Demystifying the Automated Valuation Model

PropTrack opens the door on AVMs to give you the confidence to use them.

Table of contents
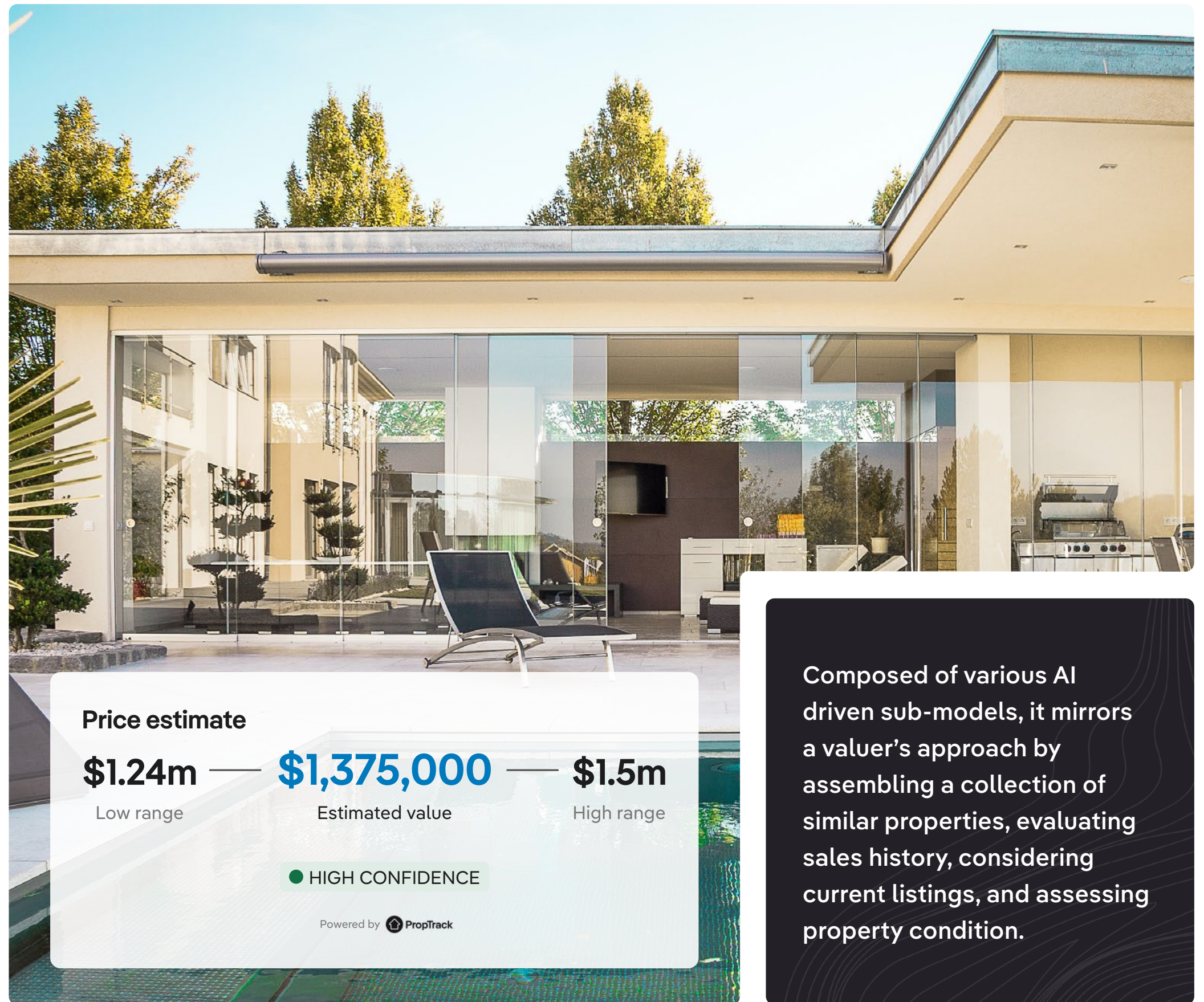
What is an AVM?

