

The Docklands DAO:

Reimagining precincts in a digital CBD



RMIT Blockchain Innovation Hub

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Author:

Dr Max Parasol

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Distinguished Professor Jason Potts

A New Digital City within the Real City

It is a pleasure to introduce this second report in the Digital CBD series. This report, which was produced by a team led by Dr Max Parasol, focuses on digital precincts and proposes a big new idea for regeneration.

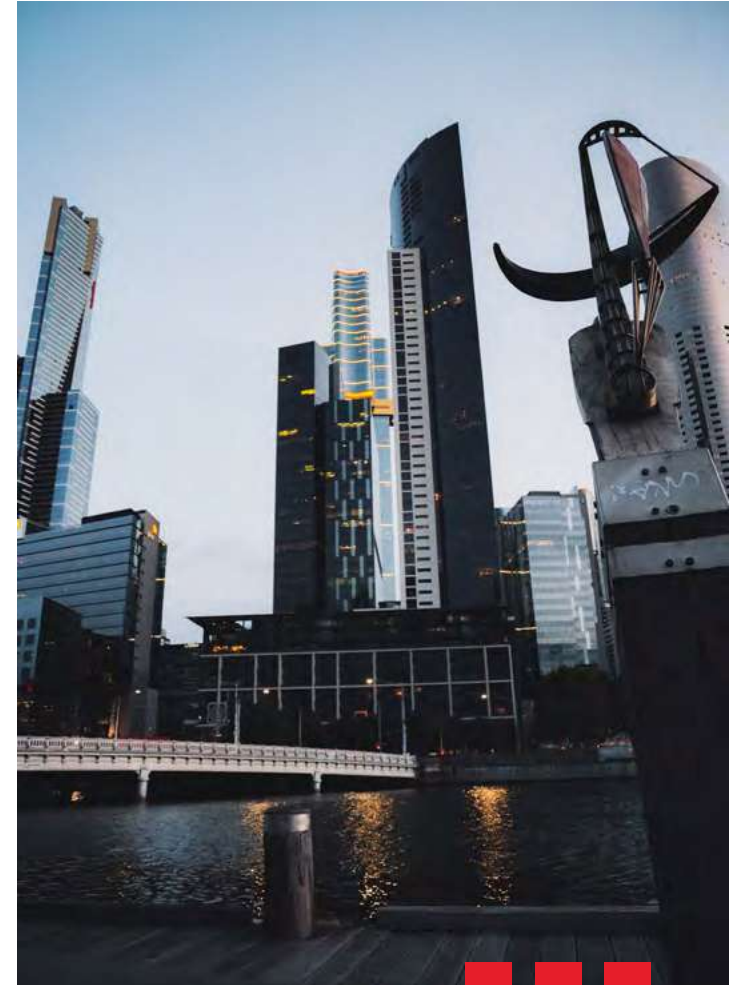
The big idea is to build a new type of digital economic infrastructure – a DAO, or Decentralised Autonomous Organisation – that will do two things:

1. It will create and manage a new local resource for the city data.
2. It will develop a new model for community participation and governance not just of that data but of all the value that is discovered in that resource.

Digital cities have moved far beyond the telecommunication-based and smart sensing hardware delivered vision of the ‘smart city’ that so captivated the attention and budgets of city mayors (and technology consulting companies) in recent decades.

The ‘smart city’ build-out of ICT and IoT-based public infrastructure has already mostly happened. Moreover, it’s impact has been boosted with a massive explosion of private distributed devices and capabilities, not just in smartphones and apps, but in all the devices that connect to the internet, whether stationary or continually on the move, that navigate the city with us. A new layer of infrastructure is emerging that builds on these base layer capabilities, and adds blockchain technologies.

But just as analog cities evolved into smart cities, those newly stood-up smart cities are now poised to further evolve into crypto-cities. This will happen as the centralised digital architecture and infrastructure of the smart city becomes increasingly overlaid with tools and capabilities to decentralise that data and its use. This transition is the opportunity that this report identifies and seeks to show how blockchain and web3 technologies





in general, but DAOs in particular, bring new ways of reimagining the city from the perspective of local community governance and creation of economic resources and discovery of opportunities.

DAOs are new forms of organisation – like a community or company, in that it mixes people and other resources into a purposeful entity that makes decisions and holds assets, but one that is in part made of smart contracts for automation, and crypto tokens for managing identity, ownership, and collective decision making. DAOs are also very new, so we are still at the early experimental stage of figuring out the best way to use them. But that itself is part of the opportunity here, to showcase Melbourne as a world leading experimental city at the vanguard of an idea and a technological opportunity that other cities will follow.

The report will explore how Web3 technologies - in particular DAOs, offer an exciting opportunity to fundamentally rethink what digital infrastructure is and what it can do. The main opportunity this report identifies is to develop new coordination tools that enable deep local community engagement in the process of creating new economic resources in a city precinct and to enable meaningful participation in the process of adaptation and development of the opportunity.

Focusing on the discovery of opportunities as the core of economic adaptation and development to new conditions is not a new idea. Hausmann and Rodrik (2002) explored this in the broader context of economic development and explained the implications for innovation and development policy.¹

This report expands that idea to local economies and city precincts. In that way, while there is a novel technology aspect to what this report proposes, that technology is just a vehicle for a new approach to community-led and community-owned discovery of new resources and opportunities with which to continuously reinvent the local economies that make up our cities. And it's that aspect that I'm most excited to see explored in this ground-breaking report.

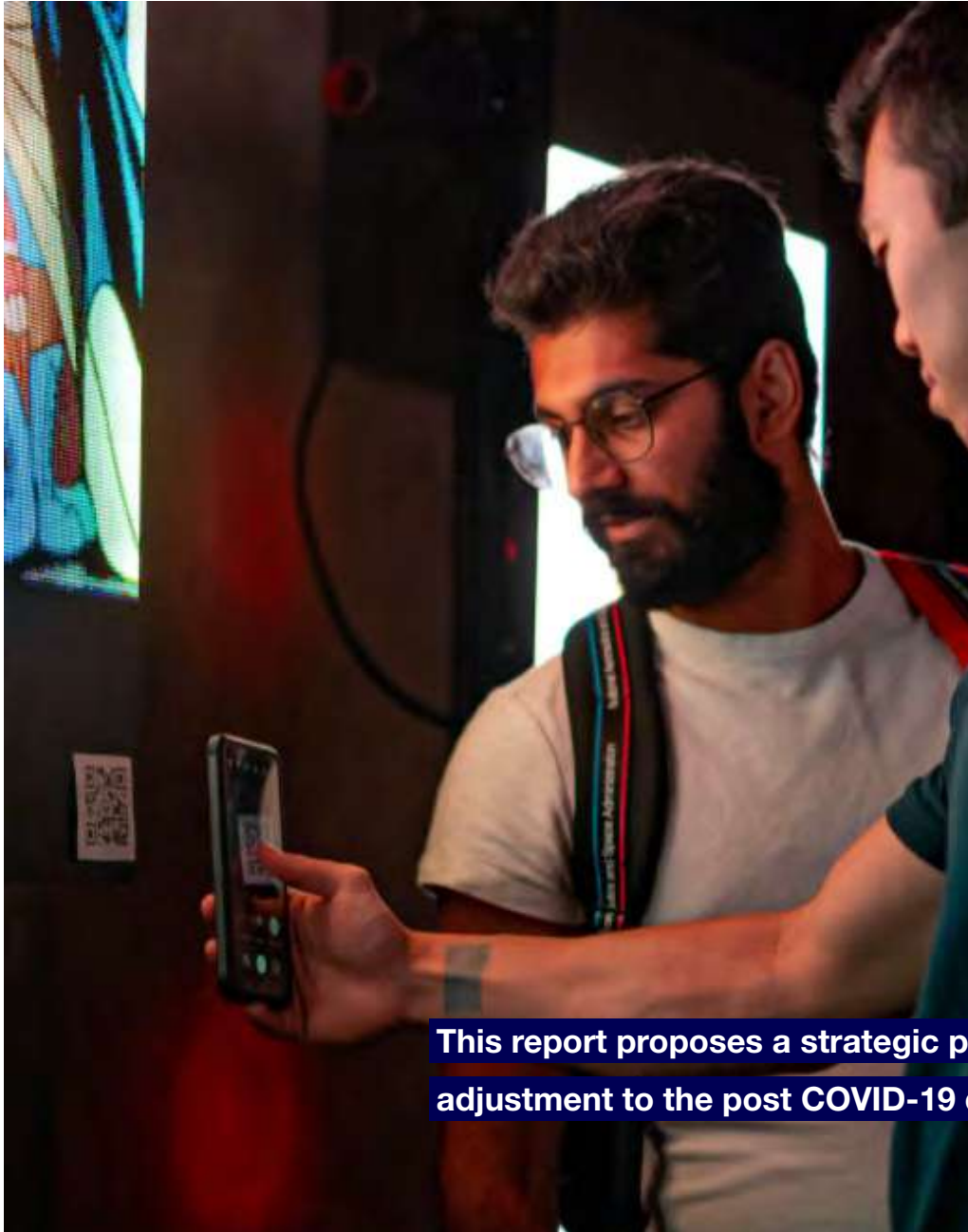
Distinguished Professor Jason Potts
Co-Director RMIT Blockchain Innovation Hub

This report will explore how Web3 technologies offer an exciting opportunity to fundamentally rethink what digital infrastructure is and what it can do



¹ Ricardo Hausmann and Dani Rodrik 'Economic development as self-discovery' (2002) <https://www.nber.org/papers/w8952>

Executive Summary



This report proposes a strategic pilot for business adjustment to the post COVID-19 digital environment.

How will Victoria's position in the global economy change as a result of a global digital update? What does the digital CBD mean for Victoria's regions and precincts? How are we establishing Melbourne as a world renowned digital city?

Our reports consider Melbourne's current adaptive challenges through the twin shocks of the rapidly accelerated technology adoption in response to the COVID-19 pandemic and the arrival of a digital economy and society. We have put forward the context for why Melbourne is in the perfect and timely position to re-imagine itself through a Digital CBD.

This report, number two, of the research series, proposes a strategic pilot for business adjustment to the post COVID-19 digital environment. We have sought deep engagement from industry, government and the wider society to develop our public policy recommendations.

The goals of this report are tangible and focused. We have noted that alongside a decline in foot traffic in the CBD and an increase in remote work, there has been the challenge for small businesses in forecasting and planning.

For example, if Deloitte's audit team only works on a Thursday - how will the Banh Mi sandwich shop in the bottom of their office building know how much stock to carry all week and specifically on Thursdays? How many extra rolls could be sold and or food waste minimised? These problems all have economic flow-on effects.

These economic shocks are all interrelated. So, alongside the problem of lowered CBD foot traffic came less customers, and then came the rent reductions. The broader economic shocks of landlord-tenant rent re-negotiations often lead to associated cash flow and working capital problems for both parties (due to reduced rents), and ultimately empty storefronts, empty buildings and a redistribution of capital.

The Solution:

The Proposed Pilot is a staged plan

This report focuses on creating a Digital CBD with a bricks-and-mortar focused reinvention as its mission; seeking to engender a new sense of ownership and shared community amongst residents, office workers and business owners in the CBD. The economic shocks caused by COVID-19 are elephants in the room. And those shocks are a notable starting point of what this new proposed model could become in time.

For example, the uptake of online delivery has changed cafe and restaurant preferences, perhaps guided more by geographic proximity rather than cuisine or loyalty. This has damaging effects on the life and atmosphere of the CBD.

Therefore this report focuses on a practical digitally-engaged solution to rejuvenating Melbourne as a human-centred destination for social and economic interaction, improving foot traffic, and boosting local commerce. All of these stakeholders are united in reinventing the city's economic prowess. Further, this report suggests that stimulus packages can be better directed.



This report suggests a staged regenerative strategy targeting specific regions and precincts such as the Docklands, as a pilot aimed at helping the businesses that need data to survive and thrive. This will help encourage the office workers and floating CBD populations to once again return to the CBD.

Stage 1

In Stage 1, this report proposes a pilot for CBD people flow and other data collections. The goal is to assist SMEs with their economic forecasting and inventory. This pilot will help forecast working capital for businesses, by observing changing labour markets.

In addition, it is hoped that the proposals will help stakeholders to understand property rental and ownership dynamics. In turn, the proposed pilot seeks to assist in creating a rental market with clearer working capital predictive models for retail, commercial and office tenants and landlords.

With a return to hybrid models of work - which may result in large fluctuations in people flow, and as people return to new patterns of weekly work, this will help provide some predictability in forecasting for a designated pilot region.

Stage 2

In Stage 2, that data will then be utilised by the Decentralised Autonomous Organisation (DAO). Retail/residential/commercial tenants could then take responsibility for their local environment: by creating a pilot Docklands Management Commons DAO ("Docklands DAO"), utilising crucial pooled data to optimise resource allocation, increase efficiency, and create opportunities for strategic placemaking.

We propose creating a DAO as a tool for:

1. Targeted economic stimulus

2. Community governance

3. Community engagement

The Docklands DAO is a non-hierarchical organisation designed to rejuvenate the Docklands precinct for all stakeholders. It will be a DAO “data trust” (see pg. 42) designed to benefit all stakeholders.²

Docklands DAO is thus the gatekeeper of all collected data that is to be used for the benefit of the Docklands DAO members and stakeholders. The concept of a DAO and the proposed operation of the Docklands DAO is explained in depth in this report.

A DAO could also assist future Melbourne City Council and State Government Docklands Dollars³ or Melbourne Money stimulus initiatives (see pg. 47). But in reality it is a step further, than a stimulus package in that it is looking to forecast long-term economic progress.

It is also proposed that there could be a “Docklands DAO digital currency” (easily convertible to Australian dollars). Corporate tenant partners (say for example developers such as Mirvac and Lendlease or the State Government), could support an airdrop⁴ of tokens to support the DAO’s membership intake and policies decisions.



“Let’s bring events back to Melbourne!” - Theo Kanellopoulos, NFT Melbourne organiser, February 2022

² This is also known as Community Driven Development (CDD), in the development literature.

³ <https://www.mab.com.au/news/lendlease-mab-mirvac-and-district-docklands-unite-to-launch-100k-docklands-dollars-3008-initiative/>

⁴ An airdrop, in the cryptocurrency industry, is a marketing ploy that involves sending coins or tokens to wallet addresses in order to promote awareness of a new digital currency.



Melbourne's regions and precincts

Through research and stakeholder engagement, this project has sought to identify the opportunities and challenges for Melbourne in adapting to the post-COVID digital economy, enhancing the recovery, boosting employment, and attracting investment to Victoria.

The COVID-19 crisis leading to remote work, accelerated the adoption of digital technology. Businesses and office workers had to suddenly leave Melbourne's CBD as remote work became a necessity. Perhaps many of the changes will be permanent.⁵

Yet, as the first report noted, this rapid move to remote work has corresponded with the dramatic increase of the use of digital innovation across cloud storage, blockchain, cybersecurity, artificial intelligence (AI), and the internet of things (IoT). The adoption of these technologies can provide an unprecedented opportunity to enhance Melbourne, the Victorian economy and create new jobs.

In this report, we seek to link those innovations in Industry 4.0, or the Fourth Industrial Revolution (4IR), discussed above, with the revitalisation of Melbourne's regions and precincts through the digital economy.

Figure 1 below highlights how the clustering of IoT, intelligent systems and data analytics are shaping all aspects of the economy, from co-ordinating labour forces to services and product provision. What this framework does not do, is tell us how we can collectively coordinate and collaborate to utilise these technologies to revitalise the places in our city. This report makes the connection explicit.

