



EXECUTIVE SUMMARY

The potential of new technologies to disrupt housing policy

FOR THE

**Australian Housing
and Urban Research Institute**

PUBLICATION DATE

December 2018

DOI

10.18408/ahuri-7115001

AUTHORED BY

Chris Pettit

University of New South Wales

Laura Crommelin

University of New South Wales

Andrea Sharam

RMIT University

Kath Hulse

Swinburne University of Technology

Title	The potential of new technologies to disrupt housing policy—Executive Summary				
Authors	Chris Pettit	University of New South Wales			
	Laura Crommelin	University of New South Wales			
	Andrea Sharam	RMIT University			
	Kath Hulse	Swinburne University of Technology			
ISBN	978-1-925334-72-2				
Key words	Airbnb, big data, blockchain, digital platforms, housing market, planning, matching markets, regulation, technological disruption				
Series	AHURI Final Report	Number	308	ISSN	1834-7223
Publisher	Australian Housing and Urban Research Institute Limited Melbourne, Australia				
DOI	10.18408/ahuri-7115001				
Format	PDF, online only				
URL	http://www.ahuri.edu.au/research/final-reports/308 (full report)				

Recommended citation

Pettit, C., Crommelin, L., Sharam, A. and Hulse, K. (2018) *The potential of new technologies to disrupt housing policy*, AHURI Final Report No. 308, Australian Housing and Urban Research Institute Limited, Melbourne, <http://www.ahuri.edu.au/research/final-reports/308>, doi:10.18408/ahuri-7115001.

Related reports and documents

Pettit, C., Liu, E., Rennie, E., Goldenfein, J., Glackin, S. (2018) *Understanding the disruptive technology ecosystem in Australian urban and housing contexts: a roadmap*, AHURI Final Report No. 304, Australian Housing and Urban Research Institute Limited, Melbourne, <https://www.ahuri.edu.au/research/final-reports/304>, doi:10.18408/ahuri-7115101.

Crommelin, L., Troy, L., Martin, C. and Parkinson, S. (2018) *Technological disruption in private housing markets: the case of Airbnb*, AHURI Final Report No. 305, Australian Housing and Urban Research Institute Limited, Melbourne, <https://www.ahuri.edu.au/research/final-reports/305>, doi:10.18408/ahuri-7115201.

Sharam, A., Byford, M., Karabay, B., McNelis, S. and Burke, T. (2018) *Matching markets in housing and housing assistance*, AHURI Final Report No. 307, Australian Housing and Urban Research Institute Limited, Melbourne, <http://www.ahuri.edu.au/research/final-reports/307>, doi:10.18408/ahuri-5315301.

Inquiry panel members

Each AHURI Inquiry is supported by a panel of experts drawn from the research, policy and practice communities.

The Inquiry Panel are to provide guidance on ways to maximize the policy relevance of the research and draw together the research findings to address the key policy implications of the research. Panel members for this Inquiry:

Michael Comninos	Astrolabe Group
Sam Headberry	InfoXchange
Sidesh Naikar	Department of Social Services (Commonwealth)
Lynden Pennicott	Department of Health and Human Services (TAS)
Sandi Phalen	Department of Housing and Public Works (QLD)

Executive summary

Key points

- The research identified four main fields of technological advancement that are likely to disrupt the housing sector in future, or are already doing so: matching markets; big data; GIS mapping software; and blockchain.
 - Technological change presents real opportunities for the housing sector, including more efficient allocation of housing stock, more accurate and transparent property management systems, and better informed planning and development processes.
 - At the same time, however, the most advanced technological disruption to date in the housing space—the matching market Airbnb—highlights the ways in which responding to and regulating disruptive technologies presents new challenges for governments and is challenging for governments.
 - Key challenges include the protection of privacy, the need to ensure transparency in increasingly complex technological systems, the cost and access risks associated with the commercialisation of significant technological systems, and the potential for disruption in one housing market to cause negative spillover effects in other parts of the housing sector.
 - In responding to future technological disruptions, governments need more agile and critical policy making approaches to allow effective short-term responses to digital disruptions, as well as strategies for implementing longer-term cultural change and systems upgrades. The report identifies 10 key principles and strategies as a starting point for developing this new policy making ‘playbook’.
-

The emergence of new digital and disruptive technologies has meant that housing policy makers and practitioners now find themselves facing new opportunities and challenges. Governments, non-profit organisations and businesses are all grappling with the complex and fast-moving impacts of technology-enabled change. This Inquiry examined these disruptive digital technologies, investigating their potential for reshaping housing markets and reconfiguring housing policy. It provides housing policy makers and practitioners with a nuanced understanding of how technology is already restructuring housing markets and affecting housing assistance programs, as well as insights into likely future developments. This has important implications for ensuring that the provision of housing and housing assistance is as efficient and equitable as possible.