An Automated Valuation Model (AVM) is an algorithm that instantly produces a property value estimate. Composed of various AI driven sub-models, it mirrors a valuer's approach by assembling a collection of similar properties, evaluating sales history, considering current listings, and assessing property condition.

An AVM produces an estimated property value and a Forecast Standard Deviation (FSD). The FSD quantifies the confidence in the AVM's estimated property value.

A lower FSD signals higher confidence and a more reliable prediction, whereas a higher FSD indicates uncertainty and lower confidence in the estimated value.

Price estimate

$1.24m —— **$1,375,000** —— **$1.5m**
Low range   Estimated value   High range

● HIGH CONFIDENCE

Powered by PropTrack

Composed of various AI driven sub-models, it mirrors a valuer's approach by assembling a collection of similar properties, evaluating sales history, considering current listings, and assessing property condition.

How are AVMs used today?

To reduce time to decision

AVMs are an instant and automated valuation tool designed to enable quicker and smarter decision-making.

Optimise operating costs

AVMs can be produced without the need for a physical inspection or valuer interaction when data is available. This provides an opportunity to reduce turnaround time and optimise costs.

To facilitate bulk valuations

AVMs can be deployed rapidly and at scale, providing up-to-date market value estimates of your properties. This allows you to react quickly with up-to-date knowledge of your portfolio.

Identify opportunities

AVMs provide a reliable valuation estimate for all properties in Australia. This enables customers to analyze property markets of interest remotely and at scale.

How it works?

AVM sub models

Comparable based models
Value estimate based on similar properties in the neighborhood (algorithmically selected).

Indexation based models
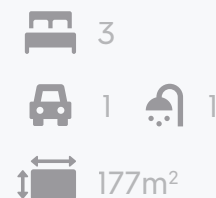Value estimate using property price indices to update past price points.

Listing models
Value estimate based on data available from a recent or current listing on realestate.com.au.

Hedonic models
Value estimate based on attributes and data held on a property and local market.

🛏 3
🚗 1 🚿 1
↕ 177m²

PropTrack AVM

Algorithmically merge or select a sub model to give a single AVM result.

AVM Result
$1,375,000

Produce an associated Forecast Standard Deviation (FSD) to define accuracy and confidence in the AVM result.

Forecast Standard Deviation
10%

Delivering an AVM

API response
API response delivered in real-time to lender decisioning or other 3rd party systems.

AVM property reports
Real-time access to AVM property reports.

Consumer & Research experiences

Estimated Value
$1.24m
Low range
$1.375m
● HIGH CONFIDENCE
$1.5m
High range

Bulk retrieval
PropTrack's portfolio service enable bulk valuation of properties.

How are AVM results delivered?

Here's an example of how AVM insights are created, shared, and utilised.

API response delivers real-time to the lender decision or relevant 3rd party systems.

Consumer & Research experiences create an estimated value with an FSD confidence score and a high and low range value.

AVM reports providing real-time access to the API-generated property reports for brokers, lenders, or credit assessment teams.

Bulk retrieval is a PropTrack-enabled service that provides bulk re-valuation of properties for a specified date.

Consumer & Research experiences

Estimated Value

$1.24m — **$1.375m** — $1.5m
Low range ● HIGH CONFIDENCE High range

Why are AVMs more reliable than ever?

AVMs are now more reliable than ever, with access to new data and innovative machine learning techniques which enable them to replicate more of what a human valuer does.

AVM's no longer use generalised suburb median prices as their sole reference, rather they provide a tailored estimate specific to each property. Significant innovation has closed the accuracy gap between human appraisers and AVM value estimate.

Here are some examples of new data innovations that are helping support AVM reliability:

Image scoring

Computer vision and machine learning techniques help AVMs assess property images and consider a property's aesthetic appeal, renovation status, and feature conditions without a human appraisal.

