Investing in the future

Using value creation and value capture to fund the infrastructure our cities need

Submission responding to the Discussion Paper issued by Department of Infrastructure and Regional Development

February 2017

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Value capture can reform the way we fund and finance the infrastructure we need

New approaches are needed to bridge the infrastructure funding gap

Cities as engines of economic growth

It is imperative for Australian cities' future sustainability, prosperity and the well-being of its citizens that governments meet the demand for transport and other public infrastructure.

On current trajectories the demand for new infrastructure outweighs governments' capacity to deliver the required pipeline of projects. For example, in November 2016, Infrastructure Australia had 97 projects on its priority list. There are various estimates of Australia's Infrastructure funding deficit with Infrastructure Partnerships Australia and Citibank putting it at $700 billion.

There is now an opportunity to reform the way infrastructure is funded and financed as offered by the Discussion Paper on Value Capture.
It is an opportunity that should not be wasted.

Value capture would complement the Government's Smart City vision for 30 minute cities, to ensure the cities of tomorrow continue to be places of innovation and engines of economic growth.

PwC is committed to a process that will lead to realising the reform that enables the delivery of infrastructure needed to drive Australia's economic growth and the liveability of our cities.

Clara Cutajar
Partner - Infrastructure & Urban Renewal Leader

Value capture analysis

PwC has been engaged in the theory and application of value capture through many projects in Australia and internationally.

Value capture is not a new concept – it has been used in various forms since the late 1800's for many city-shaping projects, and is being actively considered and implemented now by governments on various major infrastructure projects.

Our work in this area is focused on identifying the benefits infrastructure creates; identifying the beneficiaries of this investment; quantifying the value created; identifying, and assessing mechanisms to capture this value, and potentially securitising future revenue to fund project costs. The operation principles for value capture must be fair for all beneficiaries.

Presently some groups who directly benefit from public investment in infrastructure are not required to contribute. Instead, the burden falls to all taxpayers and those direct users. A beneficiary pays approach could create a more equitable system for distributing costs.

Value creation and value capture analysis is becoming routine practice in some Australian States. A national framework would ensure consistency of analysis, and provide confidence to Government and other parties.

Value capture can reform the way we fund and finance the infrastructure we need by unlocking funding to make infrastructure more affordable, spreading the costs of infrastructure more equitably among beneficiaries, and improving project design by incentivising governments to design projects optimising the benefits to all beneficiaries.

John Marinopoulos
Partner

A national value capture framework increases efficiency and should be able to apply to different types of infrastructure

Key points

Benefits of a value capture framework

A value capture framework needs to be valid across multiple public infrastructure projects, not just transport.
It can contribute to assisting governments and infrastructure planners by:

- prioritising a range of infrastructure options;
- evaluating the marginal change in value from multiple infrastructure elements simultaneously;
- identifying and assessing the spectrum of broader opportunities and benefits to be delivered to optimise a project's scope;
- identifying the beneficiaries who accrue the benefits of infrastructure delivery;
- assessing integrated land use and transport outcomes by measuring the change in value when changing one variable within a system;
- identifying optimal funding mechanisms and structures to assist with the commencement of a particular infrastructure project;
- input value into Business Cases at 90% confidence (P90), beyond just user benefits;
- aligning P90 value from Business Cases with P90 cost, to optimise capital allocation; and
- providing the potential for bankable revenue streams from value captured.

Assessing value created from infrastructure delivers outputs and insights that complement traditional economic appraisal.

Value creation analysis can therefore add to the capability of government to optimise project selection and design and broader infrastructure investment strategies.

Value capture analysis must be linked to value creation analysis to demonstrate who benefits and by how much, and underpin implementation of value capture mechanisms.

A national value creation and capture analysis framework would ensure a consistent approach across State and local jurisdictions.

Fair and flexible

Understanding what and how much value is created, where this occurs, and who is benefiting, can help government to identify and justify potential mechanisms to capture a portion of the value created, ensuring that funding contributions to projects are proportionate with benefits received.

