,000 vehicles a day and connects Melbourne's south-eastern suburbs with the Eastern, Monash, Frankston and Peninsula Link freeways. EastLink has twin tunnels 1.6 kilometres long that protect the environmentally sensitive Mullum Mullum valley above.

EastLink provides a valuable case study about managing risk (Principle 9) and adapting the asset to future changes in the vehicle fleet. Apart from EastLink's self-driving car trials, a new tunnel ventilation system has transformed EastLink's long-term energy and carbon costs. It will also let the toll road benefit from the emergence of electric vehicles.

As part of its focus on actively managing sustainability and minimising energy and carbon consumption, EastLink reviewed its tunnel ventilation system where the ventilation fans, which were used to maintain constant air flow through each tunnel portal, lacked speed control. The original system accounted for 64 percent of the total electricity used for the whole business.

In 2010, following an application by EastLink, the Victorian Environment Protection Authority amended the tunnel ventilation system licence to allow all fans to be switched off at night, when traffic levels are relatively low.

While the night-time tunnel portal emission was more efficient, the fans in the original ventilation system EastLink were only able to operate at full speed, resulting in higher electricity costs.

In 2017, EastLink upgraded the tunnel ventilation and software systems with ten large, more efficient variable speed fans that were self-regulating or 'closed loop'.

The tunnel and road operating system now automatically controls the ventilation system by monitoring the output of the existing air quality and airflow sensors within the tunnels.

The tunnel ventilation system can now respond to the volume of traffic travelling through the tunnels, as well as the vehicle mix, such as the proportion of heavy vehicles with diesel drivetrains. Increasingly important for the future, the tunnel ventilation system will respond efficiently to increasing proportions of vehicles with hybrid electric/combustion drivetrains and pure battery-powered electric vehicles, which will generate less pollutants and reduce ventilation requirements.

The combined result of introducing new variable speed ventilation fans, the new fully automatic ventilation control system, and limited tunnel portal emissions during daytime is reducing electricity usage and power costs, with GHG emissions cut by 6441 tonnes of carbon dioxide equivalent a year.

Through systems and processes that are focused on identifying and addressing long-term risks and opportunities, EastLink has been able to both add value by reducing ongoing energy costs and be in a position to benefit from the gradual phasing in of electric vehicles.

Image courtesy of EastLink. EastLink ventilation stack.

EnergyAustralia

Empowering customers with new energy - data and technology

EnergyAustralia poses these questions:
When was the last time you thought about your energy provider? Let me guess - it was when you got your bill, right? And what exactly is an energy provider? Do they energise you, or even excite you? Probably not - chances are you find them dull at best, annoyingly expensive at worst. In fact the bills they charge are so disconnected from the benefits energy gives you, it feels more like a tax than paying for a service.

EnergyAustralia says this needs to change. Australia is at the beginning of an energy awakening and now more than ever the energy industry need to work together to empower and energise Australia to better, cleaner energy decisions. This means finding unique ways for consumers to make informed energy decisions, improving transparency and fairness, and delivering innovative solutions. EnergyAustralia is finding ways to put their 1.7 million customers across eastern Australia in control of their energy choices.

Technological innovation is central to EnergyAustralia's efforts to improve customer choice, transparency and giving consumers control of their energy costs. EnergyAustralia's investment in new technology such as the Redback Solar Inverter System, launched in September 2017, allows customers to decide how they use, store and even sell energy captured from their roof-top solar panels. As Australia transitions to a cleaner energy future, EnergyAustralia recognises that many customers will continue with traditional energy connections for this essential service. As a result, they have implemented a range of plans and policies to make energy offers fairer by ensuring customers always have access to best-in-market plans, rewarding commitment and providing support for those that have trouble paying for their energy bills.

These diverse but complementary strategies are good examples of Principle 2 "Evidence of empowering customers with information and choice to help match individual need and requirements," and Principle 8 "Innovation - evidence of a culture for shaping and investing in dynamic and relevant customer-led innovation."

Technological innovation in energy markets drives greater customer choice
In September, EnergyAustralia launched the next generation Redback Smart Hybrid System, new technology specifically created to put families and businesses in control of their energy consumption. EnergyAustralia's partnership with Redback Technologies, announced in October 2016, is the first major investment by EnergyAustralia's NextGen business unit, dedicated to developing the energy businesses of the future using new disruptive technologies.