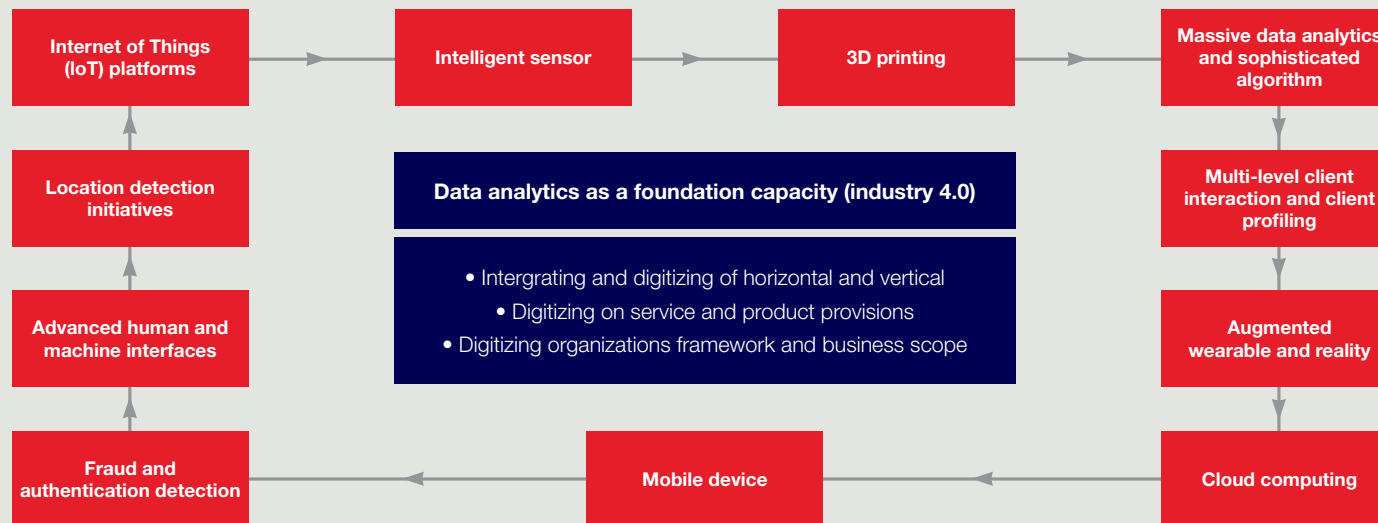


Fig.1. The framework for Industry 4.0.

⁵In the economics literature it is suggested that those with tertiary qualifications can more successfully work from home. For example, see: Simon Mongey, Laura Pilossoph and Alexander Weinberg 'Which workers bear the burden of social distancing?' The Journal of Economic Inequality 19 (2021). pages509–526 (2021).

Source: Luyanda Dube Williams, 'Concepts of Digital Economy and Industry 4.0 in Intelligent and information systems', International Journal of Intelligent Networks (2021): doi: <https://doi.org/10.1016/j.ijin.2021.09.002>

Melbourne is famed for its friendliness and its liveability, frequently topping the Global Liveability Index until recently.⁶ Yet, we are moving into what the author of this report terms an era of the digital CBD: where people may no longer enter the city every day for work, instead plugging into its pulse remotely and living in 20-minute neighbourhoods.⁷ Will the Melbourne CBD's liveability lessen as citizens take less ownership of its viability?

Melbourne is defined by its precincts. Just within the local government authority region of the CBD, we have the inner city business district and the Docklands for example.

In Melbourne, there are also districts known by their street names and cultures. Cafe streets like Hardware Lane. Street art districts like Hosier Lane. And for the high end shoppers, the Paris end of Collins Street. As the sporting, food, culture and events capital of Australia, Melbourne is known as a tourism hotspot for suburban, interstate and international tourists.

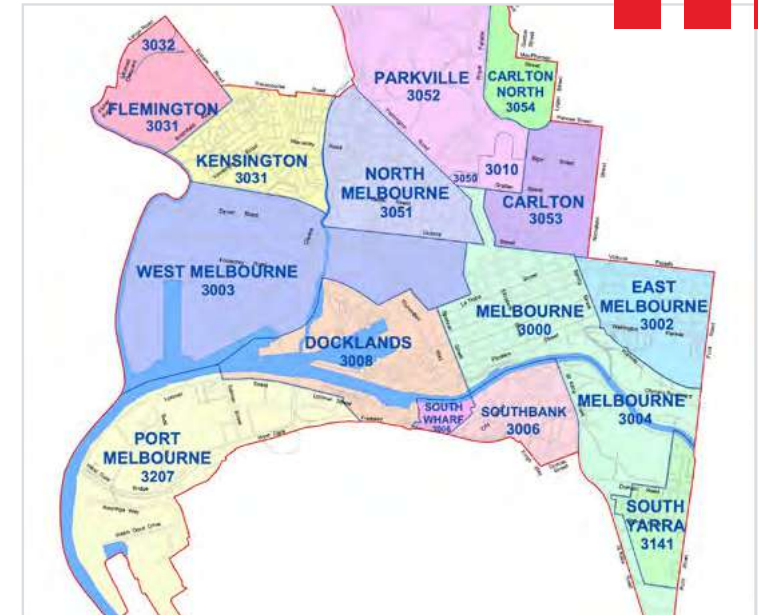
Melbourne also has a diverse and multicultural population. A Greek Precinct, China Town, Little Vietnam in nearby Richmond, and to the North, the Italian food meccas of Lygon and Brunswick Streets. Authentic food is part of Melbourne's story.

In the 2000's the Docklands Stadium was built and many corporates moved their headquarters to the Docklands precinct. (Of course, a major sporting precinct including the tennis centre, and the hallowed MCG exists in nearby Richmond). Yet the Docklands precinct, is a region that was built with wide open spaces between buildings, leaving the area feeling removed from the original dense European-style Melbourne CBD built in the mid-1800s, with laneways an identifying feature. This is part of a wider problem our proposed pilot seeks to address, how to make the Docklands feel part of Melbourne.



Will the Melbourne CBD's liveability lessen as citizens take less ownership of its viability?

There is also a university district around RMIT, that includes 87 buildings, many with unique and highly interesting architecture. This precinct also attracts the buzz of student ideas and aspirations and world-class research. And a floating international student population.



The City of Melbourne City Maps boundary system

⁶Melbourne has been slipping down the "most livable" scale for some time. Interestingly, competition is increasing with cities from NZ and elsewhere in Australia being rated just as good - if not better. The most recent outcome of Economist Intelligence Unit (EIU) Most Liveable City 2021 Rankings showed Melbourne slipping to 8th place. Before the 2021 outcome, Melbourne had been jostling for the top position with Vienna. Whilst the score differential separating the top ten places is small, Adelaide (ranked 3) and Perth (ranked 6) now outrank Melbourne. As does Auckland (ranked 1) and Wellington (ranked 4). See: <https://www.eiu.com/n/campaigns/global-liveability-index-2021/>

⁷Sveta Angelopoulos, Jonathan Boymal, Ashton, De Silva (2020) 'Economic benefits of 20-minute neighbourhoods' In: Department of Environment, Water, Land and Planning Melbourne.



Like many global cities, the pandemic may have changed Melbourne forever, but this would not be the first time.



Our city has evolved many times over the last 150 years. In the 1850's, during the gold rush Melbourne was the richest place on earth and Port Melbourne was the busiest port in the world. Over time it would evolve from a manufacturing hub to a centre of business, fashion, culture and fine dining.

When lockdowns eased again in October 2021, there was a 2000% increase in foot traffic in Melbourne's CBD as people returned en masse to participate in things they loved such as dining, shopping and entertainment.⁸

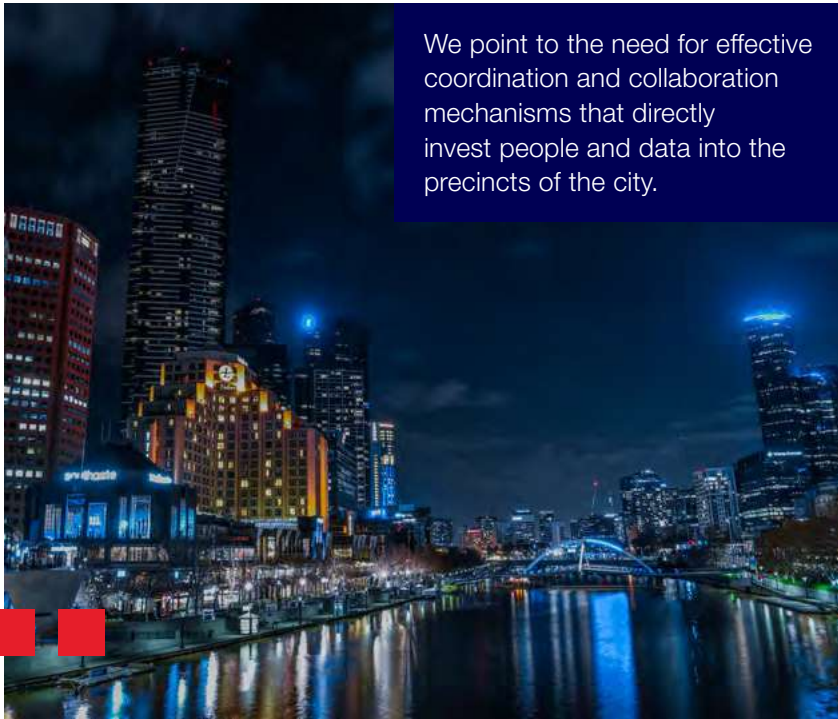
As the Omnicron outbreak in late 2021 occurred, this foot traffic would again dissipate. As foot traffic returns again, this should also make Melbourne a prime destination for businesses to again attract casual staff, including international students.

Research from this report could be used to look further into the interaction of people in the city centre as they combine their social and cultural lifestyles with the layers of technology that is required to run a successful, thriving digital city.

In 2021, Melbourne Football Club won their first premiership since 1964. It was built off of a crop of young players growing together over several years. They developed a rapid, direct and high scoring brand of football.

Like the Demons, Melbourne's CBD must embrace our diversity and our openness to encourage collaboration, innovation and Schumpeterian creative destruction. We seek to propose a data DAO to help that aim. A DAO controlling and using that data, is the major innovative idea behind this report.

⁸ <https://www.heraldsun.com.au/coronavirus/melbournes-southeast-now-states-new-covid-epicentre/news-story/3ef4994189ffdcffc0da66956ae7347>



We point to the need for effective coordination and collaboration mechanisms that directly invest people and data into the precincts of the city.

Challenges for Melbourne’s regions and precincts

The key problems facing Melbourne include empty shop fronts, the fall in foot traffic and the unpredictability of the CBD’s fluctuating population moving forward. This has and will affect revenue for businesses and consequently has caused rent reductions.

There is a genuine risk that: “the Melbourne metropolis may become a competitive disadvantage for the assets and capabilities concentrated in the inner city – which are all increasingly interdependent on the labour market, housing market, mobility systems and environmental resilience of the wider region.”

Where this report sits

within the series

This five report series focuses on the underlying trends and drivers that have led to a transition point towards a Digital CBD. The reports uncover four potential opportunities for a digital Melbourne CBD relating to **infrastructure demands, secure supply chains, digital skills and, in this report, rejuvenating regions.**

The Australian economy is currently undergoing a profound evolutionary transition from an industrial economy to a digital economy. Estimates suggest that Australia progressed five years forward in consumer and business digital adoption in around two months.⁹

This transition represents a fundamental shift in the way businesses, governments, charities and not-for-profits, workers, customers and citizens interact, and a likely permanent restructuring of the economy. The impacts of COVID-19 accelerated this transition, but the foundations of digitisation, globalisation, and innovation have been accumulating and assembling for the last two decades.

The first report in this series of five reports was launched on 1 December 2021. That report identified trends and structural changes that are impacting Melbourne in relation to technology adoption and outlined opportunities for a digital CBD as part of the development of a digital roadmap for Victoria.

This report will focus on collecting data to help create new organically successful regions in the CBD. Data planning to enable real time data so businesses can plan their inventory and marketing strategies which not only improves their income but also addresses food wastage. For example, as noted, a cafe, on the ground floor of an office building complex would fare much better knowing customer movements and digital technology can assist in these plans.

⁹ https://melbourne.org.au/wp-content/uploads/2022/02/Benchmarking-MelbReport_Final.pdf

The next report in this series: Report 3: Towards just and resilient supply chains for the digital CBD

The Covid-19 pandemic highlighted the vulnerabilities in supply chains both at the national and global levels. These vulnerabilities, and their inadequate response to shocks, exposes issues of just and fair practice and process in how supply chains attempt to sustain resilience.

One of the key problems that supply chains throughout Australia has experienced was inconsistent and sudden drops in the workforce due to isolation restrictions and sickness. The supply chain activities which are less automated and highly labour intensive were completely disrupted by the workforce supply inconsistencies. The unavailability of Rapid Antigen Tests (RATs) also contributed to further reduction in the workforce, especially related to distribution and the logistics of products.

While the local supply chains vulnerabilities are caused by the inconsistencies in the workforce, the global supply chains that support both imports and exports were hindered by the unavailability of shipping containers and freight space. The businesses have to experience significant stock delays which require them to order items as early as possible in bigger quantities. The companies also have to endure the increased shipping costs and pay the suppliers in advance for future orders.

Another problem that was highlighted due to the Covid-19 pandemic was the insufficient knowledge and control across the entities within the full supply chain networks. This 'information asymmetry' and also the 'power imbalance' that arose across the supply chain network affected the efficient decision making and overall resilience across the supply chains.



To directly invest technology solutions and data analytics into city precincts sustainably, there are specific elements that need to be in play. These include:

- community buy-in and ownership of the process;
- the investment of stakeholders in the precinct; and
- mechanisms that translate collective decision-making into direct interventions in the city space.

To support these processes, it becomes necessary to consider how the data and analytics informing all of these processes can be curated and securely held.

In this report, we turn to innovative Web3 technology and consider how a DAO can connect and coordinate people and data with place. We connect this innovative coordination technology with how more businesses can thrive with the sharing and use of better data.

Having more targeted attractions and places to visit (with those businesses having better cash flow and working capital) will lift an entire region of the CBD, supporting a cluster of economic activity.

A Digital CBD could mean that we can all still be stakeholders in the city we love. Even if we are not there everyday. Since the onset of COVID-19, the distribution of people and capital has changed dramatically. That's why this report is important.

A DAO (explained in more depth later in the report), is a quick way to spin up a governance mechanism and can adapt quickly to changing conditions. It's a knowledge coordination tool, so that decisions can be made together.

In the recommendations of this report, we investigate how a small pilot, a region of a city, can collect data for localised DAO-supported economies. Noting that the Victorian Government already has a "framework for place-based approaches" to work with communities,¹⁰ we believe that this approach is complementary to current Victorian Government policies. A DAO is a new way to manage and utilise that data transparently.



¹⁰<https://www.vic.gov.au/framework-place-based-approaches/>



The DAO
- a new coordination
technology



What is a DAO?

The above discussion highlighted that collection is only useful if that data is utilised somehow, providing a strong rationale for considering a DAO. In this section, we connect these attributes to precinct engagement and how implementing innovative Web3 technology via a DAO, can do this in a new more coordinated manner.

What is a DAO?

DAO stands for “Decentralised Autonomous Organisation”. The definition from Yalda Mousavinia, for example, is a helpful starting point. Defining a DAO as “a corporation running on the digital jurisdiction.”¹¹ It’s much more than that.

In short, a DAO is a governance model popularised by Decentralised Finance (DeFi), where members buy governance tokens to vote on how the DAO operates and spends its money.

By the end of 2021, DAOs had more than 1.6 million users, up from just 13,000 at the beginning of the year.¹²



In 2021, the US state of Wyoming legislated DAOs as legal entities, with the Republic of the Marshall Islands¹³ set to follow suit. In 2022 Australia is also considering DAO legislation.¹⁴

Importantly, DAOs are built around a mission, which can be a product, a promise, a social cause and usually still involve a desire to profit. They can be spun up quickly, around the idea that people are galvanised around a cause to act upon that mission. Such as UkraineDAO sending aid to the Ukraine in February 2022 by selling Ukrainian flag NFTs to a country where traditional banking was under attack.¹⁵ Speed of action is a key attraction for this new way of organising a workforce or member cause.

But why does being able to do this quickly seem like a good idea? What about community consultation and decision making processes? These processes can still take place at an expedited speed with adequate consultations. Yet each DAO will decide its own governance mechanisms.

DAO types¹⁶ now include operating system DAOs, protocol DAOs, investment DAOs, grant DAOs, service DAOs, social DAOs, collector DAOs and media DAOs. Yet each of these three words: Decentralised, Autonomous and Organisation can be interpreted in many ways. Therefore different definitions of DAOs can emerge if there is an emphasis on one aspect or another. In order to clarify the concept, let’s analyse each term.