Correctly implemented, value capture can spread the cost of infrastructure more equitably among multiple beneficiaries.

Funding infrastructure increases social and economic value to makes our cities more liveable

What is Value Capture?

Value capture occurs when revenues collected by government, or private parties working with government, can be linked to the direct benefits received by those who benefit from new, improved or replacement infrastructure investment. Conceptually, value capture analysis involves identifying and quantifying the value created that can potentially contribute towards project funding, and the mechanisms that might be used to collect those revenues. Value capture can occur because direct value is created by investments in infrastructure. This specific change in value can be directly assessed and validated.

Where government is the beneficiary (for example where it owns land next to the infrastructure) it may capture this value by selling this land, or actively using the land to generate additional value.

Benefits of a value capture framework

What value capture achieves is to shift the funding focus from the narrower 'user pays', to a broader 'beneficiary pays'.

Also, by focusing on beneficiaries, the ambit of a value capture project can consider more than land value change, to consider other benefits and beneficiaries.

This creates a more equitable funding model, weighted towards those who benefit most from infrastructure delivery.

Challenges

For value capture to be an acceptable and viable policy option for governments, it must be able to provide the long term sustainable revenue streams that are necessary for funding a pipeline of infrastructure projects.

Key methodological issues include:

- measuring the direct change in land values so that there are minimal variations;
- separating out the effects of the intended infrastructure from other factors, affecting value;
- defining an appropriate catchment around the infrastructure investment;
- consideration of transport network hierarchies; and
- timing between when an uplift in value occurs and when the value is realised potentially leading to complexities and fluctuations in revenue.

Funding infrastructure increases social and economic value to make our cities more livable

What are the benefits that will be created?

Opportunities and benefits

Benefits are generated by opportunities.
Each opportunity can deliver one or more benefits.

Value Capture opportunities are initiatives that can be created and delivered as part of or alongside the proposed infrastructure to meet the service need. For example, a new railway station and a shared pedestrian/cycle path are opportunities that could be delivered as part of a new rail alignment. Residential apartments or commercial development adjacent to the infrastructure are examples of opportunities that may be leveraged from the investment in rail.

A 'benefit' is an enhancement to amenity, to connectivity or to community outcomes and services related to an opportunity. It is a measure of outcomes arising from infrastructure not previously available or available but at an impaired level that is expected to generate positive or negative value for a particular segment of the population.

The location, size and nature of a given project would very much determine the type of benefits and the direct and/or indirect nature of those benefits.

Benefits and value

Value is the quantification or monetisation of the benefit that accrues to a beneficiary.

Direct value occurs when there is a demonstrable and material linkage between new infrastructure and the benefits arising for beneficiaries, as well as the time over which these benefits are delivered.

These potential benefits are identified, measured and valued through comprehensive data and modelling, including market surveys.

Who will benefit?

A beneficiary need not be a user of the infrastructure

Beneficiary

In the context of value analysis, a beneficiary is a person or segment of the population that directly benefits from investment in infrastructure. Beneficiaries are not limited to direct users of the infrastructure, however, beneficiaries have a direct physical or spatial relationship to the infrastructure.

An important element in value creation and value capture analysis is the precision and reliability of the relationships between a benefit and beneficiary which can be developed through multiple research methods.

Examples

Beneficiaries of an infrastructure project may include:

- Developers
- Property owners (residential, commercial, retail, industrial)
- Employers
- Businesses
- Public transport operators/users
- Road users

Beneficiary groups can be further segmented into more specific groups.

Designing value capture so that there are no unintended conseqeuences

Increasing the amenity and connectivity around a range of properties directly around new assets that fall within a value capture project increases the number of beneficiaries that could contribute.

The impact of this would be to increase the potential value available to be created, with the viability of a project being further enhanced.

A key feature of any successful value creation and value capture project should be to ensure that beneficiaries are willing to pay the costs so that there are no unintended market or other consequences.