The Redback Smart Hybrid Solar Inverter system combines a smart solar inverter, battery enclosure and "intelligent" energy management software into a seamless package. The technology allows customers to decide how they use, save and even sell energy captured from their roof-top solar panels. And they can do it all from a smartphone.

Redback is an example of how EnergyAustralia is investing in the development of reliable, affordable and cleaner technology which puts the customer in control of their energy consumption. With the Redback system, customers can manage their energy consumption so they not only save money, but reduce their carbon emissions. In addition to helping customers make the most of the energy captured by their solar systems, Redback helps to make households less reliant on the grid.

The technology will allow a customer to schedule major appliances including electric hot-water systems, air-conditioners or even pool pumps to run when there is excess solar power available. It means households don't have to draw energy from the grid during peak times. The technology uses machine learning to gather intelligence over time based on user preferences and even external factors like the weather.

Today's consumer expects their energy retailer to deliver products and services that go beyond electrons – they want reliable, affordable and cleaner energy, and as with other retail sectors they want value for money in return for their commitment.

EnergyAustralia defines success as delivering reliable, affordable and cleaner energy for all Australians, no matter what they earn or where they live. In delivering to this, EnergyAustralia has launched a range of initiatives for our customers that deliver to what customers want. From making cleaner energy solutions more accessible, increasing transparency of customer plans, to recognising commitment and providing reassurance and support for those that have trouble paying their energy bills.

Australians believe climate change is a serious issue and they want to do their bit in addressing the issue head on. The problem is the industry is not making it easy or affordable. Research conducted by EnergyAustralia found around 46 percent of people agree that climate change is a serious issue and 42 percent would choose a clean energy solution if it was in their budget. But less than 20 percent of customers are motivated to do something.

Using this insight, EnergyAustralia made cleaner energy choices easier and more affordable by introducing a carbon neutral program for its existing customers. Go Neutral offsets all the carbon emissions from a customer's electricity at home, at no extra cost.

Fairness also means all customers have access to affordable energy.

EnergyAustralia has had a hardship program in place since 2005. The aim of the program is to help the company's most vulnerable customers achieve financial independence.

When a customer joins the program, EnergyAustralia's approach is to review their existing plan and make the appropriate changes to ensure they're receiving the best in-market offer and any government concessions to which they're entitled. Payment plans based on what the customer can afford can also be set up, because commitment to the program is more important than capacity to pay.

Recently EnergyAustralia announced an additional AUD10 million investment in financial relief measures and support to help their most vulnerable customers, and was one of 12 "trailblazers" and the first energy company to launch a Financial Inclusion Action Plan (FIAP) aimed at helping people achieve financial security and independence

Image courtesy of EnergyAustralia.

VicRoads

Stakeholders key to unlocking better use of existing infrastructure

Major arterial roads through our cities are critical to meet the growing passenger and freight logistics task in Australia. These roads need to operate efficiently to meet the growing demand of road customers as our cities continue to grow, but escalating residents and businesses living along side and adjacent to these infrastructures wherever possible should not be unreasonably effected.

These issues were significant for VicRoads when it examined the option to introduce 24 hour/7 day (24/7) clearways on Melbourne's Punt Road. Their approach and capability to secure a strong outcome provides an important case example for stakeholder management (Principle 3).

On a typical week day in Melbourne, Punt Road between Alexandra Parade and St Kilda Junction carries between 30,000 and 40,000 vehicles. It is Melbourne's main north-south corridor over the Yarra River and operates close to capacity during the week and peak weekend periods.

In 2015, VicRoads investigated ways to improve the operation of the road. People who use Punt Road regularly know that a single car parked outside clearway times can disrupt traffic flow and cause major delays and congestion. It was clear that extension of clearways from part time on weekdays to 24/7 would be the fastest and most effective way to improve traffic flow in the short term; with further improvements needed in the longer term.

However thousands of people live along Punt Road, it is close to the Alfred Hospital, Wesley College, restaurants and popular shopping areas. VicRoads needed to know how people used parking on Punt Road outside clearway times and what impact 24/7 clearways would have on them.