¹¹ <https://www.youtube.com/watch?v=BlDxJG0sc5A>

¹² <https://financialpost.com/fp-finance/a-group-wants-to-inject-a-bitcoin-into-a-mouses-dna-and-it-isnt-even-the-strangest-dao-out-there> ¹⁴ <https://cointelegraph.com/news/marshall-islands-officially-recognizes-daos-as-legal-entities>

¹³ <https://cointelegraph.com/news/marshall-islands-officially-recognizes-daos-as-legal-entities>

¹⁴ <https://cointelegraph.com/news/australian-senators-pushing-for-country-to-become-the-next-crypto-hub>

¹⁵ <https://www.theverge.com/2022/2/26/22952357/ukraine-bitcoin-ethereum-donation-vitalik-buterin>

¹⁶ https://coopahtroupa.mirror.xyz/_EDyn4cs9tDoOxNGZLfKL7JjLo5rGkkEfRa_a-6VEWw

A. What is meant by Decentralisation for a DAO?

Matan Field, CEO at DAOstack¹⁷ argues that a DAO actually relies on a distributed governance system. This means that the exercise of power within the organisation is collective but distributed amongst the DAO community. Yet, the decentralised aspects of a DAO can be understood due to two different factors. This sheds light on the conflicting definitions of a DAO:

1. A DAO can be decentralised because it runs on a decentralised infrastructure. That it is created on a public, permissionless blockchain that cannot be taken over by another party.
2. A DAO can be decentralised because it's not organised hierarchically around executives or shareholders, and it does not concentrate the power around its leadership.



The exercise of power within the organisation is collective but distributed amongst the DAO community

Further, the Coalition Of Automated Legal Applications¹⁸ (COALA) think-tank, that studies decentralised technologies, describes the power structure of DAOs as “heterarchical”. Or based on mechanisms of cooperation without subordination:

“According to this perspective, the novelty of DAOs lies precisely in their ability to coordinate a very large number of people while avoiding the ponderousness of hierarchical structures. This characteristic differentiates them from traditional organisations on a fundamental level.”¹⁹

There are various categories of applications using blockchains to increase decentralisation, including, to:

1. Create more trusted, transparent, and verifiable versions of existing processes;
2. Implement new and experimental forms of ownership for land and other scarce assets; and to
3. Implement new and experimental forms of democratic governance.

Yet, these endeavours are not necessarily “automated”.

¹⁷ <https://daostack.io/>

¹⁸ <https://coala.global/>

¹⁹ <https://hackernoon.com/what-is-a-dao-c7e84aa1bd69>

B. The phrase “Autonomous” can be misleading

DAOs can at times reflect the most profound characteristics of a smart contract, self-enforcing and self-executory capabilities.²⁰ Thus, every transaction on a blockchain is technically a simplified version of a smart contract.²¹ How smart contracts work on the Ethereum network, is that they are less like legal contracts and more like lines of self-executing computer code decreed as ‘persistent scripts’ by Ethereum founder Vitalik Buterin.

No one can stop a decision from the outside. In theory, an essential feature of DAOs is that their operating rules are programmed, meaning that they are automatically applied and enforced when the conditions specified in the software are met. This differentiates them from traditional organisations, whose rules form guidelines that someone must interpret and apply.

“For example, imagine an organisation whose members wish to allocate funds to various projects after consultation by a group of experts. In the case of a traditional organisation, once the experts have given their opinion, employees must carry out many steps in order to release the funding, from drafting the minutes of the commission to sending the money transfer instructions to the bank. In the case of a DAO, funds are instantly transferred as a result of the commission’s approval. Nothing can stop it, neither internal stakeholders nor third parties such as banks or even a public authority.”²²

“A DAO is an open organisation that aims to most efficiently achieve a set of purpose-driven goals through the use of independent agents driven by incentive mechanisms.”²³ Simply, a DAO is a group of people who have pooled funds to accomplish a particular task. Yet, “the ultimate achievement of a DAO... is the community itself, which comes with its own set of challenges.”²⁴

The Docklands DAO is designed to encourage community buy-in. This is a way to tokenise social projects, like an Owner’s Corporation, not for maintenance but for regeneration and new initiatives.



So a DAO is not fully automated.

But automated upon approval by

the governance committee.

²⁰ Alexander Savelyev, ‘Contract Law 2.0: “Smart” Contracts as the Beginning of the End of Classical Contract Law’, Information and Communications Technology Law 26(2) (2017); Kevin Werbach and Nicolas Cornell, ‘Contracts Ex Machina’, Duke Law Journal 67(2) (2017).

²¹ <https://ethereum.org/en/developers/docs/scaling/layer-2-rollups/>

²² <https://hackernoon.com/what-is-a-dao-c7e84aa1bd69>

²³ <https://www.thewellbeingprotocol.org/about-wbp>

²⁴ <https://www.newyorker.com/culture/infinite-scroll/the-promise-of-daos-the-latest-craze-in-crypto>

Some relevant DAO examples:

Insurance DAOs

DAOs also exist in the “non-crypto” world. UK-based Nexus Mutual for instance, is the first decentralised mutual insurance incorporated as a cooperative and is driven by a DAO. They offer policies insuring smart contracts. But it’s community driven and is run entirely by its members.

Only members can decide which insurance claims are valid. All member decisions are recorded and enforced by smart contracts on the Ethereum public blockchain.

Crypto-centric DAOs

MakerDAO is a protocol for the creation of a synthetic stablecoin (the DAI), whose parameters are controlled by the holders of a network governance token (the MKR). In other words, it is a crypto native project that has a governance token that runs on-chain voting.

MakerDAO was created as an early DAO in 2016, became a Foundation and MakerDAO in 2021 and returned to being a fully-automated DAO. The global Maker community is now responsible for every aspect of the Maker Protocol and the DAO. There is no hierarchy.

Community DAOs

La Suite du Monde uses its DAOs to manage its funds and initiatives. This French project is seemingly far removed from the crypto universe. Its purpose is to provide land as well as financial and legal support to “Imagined Communes”, local, resilient, independent, self-organised cooperatives. It is a communalist movement which supports the creation of local, self-organising communities through the purchase of agricultural land,

the provision of legal, governance, technological, and accounting resources, and the generation of a federative network. **The Friends with Benefits DAO** is an exclusive social club which you pay to enter. They have a “cities” section: “Connect with FWB members in your city. From dinner parties and park takeovers to cafe co-working and movie nights, FWB will show you a new side to your city.”

Some other well-known DAOs:

PleasrDAO collects various NFTs and invests in other assets

HerStory DAO collects and funds projects by Black women and non-binary artists

The Komorebi Collective DAO funds women and non-binary crypto founders

MetaCartel Venture DAO is a for-profit business that invests in early stage decentralized applications

The corporation was the default mode of organising private sector human activity in the 20th century. DAOs might become the default mechanism for organising collaboration in the 21st. DAOs enable individuals to collaborate, manage projects, own assets, invest, and operate like a traditional organisation, but they can provide far greater levels of transparency, openness, and democratic governance.

However, there is currently no clear path for DAOs to perform three basic functions of a legal entity such as a corporation or organisation:

1. enter into legal contracts;
2. benefit from limited liability; and
3. pay taxes.

The US state of Wyoming became the first jurisdiction to legislate for DAOs, and the Republic of the Marshall Islands would follow in early 2022. Federal policymakers in Australia have begun to discuss establishing a framework for DAOs to participate fully in the economy (see page 56).

DAOs are providing a path toward community governance of various kinds of organisations, including non-profits, collectives, cooperatives, companies and investment funds. DAOs are the Web3 version of a credit union or cooperative. A community of people that contribute to the joint development of a product, say the Docklands DAO data governance model, rather than a product being engineered and then sold.

DAOs are already being used with great success to oversee the development of software protocols. They can be a highly efficient, auditable, form of governance for any kind of multi-stakeholder project.

They also create a decentralised market for talent that enables people anywhere to contribute to value creation in a truly meritocratic fashion. While not every DAO will facilitate fully transparent corporate governance, they can change the default mode for managing organisations.²⁵

For now legal structure remains a problem, in Australia (see page 56). Though there can be a corporate entity that operates the DAO, and state laws allow for the creation of a not-for-profit DAO.



**DAOs can provide far greater
levels of transparency, openness
and democratic governance**

²⁵ <https://a16z.com/wp-content/uploads/2021/10/How-to-Win-the-Future-1.pdf>

Why a DAO and not just a Co-op?

If you do not have tokenomics, it's a co-operative, not a DAO. "Distributed Autonomous Organizations are cooperatives that have been cryptomonetized."²⁶ So without tokenomics, a DAO is simply a co-op, yet, if there is no clear mission statement, and you cannot answer why a DAO is needed, then the DAO will not be sustainable.

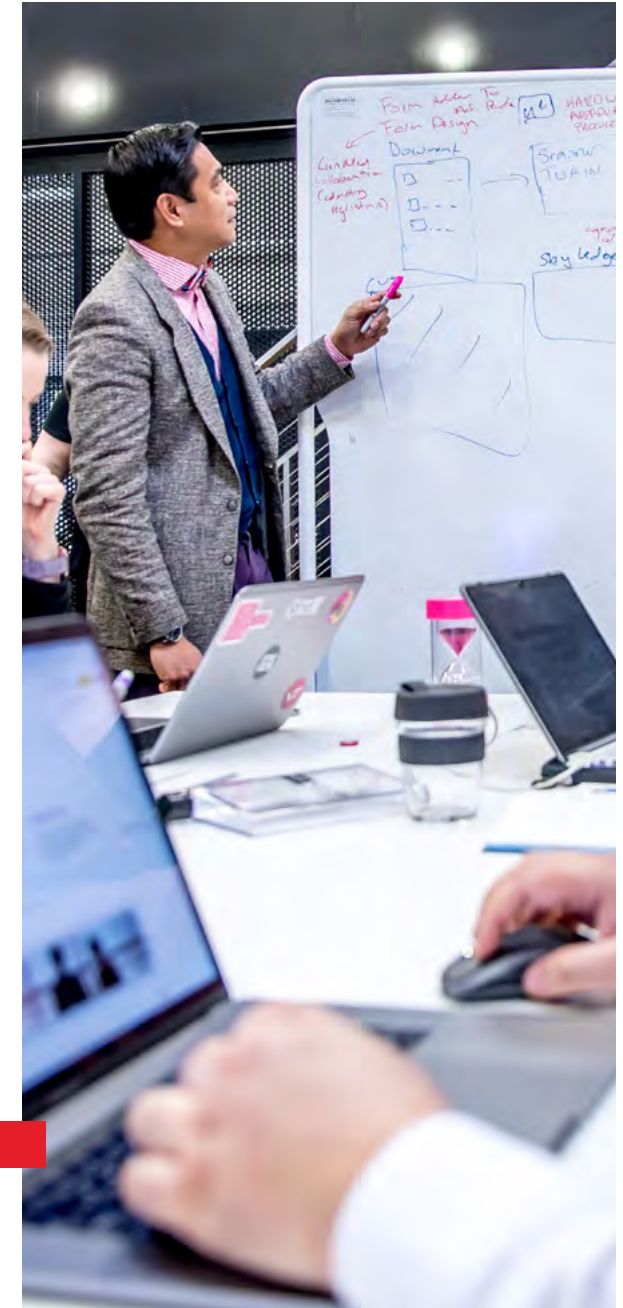
Co-operatives have a long and proud history globally. For example, Toyohiko Kagawa, the father of Japan's cooperative movement, started Co-op Kobe in 1921, which eventually grew to over 65 million members at \$135 billion in yearly turnover.²⁷ Israeli Kibbutzs are famed for idealising a socialist utopia but faced great economic inefficiencies, because things were always free.²⁸ Israeli Moshavs as a cooperative agriculture movement, allowed for collective communities but without socialist ideals.²⁹

The difference with a DAO is the ability of members to monetise participation.

DAOs are a new form of organisation. So for DAOs, the idea is usually to launch the DAO with an original product. DAOs allow for tokenized, incentivized distributed open-source contributions without borders. However, product or mission is key. Sometimes this happens in the reverse and DAOs emerge after a product is launched and the company must then find a way to transition to a DAO.

A well-coordinated DAO can get complex things done with an effectiveness that is difficult to be achieved by existing forms of organisation. So it's a vehicle for a distributed incentivised workforce. Essentially DAOs are something like productivity coordination organisms.

DAOs incentivise merit-based contributions. Those who work for the DAO make permissionless contributions and enjoy fragmented employment, benefiting from task-descriptions not job descriptions. So DAOs, are above all else, a new way of organising cooperation.



²⁶ <https://insight.openexo.com/daos-are-novel-but-not-new/#:~:text=Distributed%20Autonomous%20>

²⁷ https://jccu.coop/eng/feature/toyohiko_kagawa/

²⁸ See: Daniel Brod, 'The Kibbutzim and their Debt: Policy Considerations', Institute for Advanced and Strategic Political Studies, (5) 1990.

²⁹ <https://mfa.gov.il/MFA/AboutIsrael/Maps/Pages/Kibbutz-and-Moshav.aspx>

How does this differ from an owner's corporation?

Owner's Corporations (formerly known as the Body Corporate in Victoria/NSW) is the governing entity that looks after the Strata Scheme. Shared owners of a building managing a "treasury" for the maintenance and upkeep of their property investment or residential property. There's a lot of similarities with the DAO proposed in this report. The difference is that those elected to the Owner's Corporation usually represent a few committed individuals rather than a committed and engaged community.

Useful DAO reference points in Crypto Land

There are useful reference points for the Docklands DAO, such as DAOs that reflect an investment fund with an investment committee. While many DAOs are experimenting with novel governance structures, some DAOs have opted to replicate more traditional governance models. For example, The LAO (a limited liability autonomous organisation) is an investment DAO that closely resembles a venture capital firm.³⁰

In order to join a LAO, you must be an accredited investor. Once accepted, members discuss various projects to allocate The LAO's funds towards. When a project is seriously being considered, members of The LAO then vote on whether the project should receive funding from the LAO.

While the role of decentralised systems in supporting a robust digital infrastructure that incorporates considerations of privacy, voluntary and inclusive participation, collective practices and accountability measures to stakeholders and citizens, is nascent — there is enough evidence to support a pilot for the Docklands.

³⁰ <https://consensys.net/blog/codefi/daos/>



**Cryptocities
are emerging**





The concept of the ‘smart city’ grew out of ‘New Urbanism’ - a movement that emerged in the 1990’s to redesign the built environment to capture environmental, social and similar values. This was melded with the notion of “intelligent cities” as physical environments in which ICT is embedded into physical objects and urban settings.

The concept of a smart city is based on the insight that a city is made of people and physical things, but also data, and the management of a city can benefit from continuous flows of digital information that can be analysed and used as an input into city operations and planning.

As Goldenfein et al (2017) explain:

“The key insight of the smart city movement was that a city generates terabytes of data in the course of ordinary interactions among people, among things, and between people and things, but that very little of it is captured and used. The smart city is an approach to public infrastructure and urban governance that seeks to capture and use that data in real time to improve the effectiveness of the city’s operations.

The implication is that by developing ‘smart infrastructure’ that can sense the activities around it, better and more efficient use of urban resources becomes possible.”³¹

Smart city agendas emphasise the importance of data in the coordination of city operation and life, and offer the prospect of better governed, higher functioning, and more liveable cities as a result of investment in smart city technologies. But the Smart city agendas that arose during the past two decades or so involved centralised collection, use and governance of city data. The next evolution of the smart city is to create and build tools to gather and use this data in a natively decentralised form, that is, without centralising that data.³² A cryptocity is a Smart City on a blockchain. That is the fundamental meaning of a cryptocity as the next phase of evolution of the smart city.

³¹ Jake Goldenfein, Jason Potts, and Ellie Rennie ‘Blockchains and the Cryptocity’ *Information Technology* 59(6)(2017), pages 285-293.