5.0	5.0	4.7
Property	Kitchen	Bathroom
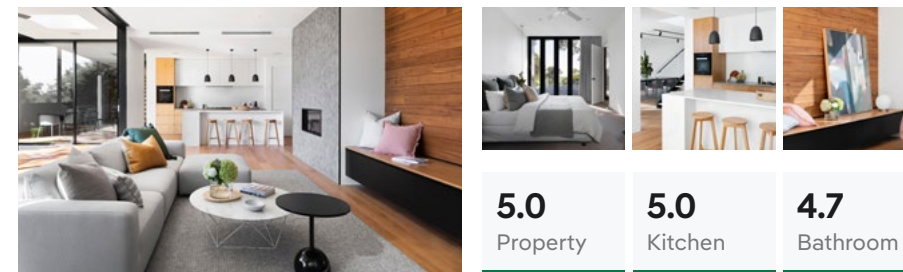
Market and behavioural insights

New insights into supply and demand trends provide AVMs with behavioural data that can influence property's desirability and thus a sale price.


Geospatial data

Crucial contextual information about a property's location and surrounding environment allows AVMs to consider neighbourhood desirability, proximity to amenities and risk factors that may impact the property.

Real-time data ingestion

Real-time data ingestion gives AVMs the capability to respond to market fluctuations to produce more accurate and timely property value estimate.

Shelter

$1,375,000 ☆ **SOLD**
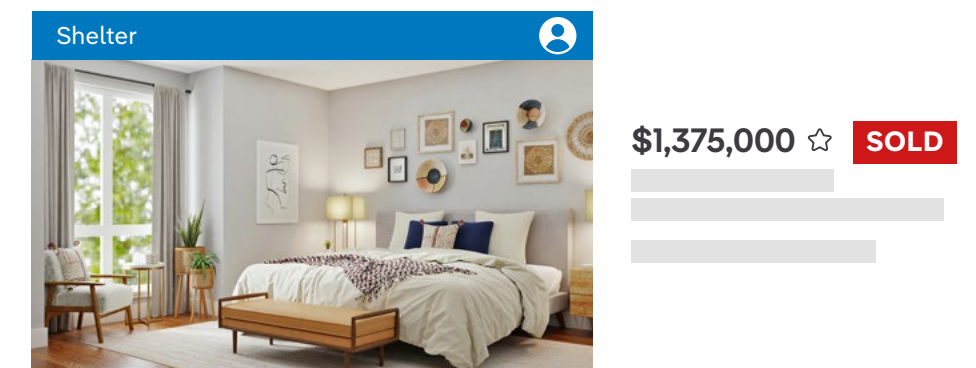
What do regulators expect from AVM users?

APRA considers automated valuation methods, such as AVMs, as an acceptable method to produce a security valuation in the appropriate context.

The principles of the key regulations, APS 220 and APG 223, are clear in their requirements of lenders. They require lenders to have appropriate policies and processes which address when an AVM would be used and have sufficient monitoring, validation and reporting in place.

With this in mind, the regulation offers lenders the opportunity to be innovative in their use of AVMs in a broader valuation strategy.

PropTrack sees the following statements from the regulations as the key points to address when considering the use of AVMs:

✅ APS 220

A prudent ADI contemplating the use of alternative valuation methods such as AVMs would subject proposals to thorough analysis and develop a risk management capability that includes:

A. Hierarchy of acceptable methods of determining value that is appropriate to the level of risk;

B. Analysis of the strengths and weaknesses of the relevant approaches/models being considered, including an understanding of the methodologies used, sources of data employed and how the service provider may be able to assist in re-engineering the ADI's processes;

C. Details of any backtesting of a statistically random sample of AVMs and desk-top assessments or auditing arrangements undertaken by the service provider.

Source: APS 2020 document

✅ APG 223

Techniques such as desk-top assessments, kerb-side assessment, automated valuation methods (AVMs) and reviews of contracts of sale are all acceptable valuation assessments, in the appropriate context. As the risk associated with collateral increases, or the coverage of a given loan by collateral decreases, the need for specialist valuation also increases.

Source: APG 223 document

What questions should I ask my AVM provider?

APS 220 requires lenders to analyse the strengths and weaknesses of the models they are considering.

To assess the appropriateness of a provider's model, it is important to ask questions to understand if the AVM you're considering can meet your business goals.

1. How does your model respond to changing marketing conditions?

It is important to ensure a model responds quickly to changing market conditions. For example, if the model is slow to respond to a falling market, then a lender may be exposed to overvaluation risk. Best-in-class models will update their data in near-real time.