Before any decisions were made, VicRoads ran a major parking study with the goal of speaking with everyone who lived or worked along the affected stretch of road. VicRoads held community drop-in sessions and an online forum, speaking to over 200 residents, 52 businesses, councils, the Alfred Hospital and local schools. They also door knocked all homes along key sections of the road.
The parking study led VicRoads to conclude that 24/7 clearways would have a broad benefit to the community and be widely accepted providing they action stakeholder feedback. It was decided that the best way to support people through the change is to provide a small number of alternative parking sites in the area, using vacant VicRoads land.

A formal 60-day consultation was held, giving the community the opportunity to make formal submissions. Forty-one submissions were received, considered and responded to before clearway times were amended.

The Stakeholder management principle focuses on evidence of systems, structures and processes for engaging proactively with stakeholders to understand concerns and balance them with customer needs.

There has been overwhelming community support for 24/7 clearways since they were implemented in August 2016. Travel times outside of peak periods have reduced significantly, and in some cases, such as Saturday afternoons, they have almost halved.

VicRoads thorough engagement with stakeholders, with preparedness to take action to address concerns, resulted in a strengthening of its social license. To enhance existing assets through its approach it helped reduce operational and reputational risk when implementing the project.

A message from the exemplars

Importantly, the exemplars reflect an Australian modesty of just getting on with the job, quietly and effectively.

While that is the case, it is clear to the Better Infrastructure Initiative that many of the customer stewardship details that we have identified were not always easily found in the public record. It was only through consultation and dialogue that we became better informed of the scope, breadth and depth of investment and innovation that is occurring in the sector.

However, it is evident that infrastructure service providers could benefit enormously by being more ready to communicate their challenges, successes, risks and plans with their stakeholders and customers. This would stimulate greater cross-sectoral learning, and assist with the widespread adoption of better practice for customer stewardship.

All the exemplars provide a rich textural mix of innovation and diverse experience in shaping and partnering with the customers and stakeholders. It is apparent from every exemplar that technology, data and analytics are evolving as the new pivot for the future of infrastructure and the capability of choice for meeting the needs and preferences of customers and stakeholders.

Australia has much to gain from the examples set by the exemplars, many of whom are using the data and software as a new layer of infrastructure to create value. This is being delivered in the form of greater flexibility in service delivery despite using fixed physical assets, reducing risk and information asymmetry to improve operational flow and expanding opportunities to make better use of existing infrastructure, especially during peak periods.

A collateral benefit of these initiatives has been the way these layers of intelligence are reducing the need for costly and disruptive capital expenditures to expand existing and/or build new infrastructure.

The exemplars are illuminating a new pathway for infrastructure development that more often than not is less capital intensive than before, but rich in partnership and intelligence with the customer.

The exemplars are illuminating a new pathway for infrastructure development that more often than not is less capital intensive than before, but rich in partnership and intelligence with the customer.

Chapter 4 will turn to how customer stewardship can help build a national consensus, and embed its principles into the infrastructure sector more widely and consistently, while opening up new economic and social pathways for long-term success.

Chapter 4
Building a consensus

With the inspiration and leadership of the 2017 infrastructure exemplars in Chapter 3, this chapter discusses how the sector could be better served by bringing together disparate information sources to more regularly inform the state of play of customer stewardship capabilities, and its widespread adoption.

Customer stewardship needs to be an essential and founding principle for the future of Australia's infrastructure. Its wide embrace would provide a platform for achieving better infrastructure outcomes, along with opening up a new frontier of performance for investors and operators that will directly benefit customers and stakeholders.

There are enormous possibilities to lift the economic performance of infrastructure. However, the ways and means of achieving that need not be limited to the cost cutting, rate of return caps and efficiency drives that have characterised the past. Instead performance can also be transformed through other means where there is an emphasis on relationships, reciprocity and participation first.[10]

The customer stewardship framework is intended to invigorate a positive and forward-looking transformation agenda so that infrastructure owners and managers can more effectively manage its future in a partnership with customers and stakeholders.

That is where customers and service providers can exchange information, understand needs and preferences and be motivated to meet them. There is a role for price discovery in infrastructure as discussed in Chapter 2, and the use of market mechanisms can be very effective in delivering better outcomes for customers and investors alike.