³² Darcy W E Allen, Chris Berg , Kiersten Jowett, Mikayla Novak and Jason Potts ‘Cryptoeconomics of cities, data and space’ *Cosmos and Taxis*, 8(8-9)(2020) 117-129.

We have also looked to other cities' recently leading innovative approaches when integrating crypto and blockchain technologies into governance practices and city functions. Including Seoul's move into the Metaverse, Miami City and its initiative to become the world's crypto-capital and New York's plan to establish a city-wide cryptocurrency.

Many cities around the world have recently launched their experimental ideas.

Notably Seoul as a virtual Metaverse that will even have a mayoral office.³³ Miami seeks to become a hub for Bitcoin with its MiamiCoin notably grabbing headlines.³⁴ New York then proposed its own NY cryptocurrency³⁵ in response to Miami's. Bold digital visions are being created right now. But they are not entirely new. Vilnius made its mark in 2018, launching a blockchain hub in the Lithuanian capital.³⁶



Additionally, there are pilots underway that explore the different ways cities can harness the supercluster of technology to provide rapid responses to long-running problems and changes in people's underlying needs. These pilots are the beginning of what Ethereum founder Vitalik Buterin refers to as "Crypto Cities". Where Web3 technology is used to support these pilots given the mainstreaming of crypto ideas such as coins, NFTs, and DAOs.

Existing projects include:

- CitiCoins, city tokens that form a local medium of exchange linked to the city government;
- selling tickets to Art Festivals as NFTs; and
- creating crypto-oriented cities from scratch (CityDAO).

Given that smart city initiatives often raise concerns around centralised governance, lack of transparency and data privacy, blockchain and cryptographic technologies are a promising key ingredient for a more open and participatory way forward.

³³ <https://cities-today.com/seoul-the-blockchain-city/>

³⁴ <https://www.forbes.com/sites/marisadellatto/2021/11/03/mayor-elect-eric-adams-wants-to-create-a-new-york-city-cryptocurrency/?sh=7edf76a55886>

³⁵ <https://www.nytimes.com/2021/03/23/business/dealbook/miami-suarez-crypto.html>

³⁶ <https://blockchaincentre.io/>

The key question according to Buterin³⁷ is how to make sure “economic alignment” can occur between the stakeholders in a city. “Can we create cities that have more economic alignments inside them?” This remains a key task for the Docklands DAO.

“City coins are [only] one example of what can be done. But then there is the question of who does them?” noted Buterin. This is where the non-hierarchical structure of DAOs, if created using an appropriate structure, can help to create economic alignment synergies. You can either have some governmental input or not, such as city-defined legal inputs. Or it can be an autonomous grass roots community motivated by good will to build an organic city district. In order to “empower people” you need to create a framework that is supportive of them”. But to actually “make it happen. You need lots of people working together.”

Further Buterin believes that “coin voting” is not the way forward for real-world DAO governance such as a city DAO. DAO governance can now rely on a suite of technology mechanisms. Voting needs encryption (so voting is anonymous), zero knowledge proofs³⁸ (to make sure voting counted correctly), and blockchain to make sure “whoever is counting the votes is not censoring anyone”.

He also suggests experimenting with quadratic matching voting to gauge public support for an idea. Creating a “high bandwidth democracy” and zero knowledge proofs that you are a unique human being voting.

He believes these new city DAO systems should start with small regional pilots for experimentation. But “what kind of public goods will people find valuable?” He asked. “For example you could have a Gitcoin Community grants programme for businesses in Boulder [Colorado]?” That may be a “public good, that the community simply supports”.

³⁷ <https://www.youtube.com/watch?v=Geg2-ru5eik>

³⁸ In cryptography, a zero-knowledge proof or protocol is a method by which one party can prove to another party that a given statement is true without conveying any additional information apart from the fact that the statement is indeed true.

³⁹ The Gitcoin platform is designed to fund and coordinate open source development by novel means such as quadratic funding.



What is

Quadratic Funding?³⁹

Matching pool is raised. Then a crowdfunding campaign is matched according to a Quadratic Funding algorithm:

- Crucially, the number of contributors matters more than amount funded
- Quadratic Funding pushes voting power away from central power brokers and large token/shareholders

It also helps to guide public goods funding decisions more democratically

Recommendations



The primary recommendation of this report is to explore the utility of a DAO in helping to revitalise city precincts through the increased coordination of city planning efforts. There are limits to the current ways key processes associated with a precinct occur, particularly data collection and utilisation, which a DAO has the capacity to both solve and transform.

Principally data held in centralised siloes now can be better utilised. Data can be a resource that is both produced and consumed in a city, but through the DAO it can become a trusted new economic flywheel. Innovation can be found in the pools of data collected by and for the DAO. Importantly, the DAO can also create further incentives to upload data.

Unstructured data may have increasing or decreasing returns, but we argue that a DAO can better integrate Industry 4.0 with the digital economy of a precinct and act to re-engage and revitalise the community, the precinct and its stakeholders through community building, governance and economic incentivisation.

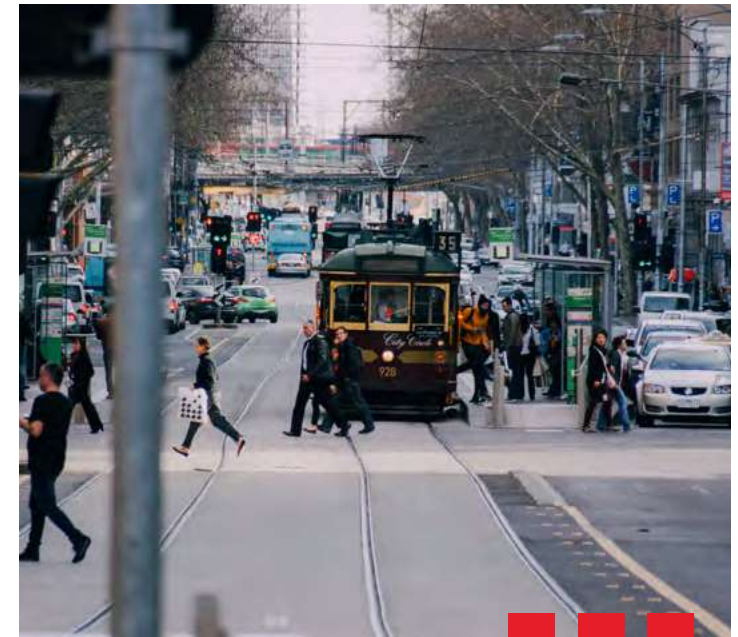
Yet data collection can also be a trade off for data privacy. However, the Docklands DAO is designed to create a data trust with key mechanisms for establishing a data commons with in-built security mechanism and time-locks (see page 42). The Open Data Institute defines a data trust as a 'legal structure that provides independent stewardship of data.'⁴⁰ This DAO data commons is designed to extract economic goods.

⁴⁰ <https://theodi.org/>

The Docklands

This report suggests looking at ways to rejuvenate the Docklands. Accordingly, it is suggested that the first proposed pilot DAO take place in the Docklands. The Docklands precinct has long felt different for the residents of Melbourne who are accustomed to laneway-style European-high density living.⁴¹

Though we should not overstate the magnitude of the problem. Residents have noted increased activity in the Docklands area during COVID-19, whether it be activity on the basketball courts or kayakers⁴² on the bay. Reportedly, more lights could be seen at night in the apartment buildings.⁴³ This could be parlayed into greater economic and cultural activity. We have encouraging support from the Melbourne City Council and the Docklands Chamber of Commerce for this proposal.



CBD North

Another potential location for a Management Commons DAO is the CBD North precinct. While this document focuses on the Docklands, as a digestible case study for ease of reading, CBD North is another strong potential option.⁴⁴

In fact, RMIT's CBD North campus received a Victorian Government investment renewal project grant in June 2021, of \$44.6 million. Perhaps some of these funds could be utilised in an experimental DAO pilot?

Existing plans for the CBD North precinct include the development of a social innovation precinct, bordered by Lygon, Victoria, Swanston and Queensberry Streets. There are plans for a research, ideas, skills and new technology precinct there. This connection with RMIT also makes a great site for a future DAO pilot, as universities can play a key role in building and activating these pilots.

⁴¹ <https://cur.org.au/news/collaboration-needed-to-avoid-urban-white-elephants-expert/>

⁴² Companies offer Docklands kayaking tours: <https://www.kayakmelbourne.com.au/tours/moonlight-kayak-tour/>

⁴³ Interview with a Docklands resident, February 2022.

⁴⁴ <https://www.rmit.edu.au/news/all-news/2021/jun/cbd-north-renewal-project>

Why a DAO for Melbourne's precincts?

A DAO can adapt quickly to local conditions, as a quick way to spin up a governance mechanism. It's a knowledge coordination tool, so that decisions can be made together. The DAO can quickly ask, offer and execute questions like:

- Should the DAO offer grant funding for 50 per cent of eligible costs to modernise buildings of up to \$30,000 per project?
- Can the DAO find participants for the existing Shopfront Activation Program?
- What events will draw people to the Docklands precinct?
- Should the DAO lobby Melbourne City Council (though the Melbourne City Council would hopefully join the DAO) for a retail regeneration study?

For DAOs, the idea is usually to launch the DAO with an original product, say a cryptocurrency, an IT protocol or a VC-like investment fund like FlamingoDAO. In the case of the Docklands DAO, the DAO would pay (through its members), for bespoke data collection and research and then the DAO's membership would decide what to do with it.

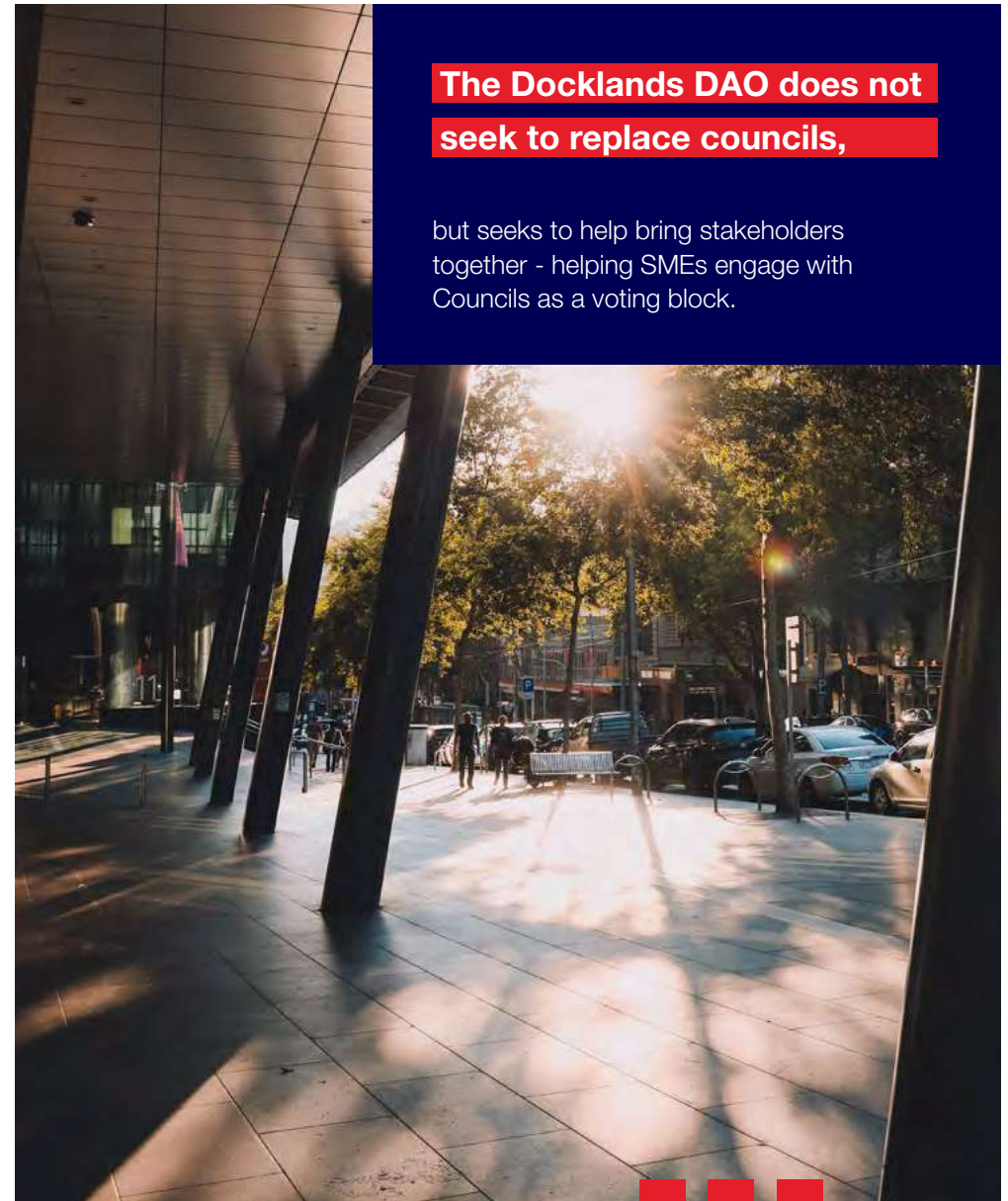
In this proposal, the Docklands DAO is the 'data research commons'. Over time the DAOs will fund and engage in wider community building.

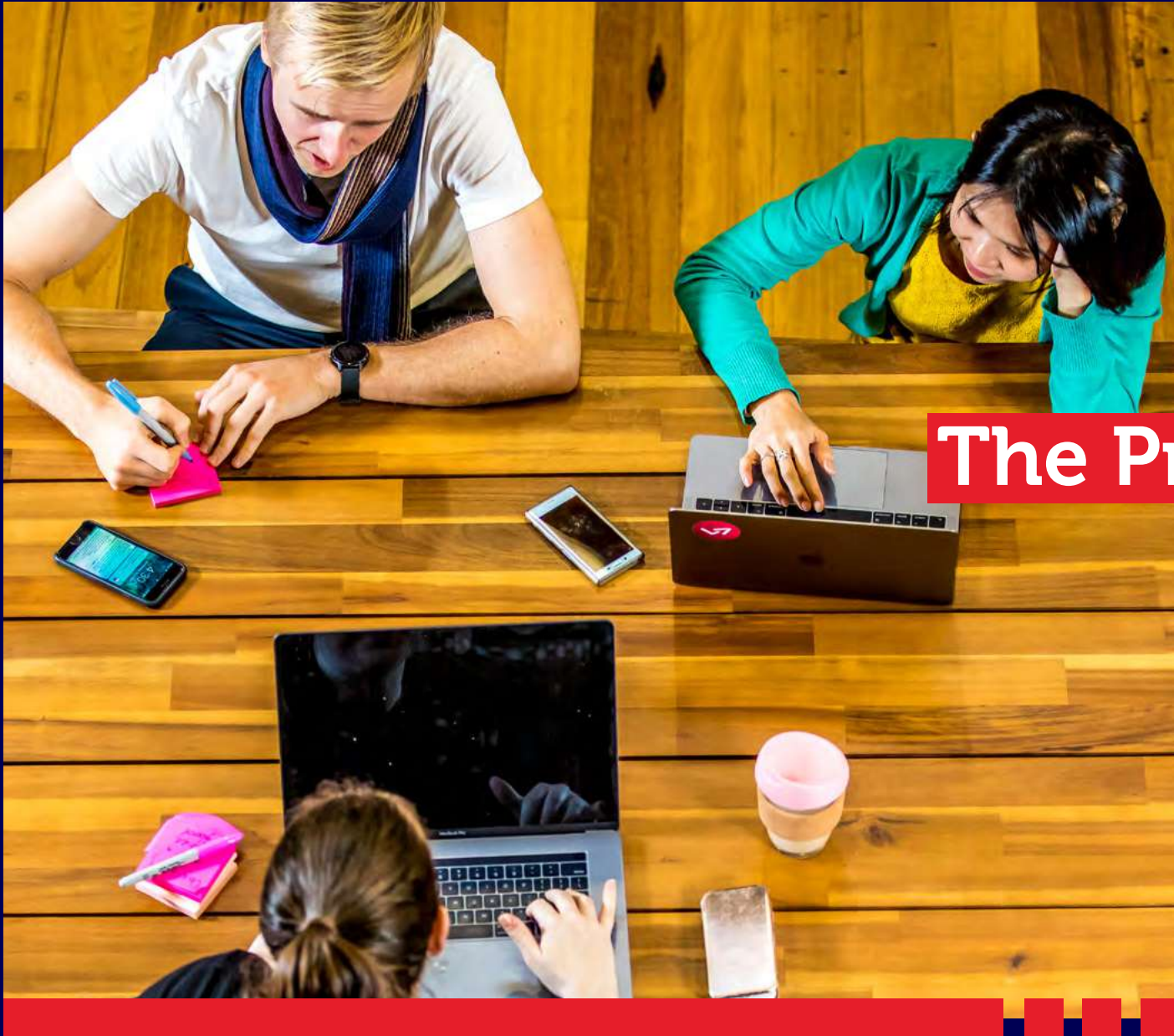
The more knowledge the system acquires from diverse sources, the better outcomes this makes for. This is also a rights-based story, more knowledge, better decisions, but also more diversified stakeholders.