Where will the benefits occur and when?

In general, the benefits are highest where the infrastructure is delivered and progressively diminish

The benefits associated with infrastructure delivery would result from:

On-site at infrastructure

Direct Benefits associated with or physically connected to the design, procurement and delivery of the infrastructure. This could take the form of land value created by or within a project boundary or other services that could be delivered as part of a project.

Proximal to each area of infrastructure delivery

Property within the approximate area (but not part of the project) that receives a benefit from the infrastructure being delivered.

This benefit can and often does accrue in increasing value during the time that the infrastructure is proposed, planned and then delivered.

This includes benefits relating to indirect accessibility improvements such as railway station redevelopments, new scheduling for trains timetables, longer trains, etc.

Within the municipality or region of each area of infrastructure delivery

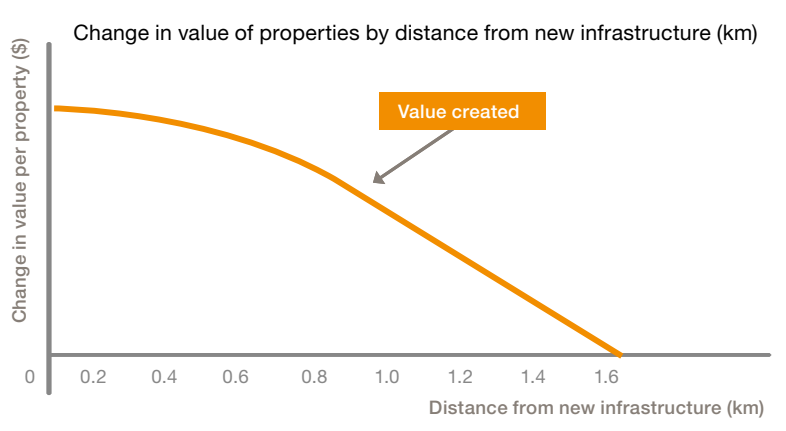
Benefits which arise to the wider municipal area surrounding the infrastructure from accessibility improvements, for example, reductions of congestion in peak travel times on other roads as a result of the new infrastructure delivered.

Value models need to be scalable to address both localised or site-specific opportunities as well as opportunities within projects of a larger scale, such as an urban precinct, or a metropolitan region.

Determining the boundaries for a value capture project

The accessibility or walkability index has a direct influence on the value or infrastructure ascribed by individuals. Many studies globally confirm that accessibility to infrastructure is is based on a 10 minute walkable distance or approximately 800m.

We are able to demonstrate that values from infrastructure are, in general, highest at the location where the infrastructure is delivered, and progressively diminish. That is, the potential area of influence of an Opportunity, in terms of the direct benefit to a beneficiary, is best to undertake up to approximately 1,600m from the core project.



NB. Graph used for illustrative purposes only.

By knowing what is valued decision-makers are better placed to assess infrastructure options

How much value will be created?

A value capture project is where the value capture framework can be applied as a significant source of revenue for funding the cost of the project.

Analysing and quantifying the potential value created from infrastructure is fundamental to value capture analysis and implementation. Value creation analysis quantifies the benefit that accrues to a beneficiary.

Calculating value uplift

To be able to calculate the direct value created by infrastructure, it is first necessary to be able to understand what constitutes value.

PwC's models are able to unbundle and measure the value contribution of the many attributes that add together to build the change in value in a given location. By measuring the value contribution of a broad set of demographic and property attributes, the models assess the change in value from a change in the attributes; that is, the change in value.

The methodology assesses the direct value created from infrastructure, amenity and services over a specified geographic area starting at the individual dwelling or property level. Modelling can be limited to the site itself or can extend by defined radial increments.

Optimising value

By understanding what is valued, decision-makers are better placed to assess infrastructure options to optimise capital allocation.