While natural monopolies, which dominate much of the sector, can make customer-led infrastructure more challenging, the cleansing effect of transparency that is embedded throughout the customer stewardship framework can be extremely helpful even in these environments.

The further development of customer stewardship principles and practices is simply concerned with seeking to shape and inform a better community of practice and culture for the sector.

To do this all infrastructure should wherever possible have the benefit of incentives to create value for customers, stakeholders and private shareholders. This can be informed by a price discovery process that helps to allocate investment so future infrastructure is timely, scaled and feasible.

It should not be beyond our expectations, that Australia's infrastructure future is one where prescriptive government intervention is less of the norm. That is because customers and asset owners have the skills, capabilities and culture of mutual respect in finding their way to create new value, generate productivity, and deliver improved customer outcomes.

These are the potential ingredients of a national consensus where the infrastructure services that are offered make sense, are at a minimum fit for purpose and, in some circumstances, compelling to the point that some customers are willing to pay a premium. The customer stewardship consensus, however, must also ensure it safeguards social inclusion, balancing the customer needs and rights with stakeholders.

Chapter 3 set out a rich textural mix of innovative and diverse customer stewardship practices. These are important case studies where government and private firms are initiating customer stewardship by doing it their own way, and not to a one-size-fits-all formula.

To accelerate this diversity of practice so that it is more widely adopted across the sector, we discuss how new information sources could be developed to help the sector understand and track its capability and readiness for customer stewardship.

Build from strong foundations

As discussed in Chapter 1, stewardship theory owes much to the work of Peter Block, whose book Stewardship: Choosing Service over Self-Interest (1993) was responsible for initiating the development of stewardship theory.

Customer stewardship builds on the work of Block and other stewardship theorists. For the purposes of this discussion it is defined as: "the collective management principles and practices that focus on delivering quality long term customer outcomes."

The focus on customer stewardship practices owes much to the work of the World Commission on Environment and Development. In 1987, the commission defined sustainable development as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." [11]

In the case of infrastructure, the focus on customer stewardship is about an infrastructure entity's capability to balance meeting the future needs of customers and stakeholders, while at the same time doing the same for today's customers and stakeholders.

An obligation for shared responsibility and leadership is essential for customer stewardship. The UK's Financial Reporting Council sets out responsibilities for institutional investors that invest in UK companies, codifying the concept of shared responsibility in the UK Stewardship Code:

> *Stewardship aims to promote the long-term success of companies in such a way that the ultimate providers of capital also prosper. Effective stewardship benefits companies, investors and the economy as a whole.*
>
> *In publicly listed companies responsibility for stewardship is shared. The primary responsibility rests with the board of the company, which oversees the actions of its management. Investors in the company also play an important role in holding the board to account for the fulfilment of its responsibilities.*[12]

A further element of customer stewardship is the importance of stakeholders. Stakeholders refers to government, regulators, investors, customers and the community.

Stakeholder theory itself owes much to the work of the Stanford Research Institute in the 1960s, which argued that managers needed to understand the concerns of shareholders, employees, customers, suppliers, lenders and society, so as to develop objectives that would be supported, which was necessary for long-term success.[13] Stakeholder management is an essential ingredient in delivering long-term success in infrastructure, just as it is in management of a company.

Shaping the future

Peter Drucker has been attributed with saying 'if you can't measure it, you can't manage it'.

In the case of infrastructure, a great deal of attention has been devoted to the design and execution of major projects. But this effort too often does not have the benefit of knowing what the clear objectives are in terms of the problem they are seeking to fix, and what are long-term success indicators.

Engineers have been very diligent with the technical oversight of the physical infrastructure, and financiers with the risk and reliability of its performance. However, in this environment of monitoring and compliance there is surprisingly little to inform whether those charged with managing infrastructure are engaging with and adapting the assets and services to meet the changing needs overtime of existing and new customers.

In fact the infrastructure sector has been missing the necessary information and analytical tools that can help stakeholders to assess the extent to which an asset owner/operator is capable and delivering on customer stewardship.

To what extent is it possible to establish a public information tool that informs investors, regulators, policymakers and community stakeholders about the quality of institutional arrangements to support customer stewardship?