A DAO is a proper way for the community to own their destiny. The DAO is activist, and tokens are earned based on activity, not ownership and where chambers of commerce may be closed to non-commercial members. The Docklands DAO brings everyone together to have a say. If blockchain technology was available, we could have made body corporates and chambers of commerce DAOs in the past.

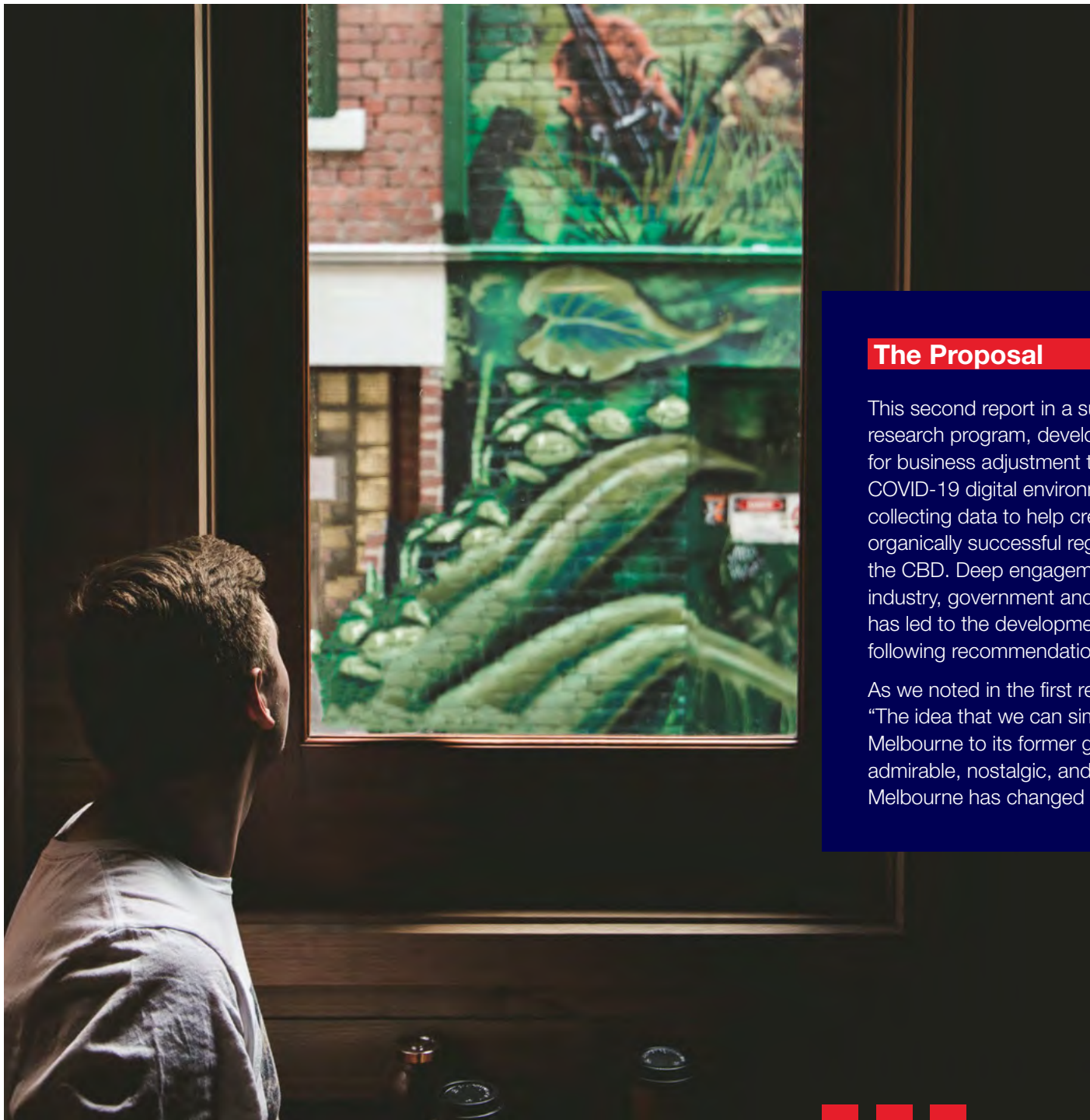
The Docklands DAO does not seek to replace councils,

but seeks to help bring stakeholders together - helping SMEs engage with Councils as a voting block.





The Proposal



The Proposal

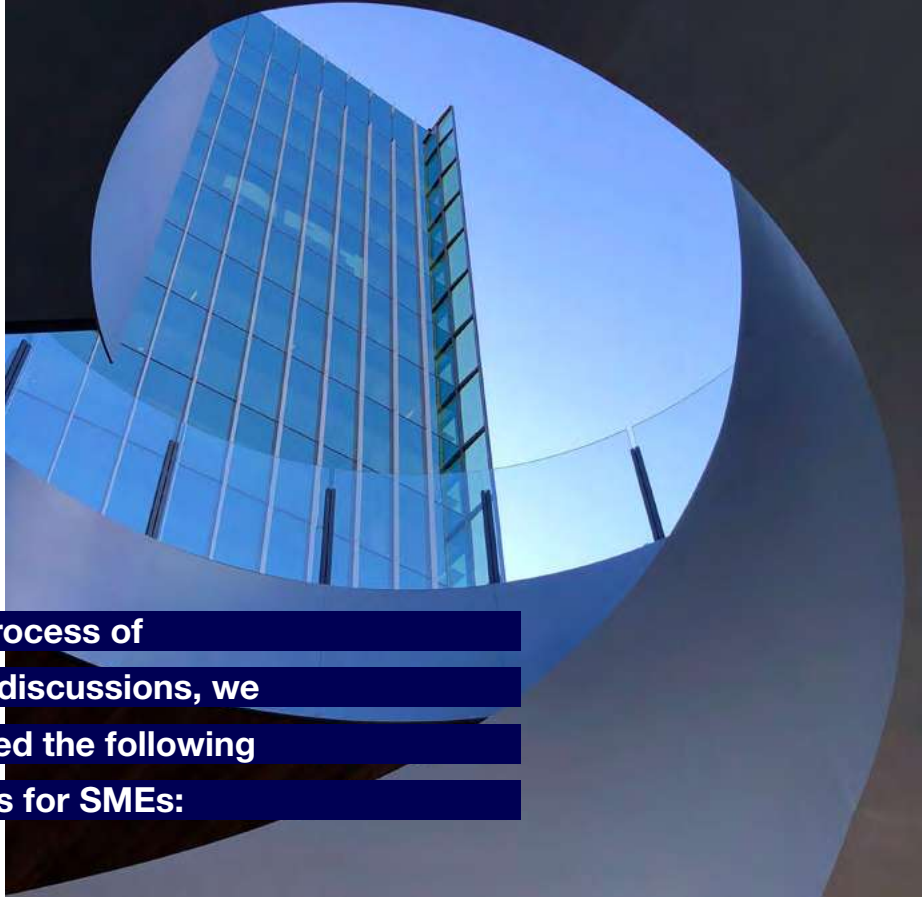
This second report in a substantial research program, develops a plan for business adjustment to the post COVID-19 digital environment, collecting data to help create new organically successful regions in the CBD. Deep engagement with industry, government and society, has led to the development of the following recommendations.

As we noted in the first report: “The idea that we can simply return Melbourne to its former glory is admirable, nostalgic, and mistaken. Melbourne has changed forever.”

Melburnians now have different preferences. They want to work, socialise, care and collaborate in different ways. Yet, any proposed solution must be grounded in reality. Tech is fashionable. Buzzwords abound.

This proposal seeks to create a model for collecting data to help create new organically successful regions in the CBD. That data is very useful to the SMEs that need patrons to maintain the working capital to survive.





Through a process of stakeholder discussions, we have identified the following key problems for SMEs:

1. The economic flow-on from tenant rental discounts and vacancies.
2. Retailers/food & beverage businesses can not forecast inventory and perishable stock due to large working-from-home populations.
3. The Docklands is disconnected from Melbourne CBD, though it houses many corporates office towers.

The Proposed Approach:

Retail/residential/commercial tenants will take responsibility for their local environment by creating a Docklands Management Commons DAO or a Decentralised Autonomous Organisation (DAO) (“Docklands DAO”). The Docklands DAO is a non-hierarchical organisation designed to rejuvenate the Docklands precinct for all stakeholders. (Again, another viable option would be a pilot in the CBD North project.)

Docklands DAO is the gatekeeper of all collected data that is to be used for the benefit of the Docklands DAO member and stakeholders. Consider a body corporate, where owners are invested to look after their property. Within the DAO framework, extend this to an army of active and motivated stakeholders, and a mission to work together to create a much-loved precinct, that is of itself, a destination for all Melbournians to enjoy. This is not about collective ownership but a shared responsibility to take ownership for the life and wellbeing of a precinct. But why did the Docklands precinct previously fail to do this and how will a DAO solve this problem?

This Docklands DAO will use data to interpret the people flow, property rental and ownership dynamics, and consider the role of regional ownership in shaping their associated economic impact to build an organic community. While data alone cannot solve the problem, a central repository that can be analysed openly by everyone could prove useful. Conversations about data, open innovation and creative commons need a mechanism for utilising that DAO. As the DAO is that new repository that includes governance mechanisms.

It’s also highlighted below as to how this new model is appropriate and can effectively build upon the conception of a body corporate, and a step beyond a classical Kibbutz or Moshav.⁴⁵

The Docklands DAO is a non-hierarchical organ designed to rejuvenate the Docklands precinct for all stakeholders...

⁴⁵The features of a Kibbutz or Moshav that link to what a DAO could do for community engagement and ownership is explained on page 23.



Investment of stakeholders in the precincts

Investment is broadly defined in this report, not just in terms of money, but industry engagement, technology development and deployment, governance and a shared desire to see a precinct thrive.

Community buy-in and ownership of precincts

With a DAO, you bring people on board and give them a sense of ownership of the processes and outcomes, and you achieve a solution that gets uptake and translates into good outcomes for engagement in precincts.

A Two Part Plan for

the Docklands DAO

We believe the three problem areas this report targets;

- SME working capital planning;
- forecasting the economic activity for retail/rental spaces;
- Docklands rejuvenation;

Can effectively be addressed in a single pilot. The problem is that, in reality, most of this data is siloed by platform ownership and commercial gatekeeping – meaning very little data is actually owned by or available for public use.

There are two parts

Part 1: Anonymised local people traffic data to be collected and analysed with clear metrics.

Part 2: the Docklands DAO becomes the gatekeeper of all collected data and uses it to value-add to the precinct through generating cost reductions and resource efficiencies, via information sharing, transparency, community driven placemaking.

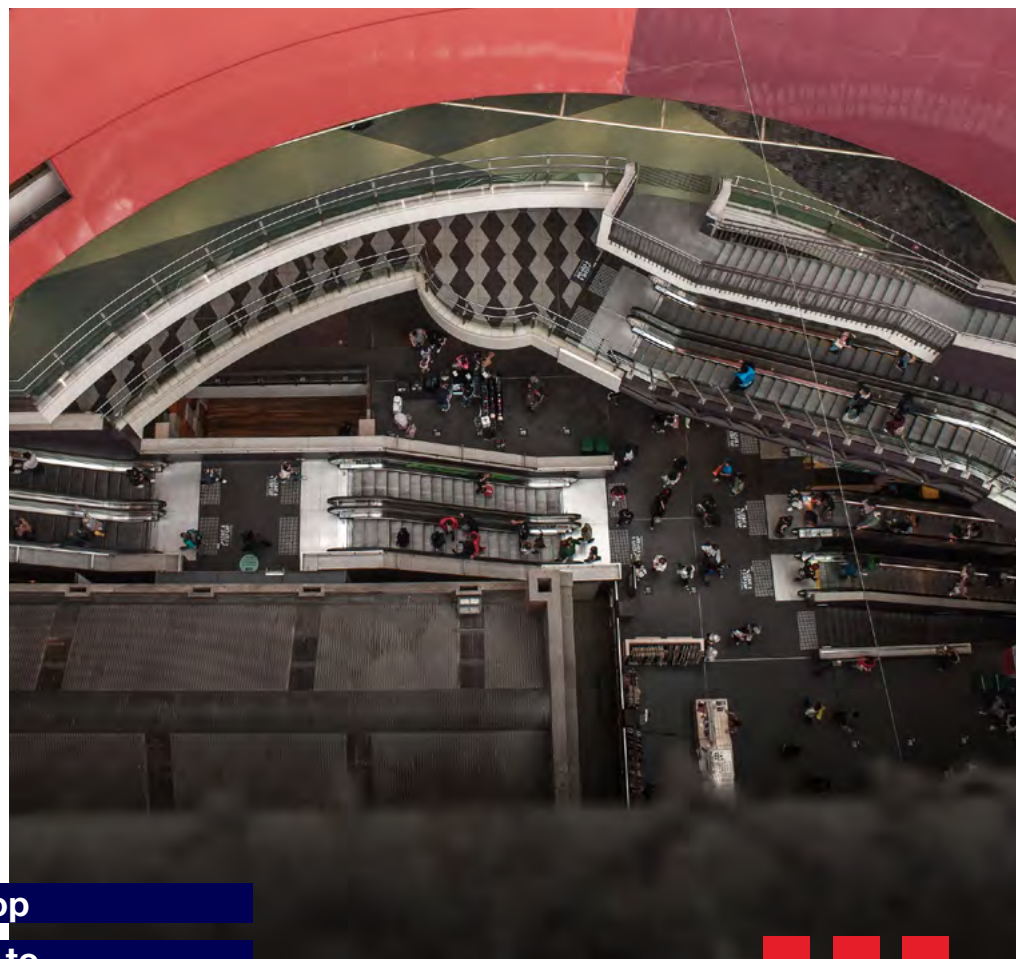
We propose geo-fencing the Docklands precinct to anonymously discover the mobile phones of people who frequent the area. Sensor data across Melbourne is already publicly available. The question is how to tag, categorise and make that data relevant and usable. Geo-fencing is more relevant where there is a clearly defined precinct and a clear mission for why to collect that data.

The ultimate goal is to develop a bespoke profile of the area to benefit the Docklands DAO. For example, one end goal may be for the Docklands DAO to help tailor retail offerings to passersby through the Docklands DAO. Then a local café can start to better plan the volume of perishable ingredients to buy on a given day. For example, Propella.ai, is a Melbourne proptech start-up that:

“Leverages big data and proprietary algorithms to analyse and profile the people using your assets. This can assist you in tailoring the amenity and services that are more likely to meet your unique customer needs, drive customer retention and long-term asset value.”

In a previous engagement, prepared in November 2021, they mapped out ways to regenerate Fitzroy St, St Kilda.⁴⁶ The report provided data research on “who the local residents and visitors are, along with the unique commercial ecosystem in which your retail precinct is located.” The data surveyed retail trade, neighbourhood, visitor and precinct analysis.

**The ultimate goal is to develop
a bespoke profile of the area to
benefit the Docklands DAO.**



⁴⁶ Fitzroy St St Kilda, Retail Precinct Analysis, Propella.ai, 16 November 2021.

The Propella.ai Methodology

1. Geo-Fence the Location

A geo-fence is a virtual border for a geographic area.