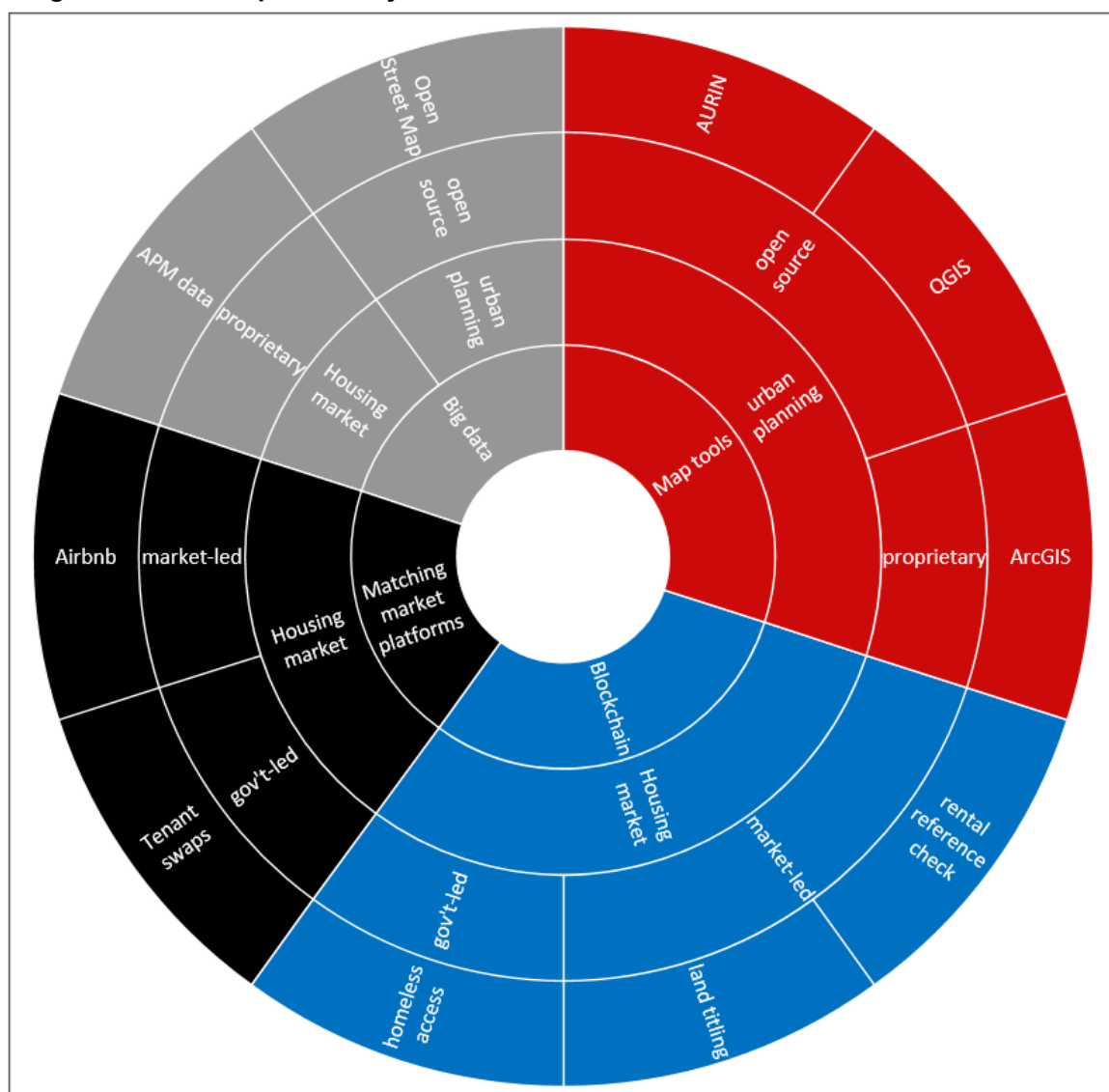
The Inquiry responds to current and emerging digital and disruptive technologies by examining the way in which they are reshaping housing markets and assistance, consumer opportunities and service provision. ‘Disruptive technologies’ were defined by Christensen (1997) as innovations that disrupt or redefine performance trajectories and consistently cause the failure of an industry’s leading players. Today, the terminology of ‘disruption’ is used more generally to describe situations where technology drives significant changes to existing practices, whether that of an industry, a market or a regulatory structure.