Insight: As well as other sources, PropTrack utilises the latest agent advised sales from realestate.com.au to produce its AVM value estimates.

2. What percentage of properties can you provide a usable AVM for?

Usability rates vary across lenders, depending on their risk appetite. The most common way lenders define usability is by setting a maximum FSD threshold.

Pro tip: Ask your provider how many AVMs are usable within the constraints of your risk appetite. For example, how many AVMs do you have with an FSD 15% or less?

3. What methodologies do you use in your model?

APS 220 requires AVM users to understand the methodologies providers use within their models. Best in class providers utilise multiple models to diversify the risk of error and eliminate bias.

Insight: PropTrack utilise multiple sub models to produce its AVM value estimates.

4. How does your model perform against contract of sales and valuations?

It is important to assess how close an AVM is to a contract of sale price or a valuation, to understand performance for both purchase and refinance transactions.

A best-in class AVM will perform with an accuracy of over 80% within 10% of the contract price. An FSD is critical in determining if an AVM can be used. As a result, it is important to test that FSDs behave as statistically intended. 68% of the time, the contract of sale price or valuation should fall within +/- 1 FSD of the AVM value.

Pro tip: If the FSD isn't calibrated correctly, the rates of over valuation or under valuation may increase.

5. How can I integrate into your service?

If a lender is assessing AVM performance, they should ensure they can integrate it into their process. AVM services can typically be integrated via APIs, property reports, ordering platforms or bulk delivery.

Pro tip: APIs are the typical method of consumption with best-in-class providers, giving a response within a fraction of a second.

6. What are the sources of data employed within your AVM model?

It is critical for AVM users to understand the source, reliability and latency of data used in a provider's model. Lenders should ensure that data used in an AVM is from a primary source to ensure accuracy and integrity. Non-primary sources include website scraping and data aggregators.

Pro tip: Best-in-class AVM providers ingest data from primary sources at near-source latency to ensure optimal model responsiveness.
AVM can produce now.

7. Can you backtest the model?

APRA require lenders to independently assess the performance of AVMs. As such, it is critical to ensure that your provider allows you to backtest their AVM against your own data.

Pro tip: Ensure the backtesting results reflect the value estimates that would have been received at the point in time of interest, rather than what the AVM can produce now.

8. How are AVMs typically used within an organisation?

Having an AVM is one thing, however the value is derived from how you use it. Ask your provider to give insights into how their service is used in the market. This may include the benefits of using multiple AVM providers to diversify risk, increase coverage and optimise commercial outcomes.

Insight: Most lenders leverage AVMs for 30% of valuation decisions and use more than one AVM provider.

What makes PropTrack Australia's #1 AVM on the market?

In recent years lender and consumer expectations have evolved towards digitised and highly automated experiences. To support our customers, PropTrack is driving AVM innovation with leading edge technology, machine learning, unique data, and new models that provide best-in-class accuracy, coverage and usability.

PropTrack focuses its efforts on four key areas:

Data

Leveraging our partnership with realestate.com.au, our AVM rapidly processes real-time data and listing features to provide precise, up-to-date property value estimates.