A geo-fence could be dynamically generated (as in a radius around a point location) or match a predefined set of boundaries (such as the Docklands stadium precinct or a neighbourhood's boundaries).

So the first step is to geo-fence an area (e.g. the Docklands precinct). Then mobile device activity is analysed according to an agreed upon set of metrics.

2. Classify the Usage Within the Area

Propella.ai then runs proprietary AI algorithms across the sample mobile event data. Devices are classified based on the frequency of use, days of the week and hours of the day observed for the device being used. Statistical analysis can then determine if the device is associated with a Resident, Worker or Visitor to the area.

3. Map Approximate Home or Office Locations

An approximate home or office location for each user device can be identified and used to generate user specific benefits.

4. Customer Profiling

This part relies on Psychographic Analysis – using home locations, psychographic profiles can be assigned to Residents, Workers and Visitors to impute their values, attitudes, attributes and likely behaviours.

The Demographic Analysis is added for additional user insights, such as age, income, and country of birth.

Importantly, People Movement Analysis, including identifying activity hot spots and defining a catchment area of where the primary users live and work can be compiled. All of that data will then be controlled by the Docklands DAO in a data trust (its operation is explained on page 42), and then used for voting on proposals for local projects.



**Perceptions of privacy is crucial
to successful geo-fencing**

Privacy remains a pivotal aspect of this pilot, across its entirety, but particularly within the geo-fencing elements. As will be further demonstrated in our forthcoming report (number four in this series) on cybersecurity and digital skills for Melbourne. Our systems must engender trust in their utility, accessibility, inclusiveness, fairness, cybersecurity and privacy.

There are also crypto-native spatial/location projects such as FOAM, that could be utilised if required by a particular pilot.⁴⁷ FOAM is a Web3 application that creates “permissionless and privacy-preserving network of radio beacons that is independent from external centralized sources and capable of providing secure location verification service.” Think Google Maps as a decentralized product not controlled by Google or another centralised operator.



**But, seriously, why would people
agree to data anonymised collection?**

Problematically, these specific data sets will also provide a real world data feed (a “data oracle”) for the Docklands DAO to make decisions for the area. Yet, this is all about community buy-in to regenerate a region. The Docklands DAO will integrate data from all retail businesses in the Docklands precinct to create a data pool that can be used for business decisions, analysis, and planning.

Businesses can also help each other thrive through the Docklands DAO. Offices, retailers, food and beverage businesses need foot traffic to thrive. We are not proposing to build a corporation to farm and exploit data – we are proposing a new form of community. A new form of socio-technical organisation through which collective action can occur.

For a DAO to survive, there must be a shared mission. One that is motivating enough to endure. Now we will explain how that mission can eventuate. Our explanation of the Docklands DAO as a data trust on page 42 will also help allay any lingering privacy concerns.

⁴⁷ “FOAM’s mission is to build a consensus driven map of the world, empowering a fully decentralized Web3 economy with verifiable location data. FOAM incentivizes the infrastructure needed for privacy-preserving and fraud-proof location verification. The starting point for FOAM is the FOAM Map, where a community of Cartographers curate geographic Points of Interest on the FOAM map. Through global community-driven efforts, FOAM’s proof of location protocol aims to enable a permissionless and privacy-preserving network of radio beacons that is independent from external centralized sources and capable of providing secure location verification services.” See: Foam.space

Case Study:

The Propella.ai Methodology Part 1

Trade Area Analysis

Propella.ai uses geo-fencing technology to identify a statistically significant sample of visitors to a retail precinct, identify their approximate home locations and then runs their proprietary algorithm to define and map the trade area for a retailer or other precinct. Propella.ai then assesses changes in the trade area, such as the impact of COVID-19 on visitation, as well as weekday versus weekend visitation.

Neighbourhood Analysis

Propella.ai analyses a 20 minute neighbourhood, for example, surrounding a retail or other precinct to help understand the unique local area in which it is situated. Propella.ai carries out demographic and psychographic profiling of the residents that live within the 20 minute neighbourhood and measure how effective a retail precinct is in attracting these local residents.

Precinct Analysis

Propella.ai anonymously identifies a statistically significant sample of residents who live within a proposed 20 minute neighbourhood, then analyses local resident visitation to a retail precinct to identify the busiest times, days and locations they are using within a retail precinct. Propella.ai analyses and compares local resident visitation to nearby competing precincts, including mapping the hotspot areas and providing business counts by retail category to help stakeholders understand why the customers are visiting these different locations.

Visitor Analysis

Using a similar method to the Precinct Analysis, Propella.ai identifies visitors (i.e. local neighbourhood residents plus destination visitors) to help you understand where they are coming from across the city, what type of people they are and the different levels of visitation observed across the competing retail precincts.





The Propella.ai Methodology Part 2.

Roy Morgan's Helix Persona

Propella.ai uses Roy Morgan's Helix Personas, which are derived from the most detailed consumer research in Australia. This involves approx. 60,000 face-to-face interviews conducted annually with a cross-section of people from across Australia. Their platform contains the most sophisticated psychographic segmentation data in the country.

Helix Personas have been developed by applying a segmentation model to the consumer research data. They divide the Australian population into 54 individual value segments –Helix Personas –that are grouped into six Helix Communities.

The values, beliefs and attitudes identified within each Helix Persona are the best predictors of consumer behaviour. By associating identified precinct visitors with a Helix Persona, we can leverage these predictors to most effectively identify and define amenity, services, messages and experiences to resonate with customers.

The following seeks to explain the “Docklands Management Commons DAO” (The “Docklands DAO”), the notion of collective ownership, consent for a shared data pool, and the importance of community building. It starts to answer why people would agree to data collection, even if it is anonymised.

A Decentralised Autonomous Organisation, or a DAO is the perfect model for this proposal. This is because a city region, say the Docklands, requires multiple motivated and incentivised stakeholders to be a success. So why has this failed so far? Is collective responsibility a reason why the Docklands precinct has previously failed to excite Melbournians?

The Docklands DAO is a different concept to a body corporate or a collective (as explained above) because as you move to a digital economy you still retain a sense of place through having a regional DAO membership. There is now a different work life, but places still need to find a critical mass of people to support the urban economy.

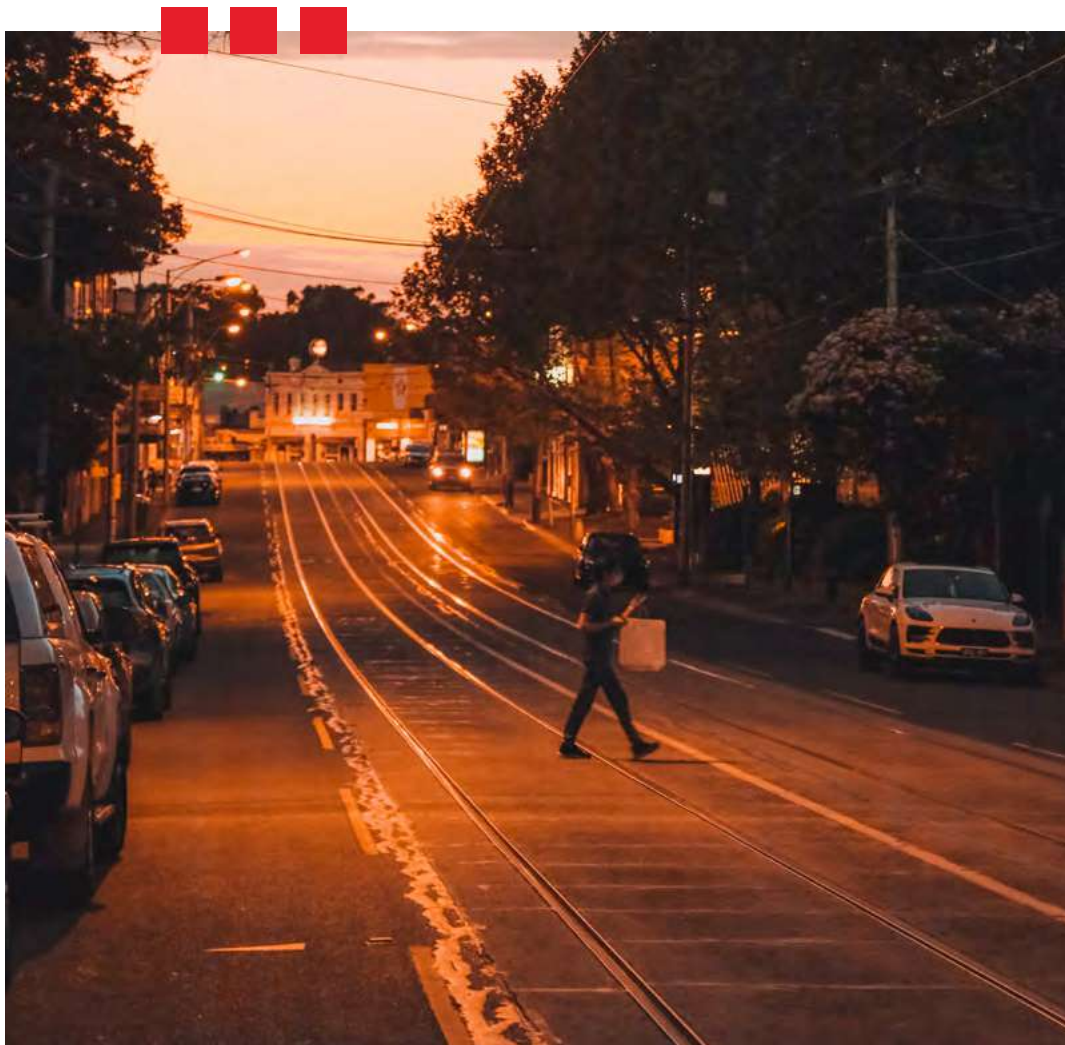


DAO members would buy into a responsibility to an amenity of a rich working environment.

Displaced by digital exchanges, people are already seeking out life and events again. What the following proposes are literally decentralised cities. Regions of a city that offer localised DAO-supported economies. A sense of place, of care and connection to a small area even if people are working remotely part or most of the time.

This is more than a numbers game. More than just foot traffic. We are proposing that if you work, live and play in an area, its long term planning benefits your investment, mental health and daily happiness index.

We propose experimenting throughout the city of Melbourne, one pilot at a time. To learn and experiment as we go. Let's start by explaining the DAO further as to why this is an appropriate solution.



So the next question is what sort of DAO is the Docklands DAO? In a digital economy, data is a prime economic resource for production and innovation. In the context of various stakeholders working together to build a region, a data trust makes sense. Why? As a data trust, the stakeholders would pool data for their mutual benefit. This type of DAO, a data DAO is just starting to emerge.

Data trusts offer a cooperative model to pool data that is governed by trustees with fiduciary responsibilities.⁴⁸ In this model, trustees negotiate on behalf of data providers to sell into data markets or place data in data commons, where it is deemed safe and in accordance with the objectives of the trust to do so.⁴⁹

The basic idea is that the Docklands DAO needs to create a new type of trust over data related to the precinct to incentivise getting data into the community's appropriate grasp for important decision making.

Blockchain can be used to build this in a time-locked, DAO governed data vault, with DAO governance policies supplying the enforcement mechanism.

Self-sovereign data trusts are good architectural solutions where ownership of data can be established on the user side.⁵⁰ Thanks to the wonderful transparency of the blockchain, you can also see which stakeholders hold a certain percentage of governance tokens in a DAO. This is important to know because it will encourage participation, for participants, seeking to understand the ownership and stakeholder ledger.

A technically viable advance is to overlay smart contracts into DAO data trusts. In a DAO governed data trust, control of the data, and decisions whether to place it in the commons and under what circumstances, would be shaped by token governance and based on a fiduciary Docklands DAO constitution.

⁴⁸ Diane Coyle, Stephanie Diepeveen, Julia Wdowin, Jeni Tennison and Lawrence Kay, 'The Value of Data. Bennett Institute for Public Policy', Cambridge (2020); Kelsie Nabben, Decentralised Autonomous Organisations (DAOs) as Data Trusts: A General-purpose Data Governance Framework for Decentralised Data Ownership, Storage, and Utilisation (20 December 2021), <http://dx.doi.org/10.2139/ssrn.4009205>

⁴⁹ Jason Potts, 'A proposal for a new type of intellectual property: Time-locked data vaults', ALTI Forum, February 17, 2022. See: <https://alti.amsterdam/potts-data-vaults/>

⁵⁰ Charles I. Jones and Christopher Tonetti 'Nonrivalry and the economics of data' American Economic Review 110(9) (2020).



Data is a valuable economic resource for production in a digital economy, but it is also an important resource for business efficiency as well as innovation.

It could work like this: all data generated by the DAO community, could be placed in a time-locked vault at the moment of collection.⁵¹ This would establish a time stamp on collection. The time-locked vault could automatically release the data through a smart contract after a period (for example 300 days).⁵²

Privacy could be assured through zero-knowledge proofs that the data exists without any private data being revealed to anyone outside the DAO⁵³ or perhaps a responsible DAO sub-committee.⁵⁴ In cryptography, a zero-knowledge proof or protocol is a method by which one party can prove to another party that a given statement is true. However, the prover avoids conveying any additional information apart from the fact that the statement is, in fact, true.

Economic theory has evidenced the benefits of data being controlled by users and consumers (rather than platforms) in order to ensure efficient trade-offs with privacy.

Economists have explained that opportunities may have been ignored, despite being known, but that data can render “unsurprising discoveries,” where “there has been no deliberate search for a piece of information.”⁵⁵ This is the goal of this DAO to utilise data in an unwaveringly objective and mutually beneficial way.

Anonymity and pooled capital can be keys to the success of the DAO, and can engender “unsurprising discoveries”. That is, realities that require data evidence to force us to act upon them.

So in the next section we will look to how the Docklands DAO could operate in more detail.

⁵¹ The time-locked contract can facilitate variations in time-lock period or disclosure conditions as directed by an external agency. Vaults themselves can be DAO governed, with governance apportioned between various stakeholders, including users and public agencies.

This balances the desire to maximise the social value of the data while maintaining transparency and accountability: Jason Potts, ‘A proposal for a new type of intellectual property: Time-locked data vaults’, ALTI Forum, February 17, 2022. See: <https://alti.amsterdam/potts-data-vaults/>

⁵² Moreover, enforcement works through a user being able to prove that they have the data at time t , in the instance that the platform did not put the data into a vault until time $t+1$. See: Ibid

⁵³ Ibid

⁵⁴ See: Darcy W E Allen ‘Delegating to subgroups in DAOs’, Substack, (2022): https://darcyalen.substack.com/p/delegating-to-subgroups-in-daos?utm_source=url&s=r

⁵⁵ Israel M. Kirzner, How Markets Work: Disequilibrium, Entrepreneurship and Discovery, The Institute of Economic Affairs (1997), page 32.

Why do blockchains create

Decentralised systems?