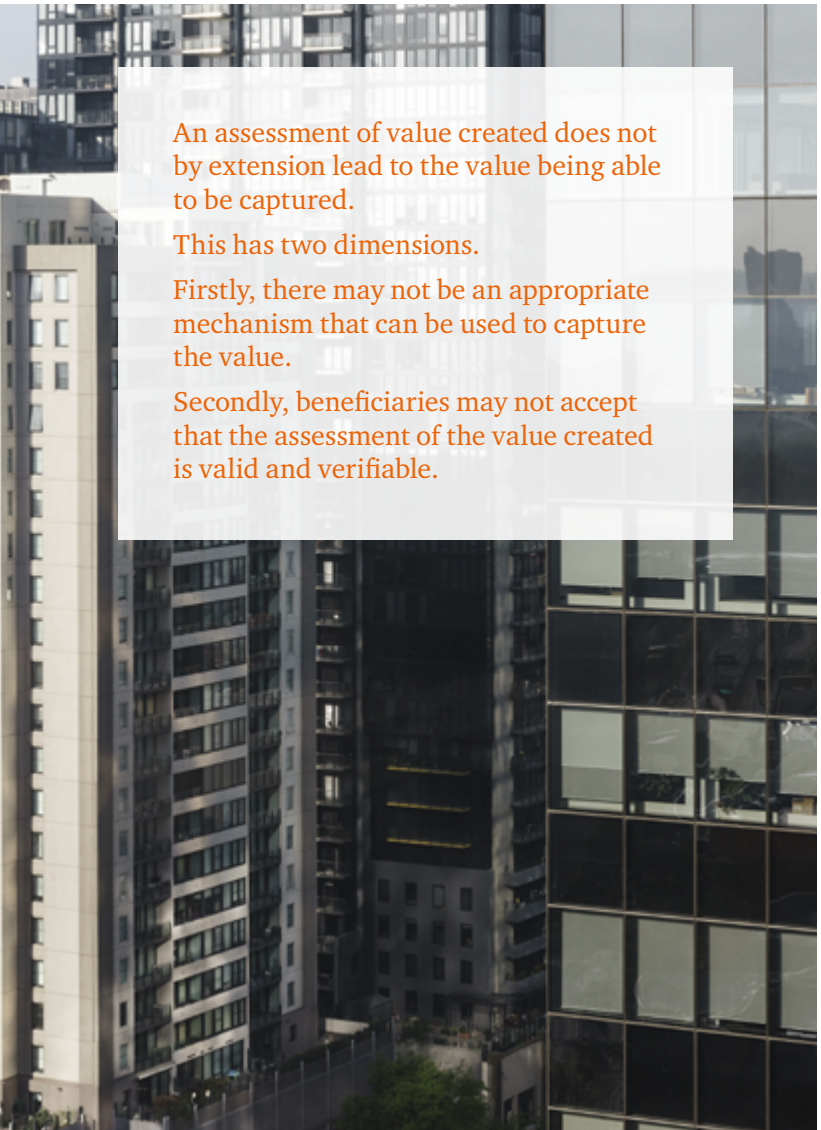
For individual infrastructure initiatives our models are able to be used to refine the scope of a project to optimise the opportunities and benefits, and hence the value that could be captured. The impact on different beneficiaries (such as investors, developers, land owners, existing businesses) can be assessed to maximise the value capture from a project.

The value created/captured will be a factor of:

- the number and type of opportunities identified;
- the spatial relationship of the opportunity to the infrastructure in the context of its immediate location;
- the period of time assessed;
- the availability of one or more value determinants used to assess the value change from each opportunity; and
- whether the value change is positive or negative.

What value can be captured and when?

The widest range of mechanisms used ensures the most equitable spread in capturing value from all the beneficiaries



An assessment of value created does not by extension lead to the value being able to be captured.

This has two dimensions.

Firstly, there may not be an appropriate mechanism that can be used to capture the value.

Secondly, beneficiaries may not accept that the assessment of the value created is valid and verifiable.