Any new information in the public domain concerning infrastructure investments should be of sufficient quality to help inform better future investment decisions.

Frank Geels discussed the role of services and information in supporting transformation in his work on transition theory. (Geels examined the transition in the shipping industry from sail to steam from 1780 to 1900. He noted the role services, including journals of prices, commercial newspapers, mercantile libraries, credit report books and trade journals, played in supporting technology transformation.[14])

Compared with other sectors, infrastructure is notable for its relative lack of information and analytic services that support capital and operational decision-making. An example is equity markets where there is a broad range of services support for capital allocation. These include brokers that provide detailed research analysing the future prospects of a company, credit rating specialists that support commercial lending, and platforms such as the ASX that provide a mechanism for trading.

The infrastructure sector has made many advances but it has not yet fully developed the same level of sophisticated information and analytical services, as are evident, for example, in equity and futures markets. The benefit of addressing this deficiency through a customer stewardship framework is ultimately about improving the quality of information exchange in the sector to support faster and more accurate valuation, risk identification and efficient pricing. All these elements are necessary for a functioning infrastructure market, along with enhanced asset and investment allocation decisions, including project selection and prioritisation.

Whatever are the future challenges of fulfilling infrastructure services, the dissemination and competition for quality information will be essential elements in dealing with uncertainty and finding efficient ways of doing it.

Vision of shared leadership

Customer stewardship relies on a mix of capabilities, processes and structures within infrastructure entities that integrate customer needs and preferences into decision-making for infrastructure design and long-term service delivery.

Given the very long economic life cycle of infrastructure assets, there is an imperative that these public and private assets are able to adapt to their changing social, economic and technological circumstances.

While there is an absence of empirical data it is the Better Infrastructure Initiative's vision to better understand how customer stewardship can help create value for customers and asset owners. We are also committed to understanding how customer stewardship can also stimulate entrepreneurial activity leading to providing a whole range of services that support an open, transparent and sustainable infrastructure market.

It is also important that customer stewardship shapes future public policy settings and government procurement, where its principles are enshrined into contractual deeds and regulatory undertakings.

While the exemplars in Chapter 3 show that some government agencies demonstrate a high level of excellence across a range of customer stewardship principles, it is also imperative that they extend this to their major project and procurement activities as well.

The framework can help to add information and greater efficiency to a number of public policy and commercial practices. Particularly where more information, research and analytical services can strengthen and better inform decisions relating to:

- privatisation
- asset recycling programs
- regulatory reform
- project selection
- asset valuation
- project risk assessment
- business case transparency
- project origination
- public tendering and bidding
- community consultation
- innovative technology implementation.

Every infrastructure sub-sector has its own dynamics and features, and each infrastructure entity operates in geographies that can make their functional and operational circumstances different.

Finding a uniform and consistent way of applying customer stewardship indicators and their measurement will need careful consideration and consultation. In particular, how they may affect the following areas.

Regulation

Infrastructure entities with market dominance, such as natural monopolies, are typically subject to regulatory environments that have been established over time and that reflect the nature of the infrastructure service.

These entities have made progress with customer stewardship. This is particularly the case in the water sector, which has had the benefit of a national program of work in this area. The water sector, while providing an essential service, is also an example of blending government ownership, significant regulatory oversight and strong programs in working with the customer around water security.

Wholesale infrastructure services, such as ports, have traditionally had a lighter regulatory environment with a diversity of customer stewardship experience.

Asset ownership

There are three core types of infrastructure asset ownership: government ownership, listed equity business ownership; and unlisted private equity ownership. Ownership structure can influence the degree of transparency around reporting to inform customer stewardship.

The framework is seeking to create more consistency and depth of information regardless of the type of ownership.

Interdependences

The very nature of infrastructure is diverse, and it is rare for an infrastructure entity to lack interdependencies to adjacent assets and networks.

Some infrastructure assets, such as ports, airports and toll roads, are location based and by their very nature immobile. Others, such as electricity and gas markets, can obtain inputs from a range of sources with some level of exchange possible.