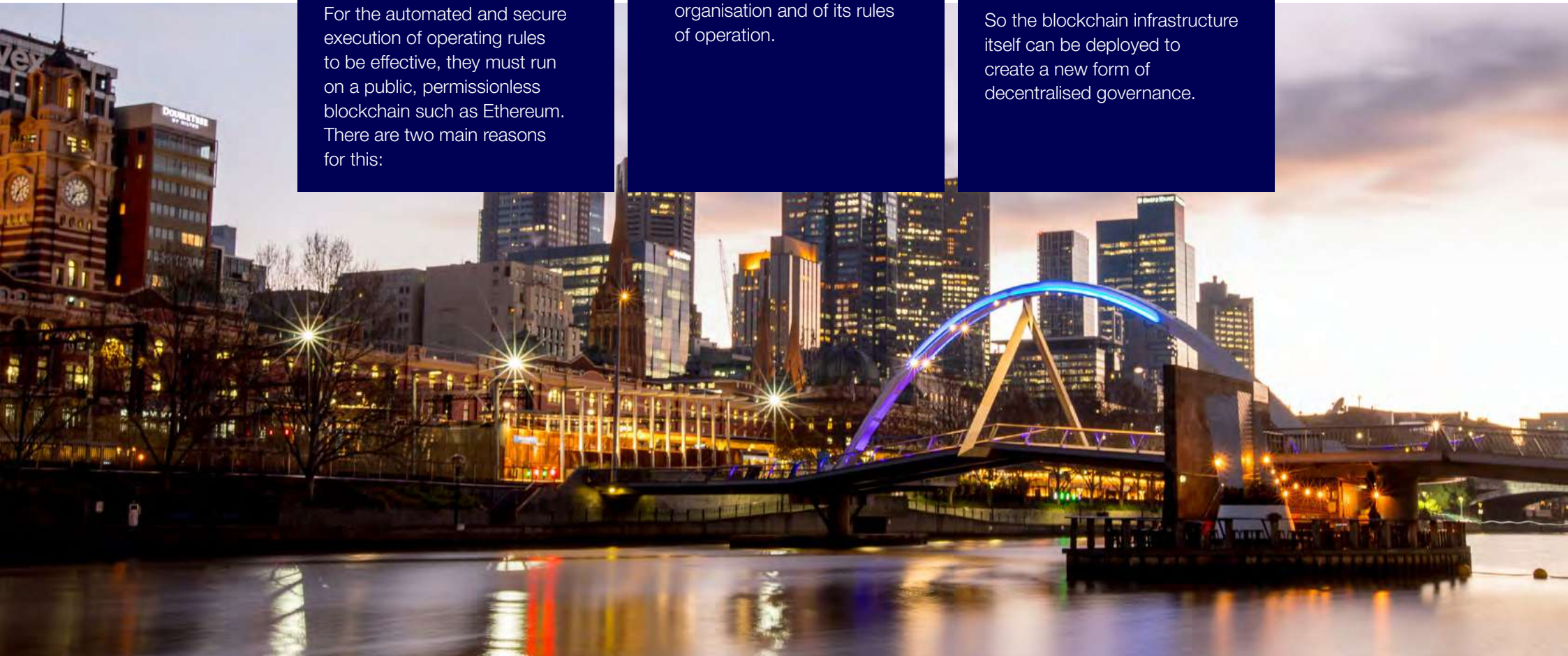
Thanks to the transparency of the blockchain, you can see which stakeholders hold a certain percentage of governance tokens in a DAO. This is important for a DAO's stakeholder management policies.

For the automated and secure execution of operating rules to be effective, they must run on a public, permissionless blockchain such as Ethereum. There are two main reasons for this:

1. Traditional software cannot directly handle funds. It can only transmit orders to the financial intermediaries in charge of moving money around. Using a public blockchain makes it possible to place (crypto-) currency or other (crypto-) assets under the direct and unique control of the DAO, which acts as a software representation of the organisation and of its rules of operation.

2. Traditional software relies on an infrastructure operated by a third-party. If the rules are programmed in an application running on a cloud like AWS or on one of the company's servers, then their execution depends on the cloud operator or the IT department, which are vulnerable to outages, errors, and outside influence.

So the blockchain infrastructure itself can be deployed to create a new form of decentralised governance.



The problem with any organisation with multiple stakeholders is that goals must be aligned from the outset and remain so. So community building is a difficult task for a DAO. Vitalik Buterin, a co-creator of Ethereum and the creator of the DAO concept, said, in a 2021 interview, “You can’t just have a DAO to be a DAO. You need a DAO to do something.”⁵⁶

Furthermore, a DAO is aligned by investing in each other. A DAO can be more nimble than a corporation, as a bottom up system that would allow a small restauranter to have a voice alongside a large developer such as Lendlease. But both have a vested and shared interest in rejuvenating the Docklands. The community here is based on mutual vested interests in maintaining a working economic ecosystem in a region or precinct.

Again, anonymity and pooled capital can be key to the success of the DAO. Meaning publicly unpopular or ambitious ideas might be approved that might have been knocked back without a transparent stakeholder-representative DAO voting mechanism. In traditional organisations, there’s typically a hierarchy. A formal board of directors, executives or upper management determine the structure and have the power to make changes.

DAOs, on the other hand, are decentralised, which means they are not governed by one person or entity, but community ownership and decision making. The rules and governance of each DAO is coded in smart contracts on the blockchain.

This means the rules cannot be changed unless voted upon by the DAO’s members.

This is where theory meets reality. What would be the rules of the Docklands DAO? The specifics of each DAO, including its type, structure, rules and governance, will depend on the group and its goals, of course.

The Docklands DAO would have a major goal of rejuvenating the Docklands by utilising data in its data trust.



⁵⁶ https://www.youtube.com/watch?v=WRmjfn4__RM

The Rules of a proposed Docklands DAO



Firstly, to obtain voting power or membership in a DAO, corporate members can receive governance tokens in an airdrop or buy governance tokens, tied to the project. (Initially, for the pilot there are no secondary markets).

Secondly, every decision within the DAO must be pitched, discussed, voted on and then decisions can be documented publicly.

Thirdly, the weight of a member's vote will depend on the amount they contribute to the project, not their initial investment in tokens.

Fourthly, all members (no matter the token holding) can make a proposal for a grant or an idea, or seek a grant for further research for an idea. Removing the risks of corporate ownership diluting the Docklands DAO.

Of course there is still much to be drilled down beyond that structure. But this is not an abstract idea.

This report does not seek to be overly ambitious. Regenerating a region is not an easy task. And it is not necessarily a profitable exercise in the short term.

The Docklands DAO will empower the community, there is a strong Australian precedent for this in the form of Bendigo Bank Community Banks.

The Bendigo Bank Community Bank Model

The DAO idea is not an abstract idea. This is also not a crypto-centric example. The Bendigo Bank Community Bank Model, first tested in the 1990s, is a perfect example of community buy-in to a commercial problem: country shopping strips faltering at the anchor-tenant bank left to town's High Street. People had no reason to enter the town.

Bendigo Bank allowed for community share-ownership of their own local bank so that profits were split 10:40:50. 10% to the initial shareholders who bought into the bank's creation, 40% to community grants and 50% to the Bendigo Bank parent company. So the bank sacrifices 50% of profits for an engaged and motivated customer base.

Thousands of High Streets once again flourished across Australia thanks to community banks.

As for distribution of the 40% of profits. Grants were given (though not always) to the community groups that supported the bank.

The Bendigo Bank Community Bank Model, is an adept example of community buy-in to a commercial problem. People previously had no reason to enter the town. Bendigo Bank's success in creating community-owned commercial community banks has been a great Australian story, as evidenced by its share price on the Australian Stock Exchange (ASX:BEN) over the past 20 years. Today there are 324 Bendigo Community Banks and more than \$272 million dollars have been returned to the community.⁵⁷

A precinct anchored in real estate investment can mirror this highly successful model. So today, what is the "community bank" that brings everyone back to the High Street in the Docklands? Perhaps it is a desire for office workers to return to desirable lunch options? Or for real estate developers to build developments that have a critical mass of occupants to feel like a community exists? Perhaps it is for international students to feel like they belong to a community and have a voice? A combination of all of these?

This is why the Docklands DAO is needed now, more than ever. The Bendigo Bank Community Bank Model is a real life precedent for the Docklands DAO.

⁵⁷ <https://www.bendigobank.com.au/community/community-bank/>

Are government stimulus vouchers the best way to revive a CBD?



Melbourne Money

In February 2022, the Victorian government again sought to energise the city centre through a new round of business relief vouchers.⁵⁸ Melbourne lord mayor Sally Capp lobbied for a return of the Melbourne Money program and the state government scheme would subsidise restaurant and accommodation spending.

Midweek Melbourne Money was to be offered through the \$200 million Melbourne City Revitalisation Fund – a joint partnership between the City of Melbourne and the Victorian Government.

The previous \$5 million Midweek Melbourne Money dining scheme ran from Tuesday 15-30 November 2021. It was a 30 percent midweek dining discount, which “helped bring the buzz back to the city.”⁵⁹ The November program was hailed a “huge success” by Melbourne City Council. More than 124,000 claims were approved, with diners spending more than \$18 million in Melbourne restaurants, cafes and bars. The program has also had a positive flow on to other sectors, with 40 percent of diners saying they also shopped in the city on their visit.

⁵⁸ <https://www.theage.com.au/national/victoria/significant-easing-of-restrictions-this-week-with-vouchers-to-spur-spending-20220216-p59wvs.html>

⁵⁹ <https://www.melbourne.vic.gov.au/about-melbourne/melbourne-is-open/Pages/melbourne-money.aspx>

⁶⁰ <https://www.mab.com.au/news/lendlease-mab-mirvac-and-district-docklands-unite-to-launch-100k-docklands-dollars-3008-initiative/>

⁶¹ <https://www.melbourne.vic.gov.au/about-melbourne/melbourne-is-open/Pages/melbourne-money.aspx>



Docklands Dollars

Launched on 18 February 2022, Four of Australia’s leading property groups – Lendlease, MAB, Mirvac and The District Docklands combined to contribute \$100,000 to fund Docklands Dollars 3008, a new initiative to encourage Docklands residents to support traders within Melbourne’s waterfront destination. The Docklands Dollars program would only run until April.

The initiative allowed residents to earn a rebate of up to \$25 every fortnight, with a maximum of \$100 cashback, when they spend with participating retailers within the precinct. Docklands Dollars 3008 follows on from the Docklands Dollars program which launched in March 2021.⁶⁰

But was this bad business, or misdirected policy? Subsidising businesses already crippled by working capital crunches. How do we know the businesses receiving the voucher dollars actually needed the help? Are economic stimulus packages too short term? A bandaid.

For example, a cafe that charges \$4 for a coffee, may not receive any benefit from a stimulus package, that requires a minimum spend of \$40.⁶¹ That stimulus package will not benefit the cafe’s bottom line at all. The answer can be found in economic theory.

Not all stimulus packages have the intended consequences they were established for. Well known examples include the house insulation program⁶² or the US so-called 'cash for clunkers' program.⁶³ Is a stimulus package bad business, or misdirected policy?

One way to frame this question is that there are tradeoffs in stimulus policies. The money for a stimulus has to come from somewhere - and it must be compared with alternative

uses (including both other public funding of things, or returning the money to Melbournians).

If you take a given level of stimulus (e.g. you decide how much you would like to do) then the question is how to best target that funding to achieve the desired objectives. One relevant question with Melbourne Money is whether the stimulus changed behaviour (did more people go out to dinner because of Melbourne Money?).

Or whether it just redistributed money from ratepayers to people who were going to go out for dinner anyway.

Yet, while that analysis is usually true. This was a different kind of stimulus. Stimulus packages are generally required due to a demand shock to the economy. This was not a stimulus, like the Global Financial Crisis stimulus, required due to a demand shock. Melbourne Money was not a demand management tool.



⁶² <https://www.theguardian.com/australia-news/2018/jun/04/kevin-rudd-we-would-have-stopped-home-insulation-scheme-if-risks-were-known>

⁶³ The US Federal government spent \$3 billion on Cash for Clunkers, and by doing so it reduced spending on new cars by \$3 billion. The program created by President Obama, cost both taxpayers and carmakers \$3 billion. See: <https://www.smh.com.au/politics/federal/look-under-the-bonnet-and-cash-for-clunkers-is-a-lemon-20100726-10sjp.html>

For, corporates, their staff and food businesses:

It is proposed that there could be a “Docklands DMC digital currency” (easily convertible to Australian dollars). Corporate tenant partners (say for example developers such as Mirvac and Lendlease, or the state government) could support an airdrop.

An **airdrop** is when crypto projects send free tokens en masse to their communities in a bid to encourage adoption. An airdrop is, at least initially, a marketing stunt that involves sending free coins or tokens to wallet addresses to promote awareness of a new currency. Though incentives can and should continue for active community members. Reward-based airdrops would continue for incentivised local anonymised data capture and community contributions to the Docklands DAO.

Airdrops could also reach the phones identified as visitors to the Docklands and then offered incentives to visit and play in the Docklands. Hype can be a public good for innovation.⁶⁴ In fact, hype is necessary to distinguish this new model from existing stimulus packages. This is a new way of targeting economic needs.

As a recent example, the Ukrainian government would become the first country to conduct an airdrop in March 2022 for crypto donations received from abroad. This became an ingenious way to reach the people who needed assistance remotely.⁶⁵

⁶⁴Jason Potts, ‘Hype As a Public Good for Innovation’ (16 March 2017): <http://dx.doi.org/10.2139/ssrn.2934675>

⁶⁵<https://www.coindesk.com/markets/2022/03/02/ukraine-says-airdrop-confirmed-after-receiving-33m-crypto-donations/>

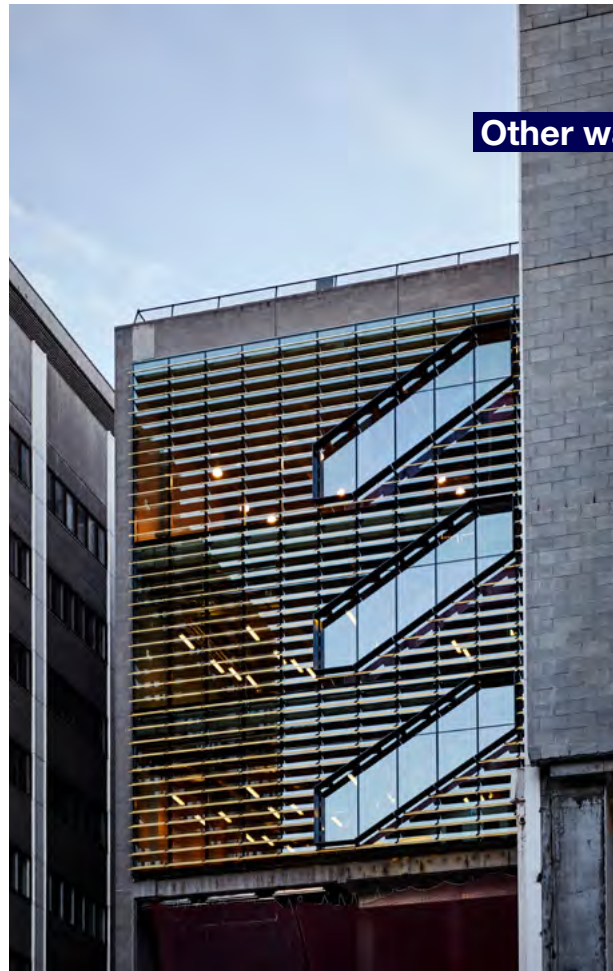




So, in stage 1, corporate anchor tenant dollars (for example Lendlease and Mirvac) might pay for the airdrop. But those who support the DAO will receive ongoing rewards for example:

A tenant company could offer data regarding their mandated staff in-office days to the Docklands DAO data pool and be rewarded for their participation. Those tokens could be pooled for staff to have subsidised local lunches. Which in turn rewards local food businesses, corporates build strong staff culture and staff enjoy timely offers.

Importantly the restaurant can better plan their working capital and perishable inventory by being given people movement data in a digestible form, for example.



Other ways to utilise the data obtained by the Docklands DAO:

- Community building: For example, pairing spatial/location data to verify how and when they use the Docklands, for a social token type reward program
- Data can be used to help the DAO community eg. vacant sites could be repurposed, as DAO members work together
- 10% of DAO treasury could be collected for a community fund to build agreed upon projects or fund research grants
- Data can be used to help better direct local philanthropic needs, such as after school programs for school kids
- The DAO can help international residents by understanding their concerns and allowing them to join the DAO and be integrated into the community. For example connecting international students with casual work and other employment opportunities in local areas
- The DAO could also invest in start ups or projects that benefit the Docklands community
- More ambitiously the DAO could engage in project financing, tokenisation and fractional ownership of common property areas or even investment properties. That is the DAO could invest in apartments and other local properties with the goal of the DAO creating further interest and residency in the area⁶⁶



Of course, many of these proposals are ambitious. But with a mission to regenerate the Docklands region, all of these ideas are with the remit of a proposed Docklands DAO.

“By using tokens, DAOs can efficiently allow votes, empower profit sharing and, crucially, supply liquidity, as tokens can be bought and sold...”⁶⁷

⁶⁶ As noted this could also be part of the existing Shopfront Activation Program.