Value capture mechanisms

Mechanisms form the core element of a value capture project, and different types of projects may require different types of mechanisms. A menu or cocktail of mechanisms would provide flexibility and could include benefit levies, charges on development and user charges.

New mechanisms can be designed specific to a value capture project or more broadly for a type of infrastructure.

To uphold the principle of 'beneficiary pays' it is important that there be an identifiable nexus, measurable at a high level of precision, between the benefit, the beneficiary and the mechanism, and that a beneficiary does not pay twice for the same benefit.

Features of mechanisms

The following features of mechanisms are critical to their validity:

- the timing of when it applies and whether it is a one-off or ongoing charge;
- the geographic scale to which it applies; and
- transparency and ease of implementation – includes administrative, legislative and compliance environment.

It is important to understand any potential incentives created by a mechanism that may negatively impact land use or transport choices.

Willingness to pay

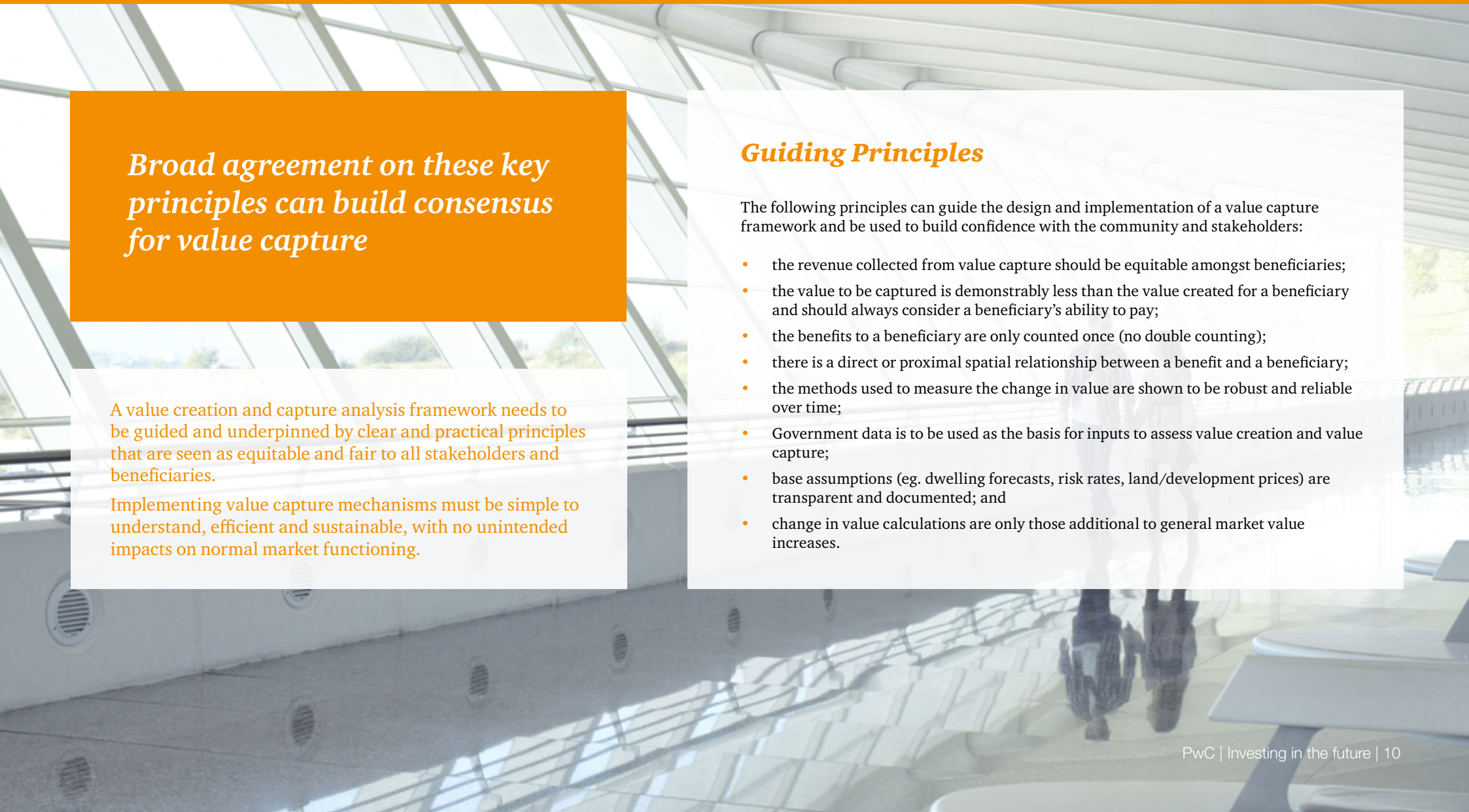
A key factor in the implementation of value capture and willingness to pay is public awareness and acceptance. Before value capture can be implemented, the community, businesses or other beneficiaries need to be well informed about the benefits of the project and why they may be required to make a contribution. Factors affecting a beneficiary's 'willingness to pay' may include:

1. The portion of value created and how much will be retained by the beneficiary;
2. When payment becomes due; and
3. Whether there is an equitable spread in capturing value from all the beneficiaries.

Considerations for designing and implementing value capture mechanisms may include:

- Equity - the amount of value created versus retained by the beneficiary, impacts on the viability of the beneficiary, ensuring beneficiaries are not charged more than once for the same benefit;
- Timing - whether value capture occurs before or after the infrastructure is operational, and whether it is a one-off or ongoing payment;
- Flexible payment - whether beneficiaries have choice of when payment is made, to accommodate their particular circumstances;
- Incentives - methods used to encourage earlier payment.

Key principles



Broad agreement on these key principles can build consensus for value capture

A value creation and capture analysis framework needs to be guided and underpinned by clear and practical principles that are seen as equitable and fair to all stakeholders and beneficiaries.

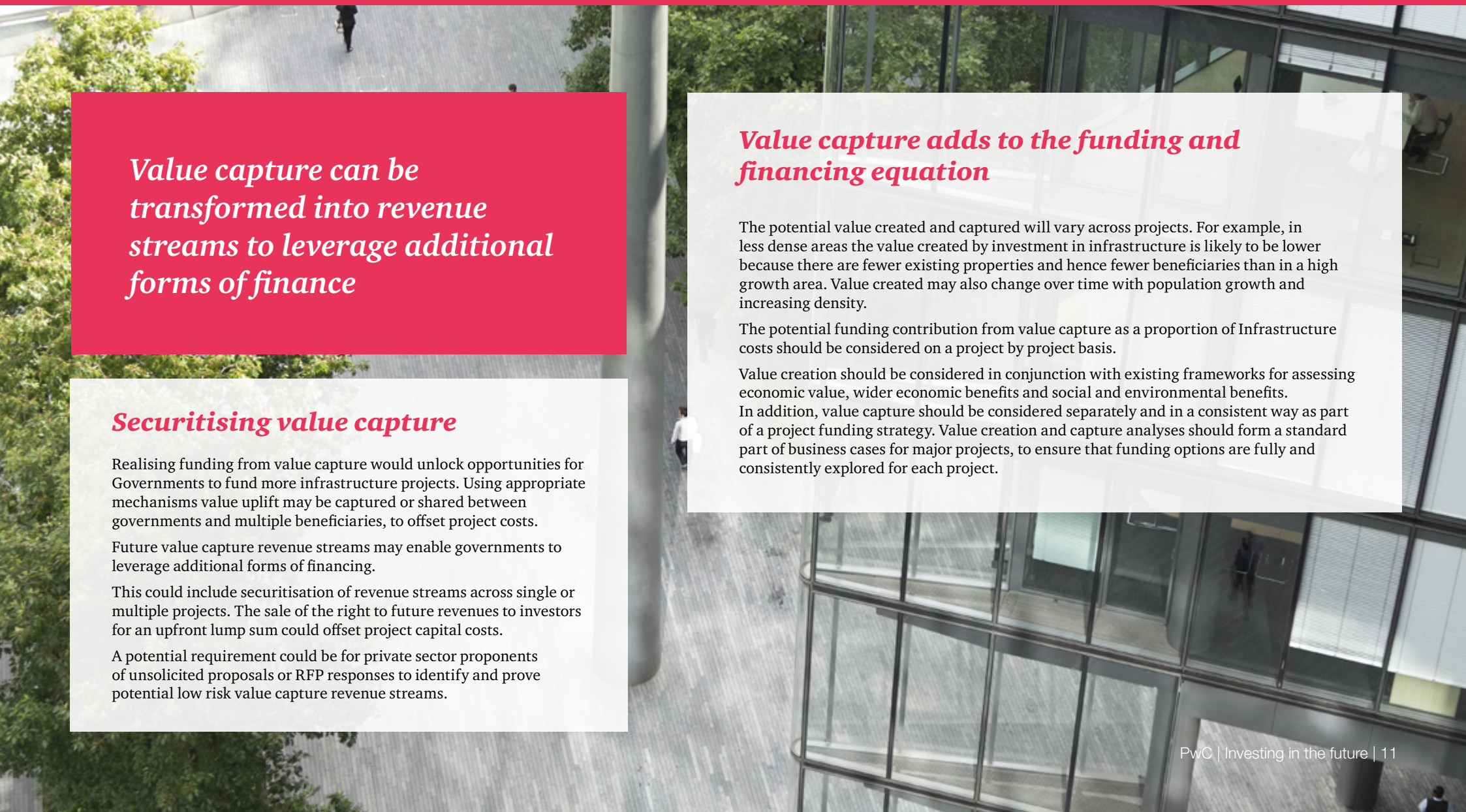
Implementing value capture mechanisms must be simple to understand, efficient and sustainable, with no unintended impacts on normal market functioning.