Regardless of their infrastructure-operating context, the customer stewardship framework will seek to highlight the importance of systems thinking and culture. It is imperative that structures and incentives exist for asset owners and operators to act in the interest of enhancing the whole system, and that where necessary they will avoid putting self-interest ahead of the system upon which they rely.

The customer stewardship framework seeks to reinforce these behaviours and dispositions.

Business channels

The customer stewardship framework is seeking to be agnostic when it comes to infrastructure entities that vary according to whether they are subject to business-to-business (B2B) or business-to-consumer (B2C) markets. B2C markets have tended to have a higher level of community scrutiny and political sensitivity with pricing subsidies a feature in some areas.

The intended impact is to draw a stronger link in the chain of responsibility to the final customer and stakeholders, so that behaviours and protocols in the supply chain can agree with customer stewardship principles.

Social licence

When applied systematically, the customer stewardship framework has the potential to be useful for long-term investors to assess whether an infrastructure entity has the necessary planning and risk strategies in place to manage future uncertainties.

A key focus of the Better Infrastructure Initiative is to support the development of an infrastructure market that includes active participation from the private sector.

The continued focus by national media on infrastructure services, and the willingness of government to intervene unilaterally is contributing to a volatile situation for all stakeholders.

Customer stewardship has an important role to play in helping to stabilise the situation at its root, which is with customers and stakeholders. This is beneficial for long-term investors where building stakeholder confidence matters to their assets and their ability to perform.

Enabling new private investment, freeing up government funds to address more pressing social disadvantage or genuine nation building that the private sector cannot do are all elements in the alchemy, as it were, of customer stewardship that can power Australia's future.

Ways and means forward

Expert surveys and ratings are commonly used for private sector risk and investment analysis. They have been used widely, including to establish mechanisms to assess corruption and governance performance, such as Transparency International's Corruptions Perception Index and World Bank Governance Indicators.

There is no apparent common standard on how expert-based surveys and ratings should be established. However, any attempt to develop a reporting tool concerning customer stewardship would need to review academic literature and tap into best practice principles.

The work of Andreas Schedler, a leading global academic on the subject of expert-based judgement and measurement, can help guide the development of the methodology for a customer stewardship indicator.

Schedler argues that in respect of complex concepts there is an essential role for judgement but that it "must conform to solid procedural standards to fulfil its promise of intersubjective rationality". He also maintains that "for measurement to be scientific, it must be grounded in shared concepts, shared realities, and shared rules of translation—all of which require judgment as well as the regulation of judgment".[15]

Schedler proposes a three-stage measurement process, which are summarised as follows:

1. Concepts must be transparent: Concepts are the substantive anchors of measurement. If concepts are unclear, contradictory, or shifting, measures will lack clear, consistent, and stable meaning.

2. Facts must be transparent: Empirical realities are the factual pillars of measurement. If empirical references are unclear, contradictory, or shifting, measures will lack clear, consistent, and stable empirical content.

3. Translations must be transparent: The translation of concepts and observations into numerical expressions must follow explicit, consistent, and stable practices. Otherwise the mediating role numbers play between concepts and facts will become unclear, inconsistent, and volatile.

Schedler argues that "even if experts are unable to describe all the miniature pieces that comprise a complex mosaic of knowledge generation and analytic judgment, they should be able to document the big picture".[16]

An adaptation of Schedler's three-stage measurement process can be found in Figure 2.

According to Schedler expert raters are likely to form divergent opinions, "since experts may not fully converge in their assessments, data producers must have some way of reconciling their divergences, proposing that "experts need to assume public responsibility for their measurement decisions" and "must be prepared to defend their decisions and engage in processes of public debate and revision".[17]

Figure 2: Customer stewardship: translating expert opinion into a measurement process

Source: Adapted from A. Schedler

Expert Reference Group

Equipped with Schedler's best practice standards, the Better Infrastructure Initiative is proposing to examine options for the development of its customer stewardship framework into an expert opinion/measurement indicator.

This will be highly consultative and be guided by an industry-based Expert Reference Group. It will be established at the John Grill Centre and chaired by Adjunct Professor Mr Les Hosking.