Technology
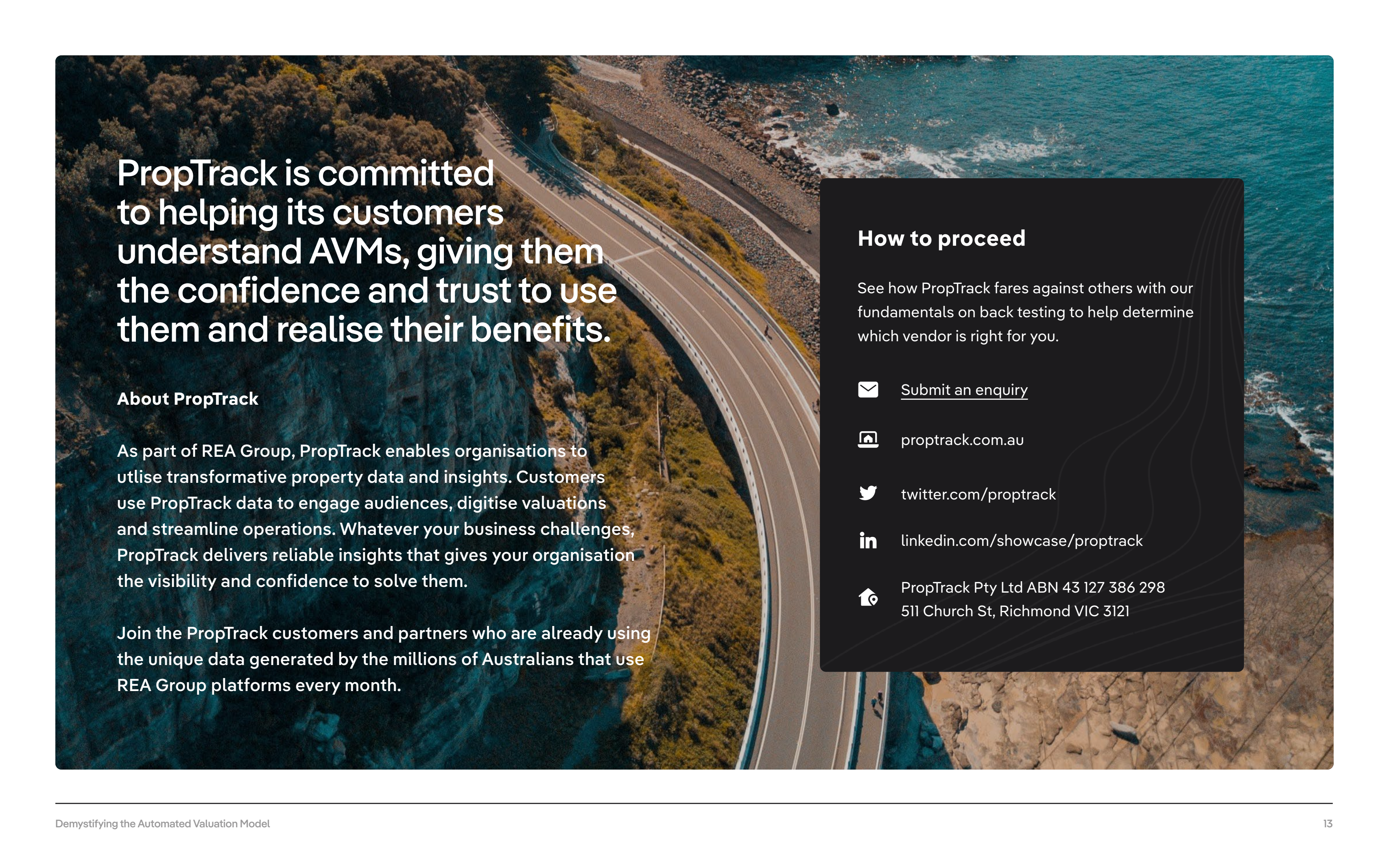
Our fully cloud-enabled platform is built on the REA technology stack, allowing us to leverage REA data latency, enable rapid experimentation pipelines, and perform multiple model retraining runs in a single day.

People

We've assembled one of the largest property data science teams in Australia to drive industry-wide innovation.

Models and AI

We've built new indices, segment sub-models, and leveraged the latest modelling techniques through machine learning to extract insights from unstructured data, like images and text, to digitally perform more of the tasks undertaken by a human during an onsite valuation.

PropTrack is committed to helping its customers understand AVMs, giving them the confidence and trust to use them and realise their benefits.

About PropTrack

As part of REA Group, PropTrack enables organisations to utlise transformative property data and insights. Customers use PropTrack data to engage audiences, digitise valuations and streamline operations. Whatever your business challenges, PropTrack delivers reliable insights that gives your organisation the visibility and confidence to solve them.

Join the PropTrack customers and partners who are already using the unique data generated by the millions of Australians that use REA Group platforms every month.

How to proceed

See how PropTrack fares against others with our fundamentals on back testing to help determine which vendor is right for you.

✉ <u>Submit an enquiry</u>

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