Guiding Principles

The following principles can guide the design and implementation of a value capture framework and be used to build confidence with the community and stakeholders:

- the revenue collected from value capture should be equitable amongst beneficiaries;
- the value to be captured is demonstrably less than the value created for a beneficiary and should always consider a beneficiary's ability to pay;
- the benefits to a beneficiary are only counted once (no double counting);
- there is a direct or proximal spatial relationship between a benefit and a beneficiary;
- the methods used to measure the change in value are shown to be robust and reliable over time;
- Government data is to be used as the basis for inputs to assess value creation and value capture;
- base assumptions (eg. dwelling forecasts, risk rates, land/development prices) are transparent and documented; and
- change in value calculations are only those additional to general market value increases.

Value capture and the market



Value capture can be transformed into revenue streams to leverage additional forms of finance

Securitising value capture

Realising funding from value capture would unlock opportunities for Governments to fund more infrastructure projects. Using appropriate mechanisms value uplift may be captured or shared between governments and multiple beneficiaries, to offset project costs.

Future value capture revenue streams may enable governments to leverage additional forms of financing.

This could include securitisation of revenue streams across single or multiple projects. The sale of the right to future revenues to investors for an upfront lump sum could offset project capital costs.

A potential requirement could be for private sector proponents of unsolicited proposals or RFP responses to identify and prove potential low risk value capture revenue streams.

Value capture adds to the funding and financing equation

The potential value created and captured will vary across projects. For example, in less dense areas the value created by investment in infrastructure is likely to be lower because there are fewer existing properties and hence fewer beneficiaries than in a high growth area. Value created may also change over time with population growth and increasing density.

The potential funding contribution from value capture as a proportion of Infrastructure costs should be considered on a project by project basis.

Value creation should be considered in conjunction with existing frameworks for assessing economic value, wider economic benefits and social and environmental benefits. In addition, value capture should be considered separately and in a consistent way as part of a project funding strategy. Value creation and capture analyses should form a standard part of business cases for major projects, to ensure that funding options are fully and consistently explored for each project.

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