The draft terms of reference for the Expert Reference Group are as follows; they will be finalised when members are appointed:

1. Advise on the customer stewardship framework and how its constituent principles can be shaped to contribute to further development of the infrastructure sector in Australia and globally

2. Assist the Better Infrastructure Initiative to understand the role of customer stewardship framework and indicators can play in enhancing the investment and governance environment for infrastructure

3. Act as a conduit to navigate and identify practices and data about the quality of customer stewardship institutional arrangements and its impact on customer outcomes, shareholder value and other relevant stakeholders

4. Advise on strategies to engage asset owners, operators, government, industry and community stakeholders on the implementation and roll out of a customer stewardship framework and supporting information indicators in Australia and abroad.

Further information will be available on the John Grill Centre website (sydney.edu.au/john-grill-centre). The Expert Reference Group will be supported by a small secretariat from the John Grill Centre.

Final remarks

The transition from long-term stewardship of assets to the stewardship of the infrastructure customer has been the subject of this report.

When customer-led infrastructure is a reality, the nation is more likely to be better served by infrastructure solutions that are timely, scaled and feasible.

That means Australia will be better able to more quickly translate its major projects into tangible benefits for customers, community and business. This is, as it were, the alchemy of long-term success for all customers and stakeholders in infrastructure, and customer stewardship is a means of getting there.

Opening up new pathways for enhanced economic performance and social impact is the long game for customer stewardship. That is, a future based on relationships, reciprocity and participation first. It is also a recognition that infrastructure cannot just rely on past management and regulatory practices limited to cost cutting, rate of return caps and efficiency drives with a 'take it, or leave it' customer philosophy.

Strengthening the chain of responsibility, accountability and transparency to long-term customer outcomes is a key motivation.

The customer stewardship framework is intended to invigorate a positive and forward-looking transformation agenda so that infrastructure owners and managers can more effectively manage its future in partnership with customers and stakeholders.

Australia must be ambitious and look forward to a future where customers and service providers exchange information, understand needs and preferences and are motivated to meet them.

Whatever the uncertainties of the future, the customer stewardship exemplars that pursue excellence, act without the constraints of past practices and have the leadership to step up and take responsibility amply show how they have what it takes to be the cornerstones of the new Australian way for infrastructure.

“Lifting the standard of information so infrastructure markets can better do their job is what customer stewardship is about.”

Garry Bowditch
Better Infrastructure Initiative

End notes

1. Block, P., 1993. *Stewardship: Choosing Service Over Self-Interest*. 1st ed. San Francisco: Berrett-Koehler Publishers.

   'Stewardship is the set of principles and practices that have the potential to make dramatic changes in the governance of our institutions. It is concerned with creating a way of governing ourselves that creates a strong sense of ownership and responsibility for outcomes at every level of the organization. It is a buck that stops everywhere. It means having more of a partnership with customers and creating self-reliance on the part of all who are touched by the institution. It says that the answer to economic problems is not reduced costs or better funding; it is to focus on relationships, reciprocity, and participation first. These are the elements that produce the service we seek. This is what will put us closer to our employees and our marketplace. Stewardship is creating a sustainable connection with the people in our playing field that is the answer to our concerns about economics.'

2. Ibid.

3. 3Bowditch, G., 2016. *Re-establishing Australia's Global Infrastructure Leadership, Policy Outlook Paper* No. 1, pp. 20 – 22. Available at: http://sydney.edu.au/john-grill-centre/our-research/infrastructure/initiative-publications/re-establishing-australia-s-global-infrastructure-leadership.html

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The Better Infrastructure Initiative is guided by 10 key propositions:

1. Better infrastructure requires better long-term planning.
2. All infrastructure interventions should be scaled, targeted and feasible.
3. The biggest impediment to better infrastructure is lack of transparency.
4. Infrastructure businesses are better than infrastructure projects.
5. Land-use planning and infrastructure planning are the same thing.
6. Good project selection is paramount; financing is secondary.
7. Infrastructure is primarily about service outcomes to people and business.
8. Risk is a catalyst for more innovation.
9. Better infrastructure relies on strong institutional memory.
10. Leadership matters.

The John Grill Centre for Project Leadership offers unique executive education and research to achieve greater social wellbeing and economic prosperity through projects.

Our partnership with government, industry and academia undertakes research to address the challenges of infrastructure, energy and technology-enabled business transformation to deliver the right projects for the future.

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