The focus of this final Inquiry report is to identify options for governments to be ready to respond to future disruptions, and proactively embrace technology to develop policies that promote better market outcomes and deliver more efficient and effective housing assistance.

Key findings

Disruptive digital technologies are best seen as part of an ecosystem, as shown in Figure 1 below. While this diagram necessarily oversimplifies the drivers and impacts of technological change, it nonetheless helps to highlight some shared trends amidst the seemingly chaotic landscape of fast-moving technological disruption.

Figure 1: The disruption ecosystem



Source: Authors.

The research identified four main fields of technological advancement likely to disrupt the housing sector in the near term: matching markets; big data; GIS mapping software; and blockchain (shown in the inner circle in Figure 1). These emerging technological changes present both opportunities and challenges for housing policy makers and the sector, across the different contexts shown in the middle rings of Figure 1. The most significant opportunities are:

- improved efficiency in matching markets in housing through the use of digital platforms, including swaps and transfers within social housing, an inventory of accessible housing for sale or rental, and allocation of affordable market rentals for lower income households
- improved market-led development processes, including more supply of new apartments specifically designed for owner-occupation by low- to middle-income households, and land reaggregation for precinct-level urban redevelopment and the renewal of ‘greyfield’ suburbs
- more accurate and efficient processes for property-related transactions, including property rights registers and management of private rental properties, through the use of the blockchain automated ledger system, and
- more powerful analytics to support better informed urban planning, underpinned by big data and locational intelligence tools.

However, the case study of the most advanced technological disruption to date in the housing space—the matching market Airbnb—highlights how responding to disruptive technologies has often proven difficult for government. The Inquiry research identified multiple ways in which disruptive technologies present significant, and in some cases novel, challenges for government. These include:

- **Spillover effects:** As the Airbnb example shows, disruption in one market (visitor accommodation) can have damaging spillover effects in other markets (long-term housing), highlighting the need for regulators to recognise and be ready to respond to the systemic impacts of technological change.
- **Privacy:** the responsibility to protect the privacy of citizens is a growing challenge given increasing aggregation of big datasets, and the trend towards making data open access.
- **Commercialisation:** The computing power and technical expertise required to develop these new technologies has meant that they have largely been private sector products (albeit with some notable exceptions emerging from university and non-profit collaborations). This commercialisation puts government and non-profits at risk of losing access to essential programs or datasets, or of being charged significant licensing costs.
- **Complexity:** in an increasingly data-driven world, an organisation is ‘only as good as its data’, meaning the need to ensure data accuracy is intensifying, just as the complexity in the systems needed to collect and manage this data is increasing.
- **Transparency:** contrary to popular assumptions that data-driven systems are ‘objective’, there are real risks of implicit bias being built into technological decision-making processes. This puts an onus on government to ensure transparency in its data and systems, which can be undermined by the growing commercialisation and complexity of key technologies.

Addressing these challenges will require significant financial investment and cultural change across the housing sector, but particularly within government. Such change inevitably takes time. Unfortunately, however, the luxury of time is in short supply in the context of fast-moving technological change. This means that governments need advice on how to respond effectively to disruptions in the short term, while also making the broader structural changes needed to enable them to harness new technologies and capitalise on the opportunities they offer.

Policy development options

The Inquiry has identified a number of strategies and priorities to help housing policy makers grapple with these challenges, including guidance on:

- more agile and critical policy responses to technological disruptions like Airbnb

- the importance of integrated and well-resourced data assets and infrastructure
- the changes needed to update data and privacy protection policies
- the policy frameworks required to ensure transparency of digital systems
- the key requirements for upskilling of policy makers and regulators
- strategies to manage relationships with corporate technology providers, and
- options for regulating to prevent market-based discrimination.

While government is unlikely to be well placed to pre-empt technological change, it can develop key principles and strategies—a technological change response ‘playbook’, if you like—on how to respond more proactively and productively to future disruptions. Such a playbook would include:

- key principles that should underpin responses to new technologies (e.g. privacy, access)
- steps to manage the early phases of the response to a disruptive technological change, before the impact is entirely clear
- an outline of the pros and cons of different regulatory responses for the medium-term, and
- steps for moving towards a more responsive organisational culture in the longer term.

While the details of this playbook would necessarily vary between departments and agencies, this report identifies 10 helpful key principles as a starting point (see Chapter 4).

The study

This research is part of a wider AHURI Inquiry into the potential for new technologies to disrupt housing policy. The overall question guiding this inquiry was:

How could Australia’s housing policy and assistance settings be reformed to achieve more efficient and equitable outcomes in the light of evidence on housing system impacts of first-wave change, current developments and future possibilities for digital and disruptive technologies?

The Inquiry research program was designed to equip housing policy makers, providers and consumers to engage productively with emerging digital and disruptive technologies. The Inquiry was informed by three research projects which provide a past, present and future perspective on technically-enabled change and housing and housing assistance. The first wave impacts of technological disruption are identified through the research project examining Airbnb (Crommelin, Troy et al. 2018b). The project mapping out the present landscape of new and emerging technologies outlines the likely impact of these technologies on housing markets and assistance (Pettit, Liu et al. 2018). And looking to the future, the research on matching markets leverages off the experience of change and identifies five opportunities and one risk (Sharam, Byford et al. 2018).

The question of how best to manage technological disruption remains firmly on the policy agenda at all levels of government (e.g. Australian Government 2018; Productivity Commission 2016, 2017; NSW Government 2015; City of Sydney 2016). As the Productivity Commission (2016: 1) has noted: ‘digital technologies offer opportunities for higher productivity growth and improvements in living standards. But they also pose risks of higher inequality and dislocation of labour and capital’. Public criticism of state governments’ efforts to regulate short-term letting is now likely to bring the risks of inadequate policy responses to digital disruptions into even sharper relief. The focus of this report is to identify options for governments to be more

proactive in responding to future disruptions in the Australian housing system, while ensuring that the necessary protections are in place.

AHURI

AHURI is a national independent research network with an expert not-for-profit research management company, AHURI Limited, at its centre.

AHURI's mission is to deliver high quality research that influences policy development and practice change to improve the housing and urban environments of all Australians.

Using high quality, independent evidence and through active, managed engagement, AHURI works to inform the policies and practices of governments and the housing and urban development industries, and stimulate debate in the broader Australian community.

AHURI undertakes evidence-based policy development on a range of priority policy topics that are of interest to our audience groups, including housing and labour markets, urban growth and renewal, planning and infrastructure development, housing supply and affordability, homelessness, economic productivity, and social cohesion and wellbeing.

Acknowledgements

This material was produced with funding from the Australian Government and state and territory governments. AHURI Limited gratefully acknowledges the financial and other support it has received from these governments, without which this work would not have been possible.

AHURI Limited also gratefully acknowledges the contributions, both financial and in-kind, of its university research partners who have helped make the completion of this material possible.

The authors acknowledge the significant contributions of the other researchers involved in the research projects underpinning this Inquiry, the findings from which have directly contributed to this report: Chris Martin, Laurence Troy, Sharon Parkinson, Edgar Liu, Ellie Rennie, Jake Goldenfein, Stephen Glackin, Martin Byford, Bilgehan Karabay, Sean McNelis, and Terry Burke.

Disclaimer

The opinions in this report reflect the views of the authors and do not necessarily reflect those of AHURI Limited, its Board, its funding organisations or Inquiry panel members. No responsibility is accepted by AHURI Limited, its Board or funders for the accuracy or omission of any statement, opinion, advice or information in this publication.

AHURI journal

AHURI Final Report journal series is a refereed series presenting the results of original research to a diverse readership of policy-makers, researchers and practitioners.

Peer review statement

An objective assessment of reports published in the AHURI journal series by carefully selected experts in the field ensures that material published is of the highest quality. The AHURI journal series employs a double-blind peer review of the full report, where anonymity is strictly observed between authors and referees.

Copyright

© Australian Housing and Urban Research Institute Limited 2018

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License, see <http://creativecommons.org/licenses/by-nc/4.0/>.



AHURI Research Centres

AHURI Research Centre—Curtin University

AHURI Research Centre—RMIT University

AHURI Research Centre—Swinburne University of Technology

AHURI Research Centre—The University of Adelaide

AHURI Research Centre—The University of New South Wales

AHURI Research Centre—The University of South Australia

AHURI Research Centre—The University of Sydney

AHURI Research Centre—University of Tasmania

Australian Housing and Urban Research Institute

Level 1

114 Flinders Street

Melbourne Victoria 3000

T +61 3 9660 2300

E information@ahuri.edu.au

ahuri.edu.au

ACN 090 448 918



twitter.com/AHURI_Research



facebook.com/AHURI.AUS



evid.in/AHURI_LinkedIn