⁶⁷ <https://www.forbes.com/sites/jeffkauffin/2022/02/03/daos-arent-a-fad-theyre-a-platform/?sh=530884e619d0>

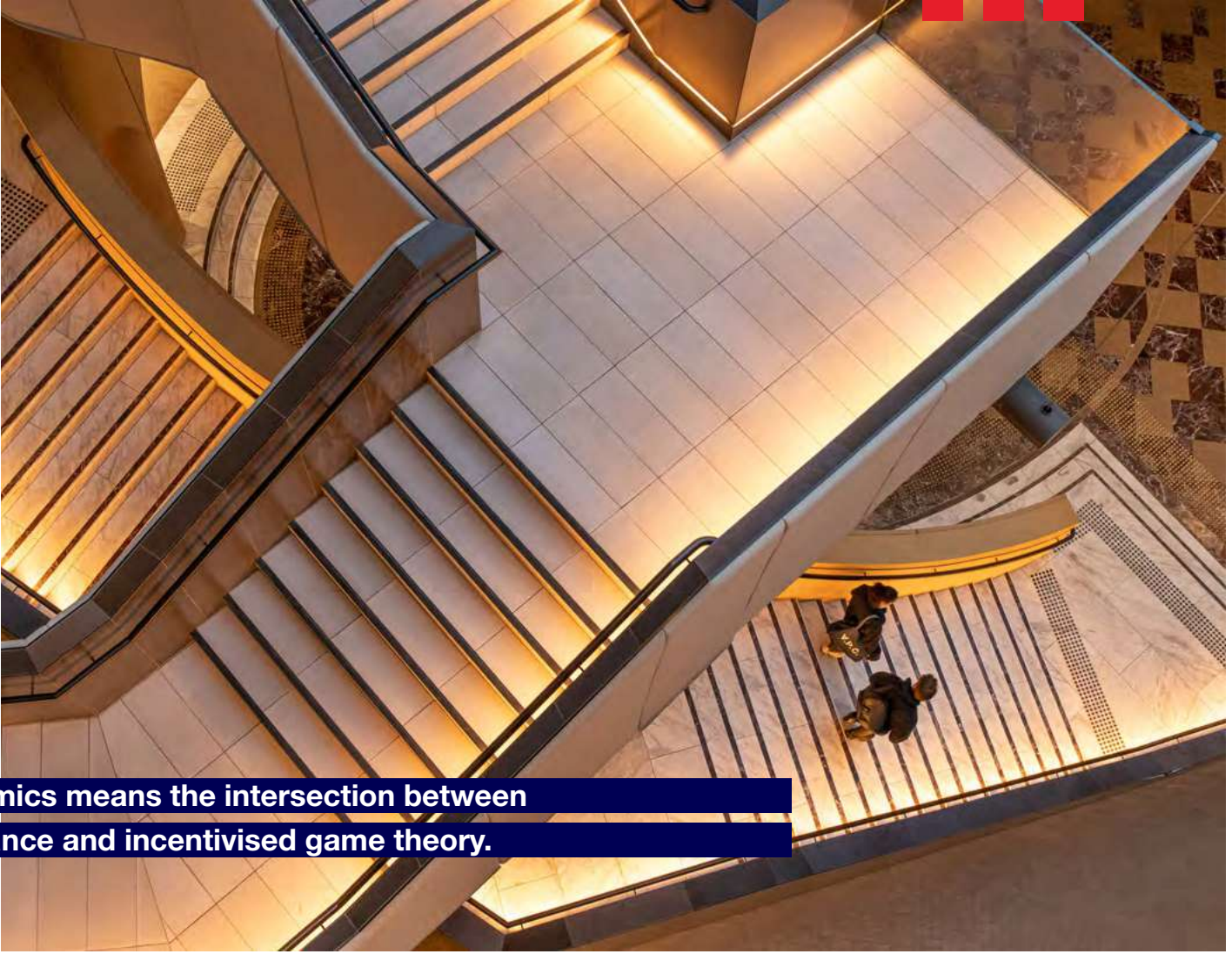
Tokenomics Theory

As noted in the previous section, a DAO can offer decentralised decision-making for local stakeholders by utilising Tokenomics. Tokenomics can be deployed to re-organise the precinct/ market through economic incentives.

Tokenomics means the intersection between governance and incentivised game theory. This will be achieved by programmable money for the pilot to measure quantifying impact. Web2 (think Google, Facebook) offers algorithmic ad spamming, this DAO will offer incentivised calls to action and rewards that are local and relevant to the tenant/ consumer/stakeholder.

These offers will be: qualitatively better, fairer and more effective at incentivising and rewarding marketing outcomes, with zero fraud, data or privacy risk for users for transactions that occur on chain.⁶⁸

Again, decisions can be made through the Docklands DAO which builds a local treasury, with businesses and patrons voting on spending. So, the DAO could include: retail/commercial tenants, landlords, office workers all keen to see businesses succeed, and ultimately the local area succeed. But how would the tokenomics work?



Tokenomics means the intersection between governance and incentivised game theory.

⁶⁸ This will be outlined further in our forthcoming report on cybersecurity.

Application: For users and visitors without

a strong connection to the local area

People sign up to a program (with a crypto wallet or an unfamiliar platform for the non-Crypto native) that rewards them for patronage of Docklands businesses via airdrops of coins and social tokens. But people have so many apps on their phone already, why would they use the airdropped coins?

For those that are curious, hype and clear brand messaging by the Docklands DAO will create an innovation commons. For example, NFTs used to create hype around the Docklands DAO may also be an early adopter onboarding option. POAP (Proof of Attendance Protocol) or Momento (NFTs of attending events) NFTs can be issued to holders of the token. "Moments" can be created for attending an AFL game at the Docklands Stadium (Marvel Stadium), or even having a reunion lunch with your Nan post-COVID-19. In the longer term, the DAO will have to continue to innovate its offerings.

In the longer term, the DAO will have to continue to innovate its offerings.



Returning, to the operation of the Docklands DAO Data Trust:

- The integrated data from all retail businesses in the Docklands precinct would be continually used to create a data pool that can be used for business decisions, analysis, planning.
- Once there is a panel (or critical mass) of Docklands residents and visitors on the system, offerings can be expanded.
- The Docklands DAO will tailor local public goods for the Docklands based on the patrons and the businesses located there. So those with a direct stake may have a natural curiosity to support the Docklands DAO as a policy experiment worth supporting.

What are NFTs?

“Nonfungible”, which means that the item is unique and can’t be copied. Every NFT is a unique token, and while it’s easy to copy the related image, the creator’s wallet address cannot be faked, and “minting” is a direct line of provenance. “Minting” an NFT registers a particular user as its creator and the first owner of that NFT token.

So, an NFT is basically a form of notary service, a tokenized tool for provenance, establishing and certifying the creator’s wallet address. They can help artists, musicians and others prove they created something.⁶⁹

The possibilities for immutable provenance wrapped in an NFT are just starting to be explored. NFTs can wrap any data securely. That’s why true open-source innovation believers are keen to see progress in developing the space.⁷⁰



⁶⁹ <https://cointelegraph.com/magazine/2021/12/10/can-someone-explain-to-me-why-nft-clones-are-selling-for-so-much>

⁷⁰ <https://cointelegraph.com/magazine/2021/12/02/despise-a-bad-rap-nfts-can-be-a-force-for-good>



Another application: tokenomics - pooled marketing

staking revenues for local businesses

Another new idea that is proposed by this report is pooled marketing staking revenues.

How could that work? When a local purchase is detected, the engagement protocol distributes units of commercial sponsors' staked budget to all of the stakeholders contributing to this marketing outcome: sponsors, content creators, content consumers, publishers, liquidity providers (including the protocol treasury) and the Docklands DAO staking community.

Tenants/residents/stakeholders can invest in supporting local businesses they like, and, in turn, receive a return from the Docklands DAO treasury.

No good local coffee? Stake your tokens to support a new cafe in the area. Better still use the Docklands DAO as a vehicle for your opinions and suggestions to be voted upon.

This would operate as a localised economy that encourages local support. Everyone wins. Landlords, tenants, office workers, residents, retailers and local food businesses. New businesses (particularly crypto ones) would be attracted to the precinct. Positive externalities flywheel through pooled data, mutual marketing, and rewards, operating via smart contracts.

What happens when one stakeholder holds too many tokens?

An experimental Crypto voting model

Hostile takeovers are a real problem for DAOs.⁷¹ Yet, tech-enabled algorithmic voting models, such as “Holographic Consensus” voting offer a unique crypto-native solution. In crypto native-DAOs, you earn governance rights by contributing to the community, and must keep contributing, to keep voting.

The early DAO, DAOstack, deploys a system of economic curation of proposals known as Holographic Consensus.⁷² This is a voting algorithm invented by DAOstack founder Matan Field. The system allows a random or semi-random subset to make decisions for the group as a whole.

A small predictions market economy emerges around the likely outcome of a proposal as tokens are staked on it, which increases the potential influence of the issue by acting as a gatekeeper for voters. Additionally, proposals that have been given a financial incentive (boosted) have fewer prerequisites to be considered successful, resulting in increased system efficiency.

The main point is that holographic consensus “does not require a quorum to render a vote valid” according to Field:

“Rather it provides a different parallel process to do so. This other parallel process is a “prediction game” which is played (for profit) by the “predictors” - who can be anyone and not particularly voters (they can be AI bots) - who make predictions about whether a certain vote will be eventually approved or not by the voters. If for a long enough period of time enough stake is being placed over the prediction that the vote will be approved, then the voting process is considered valid, even when the voting quorum is low.”⁷³

“In other words, a quorum is not a resilient strategy for DAO governance at scale”.

So you don’t need large votes on every issue. If only 5% of voters vote, that’s fine. But if the proposal moves a significant amount of value or makes a significant change, you require a longer, say a 30 day, voting period and a higher quorum.

The DAO space is maturing and there’s less of a focus on voter turnout, and more of a focus on tools and processes that mean power is delegated to smaller sub-DAOs, committees, and working groups.



⁷¹ <https://markets-businessinsider-com.cdn.ampproject.org/c/s/markets.businessinsider.com/news/currencies/build-finance-dao-treasury-discord-crypto-build-token-metric-2022-2?amp>

⁷² <https://medium.com/daostack/holographic-consensus-part-1-116a73ba1e1c>

⁷³ Interview with Matan Field, Founder DAOstack, 21 February 2022. See also: <https://cointelegraph.com/magazine/2022/03/03/how-do-you-dao-can-daos-scale-burning-questions>



An example the DAO might

raise for each stated problem:

1. Is level 7 of The Age building only there on Tuesdays? Can the Banh Mi restaurant downstairs offer Tuesday specials to the DAO?

2. Foreign investors buying and holding real estate – is this affecting vacancies? Can real estate agents contact them to find renters?

3. Why does the MCG feel different to the Docklands Stadium? The MCG has grass so that parents can kick a footy with their kids. Could the Docklands DAO install turf (or artificial turf) in the precinct? Can the AFL join the DAO?

Support for Legal DAOs in Australia:

the Senator Bragg Inquiry

There is great political support in Australia to support a DAO. On 20 October 2021, the Australian Senate Committee delivered a groundbreaking report calling for a complete overhaul of crypto legislation and licensing in the country.

The original Australian Senate Select Committee on FinTech and RegTech, chaired by Senator Andrew Bragg, was established in 2019 to strengthen the regulatory environment for fintechs and regtechs in Australia. It would quickly become known as the Bragg Inquiry and largely focused on crypto. Generally not regarded for its regulatory progress, Australia's quick pivot to researching and proposing helpful rules for the crypto industry surprised many.

Judging by the report's heavy quoting of stakeholders, the Australian government's October 2021 Senate inquiry final report into digital assets has attempted to truly listen to the vast concerns and aspirations of the bustling Australian crypto industry, with almost 18% of Australia's population owning cryptocurrencies.⁷⁴ The inquiry released its final report after six months of hearings and submissions on the topic. This timely report received widespread industry applause in October 2021.⁷⁵

DAOs as a company law vehicle.

Notable recommendations include proposals for tax reform and a possible new corporate entity to be able to register DAOs in Australia. The recommendations present an opportunity to attract jobs, investment and innovation to Australia and to retain talent.

The final report suggests Australia create DAOs as a new legal corporate vehicle. An acknowledgment that the government is trying not to subsume these new technologies into existing legal frameworks is contrary to Australia's common law legal system built on precedent and legislation. It could be argued that with this move, Australia is looking to position itself as a location with favourable laws, hoping to attract more business. The US-state of Wyoming made DAOs a corporate entity a year ago and is now celebrated in crypto circles globally. The Marshall Islands also did so in early 2022.

⁷⁴ <https://www.finder.com.au/finder-cryptocurrency-adoption-index>

⁷⁵ <https://www.smh.com.au/business/companies/crypto-sector-jubilant-over-reforms-but-implementation-delays-a-concern-20211021-p591zs.html>

This recommendation was for the government to establish a new DAO company structure into corporate law. Legal personality for DAOs and limited liability for members would seek to open the floodgates of innovation.

This Senate's final report itself noted: "Legal liability for members (i.e. token holders) for these organisations is currently unclear, and this regulatory uncertainty is preventing the establishment of projects of significant scale in Australia." In other words, institutional investment could now flow to major DAO-based projects

"If legislated, these will be the most significant reform to corporate law in two decades," RMIT Blockchain Innovation Hub (BIH) researcher Dr Aaron Lane noted, adding: "Providing DAO members with the option of a limited liability company structure will encourage talent and investment in Australia."⁷⁶

The report is still mostly aspirational for now, but some regulatory patience may play in Australia's favour. This area could be finalised as these proposed laws settle in the future, giving Australia time to follow other jurisdictions. Legal structuring of a proposed Docklands DAO is beyond the scope of this report but there are also possible state-based legal approaches to registering a DAO.⁷⁷

RMIT Blockchain Innovation Hub views on DAOs as a form of management

"While DAOs have so far been solutions to problems of decentralisation for protocol governance, they are also valuable for industry-level and above problems."

- **Distinguished Prof. Jason Potts**

"Our research and the sector's experience suggests that DAO governance needs to become more complex and polycentric - committees and councils in DAOs need to be more than just multisigs and proxies of founding teams. Fundamentally blockchain and cryptocurrencies are governance technologies - how we govern data, how we govern digital assets - and we've got a long way to go to make decentralised, distributed and democratic governance effective enough to be competitive against traditional forms of organisation."

- **Assoc Prof. Chris Berg**

"[2022 is] The year of DAO tools. DAOs need tools for treasury management and diversification, funding local public goods, and for the emergence of 'subDAOs'"

- **Dr Darcy Allen**

"2022 will be the year that DAOs are recognised as being legitimate mechanisms to organise cooperation and the division of labour."

- **Prof. Sinclair Davidson**

"how model laws are adopted and diffused throughout jurisdictions - perhaps comparing the current task with DAOs to previous legislative efforts around the world regarding fintech sandboxes."

- **Dr Aaron Lane**

⁷⁶ <https://www.rmit.edu.au/news/media-releases-and-expert-comments/2021/oct/senate-crypto-asset-report-a-compelling-roadmap-for-australia-experts>

⁷⁷ For example it may be possible to incorporate a DAO under the the Associations Incorporation Reform Act 2012 (Vic), or comparable state Acts.



Yet this DAO is a micro city and adoption is still a challenge

The transition to a Digital CBD will require inputs from policymakers and regulators to make responsible reforms. Existing businesses and start ups will need the incentives to invest and adapt, and foreign entrepreneurs will need to see Melbourne as an attractive place to build their businesses.

Yet, efforts must be made to understand the existing context and the changing demands and desires of Melbournians (and future Melbournians). The opportunities of a Melbourne Digital CBD and the digital economy more broadly; benchmarks to examine and quantify Melbourne's unique place and advancement towards a Digital CBD; and practical policy tools and approaches to achieve our goal of a more prosperous, open, diverse and dynamic Melbourne.

The key problem we foresee is on-boarding stakeholders and then providing enough ongoing utility so that users care. This will be an experimental pilot so it is hoped that all stakeholders understand that teething problems will occur and learnings will be fed back into the pilot.

There is a role for government as a catalyst, but beyond that there is a need for attracting private sector investment, and the redeployment of capital for returns to attract companies to the CBD.

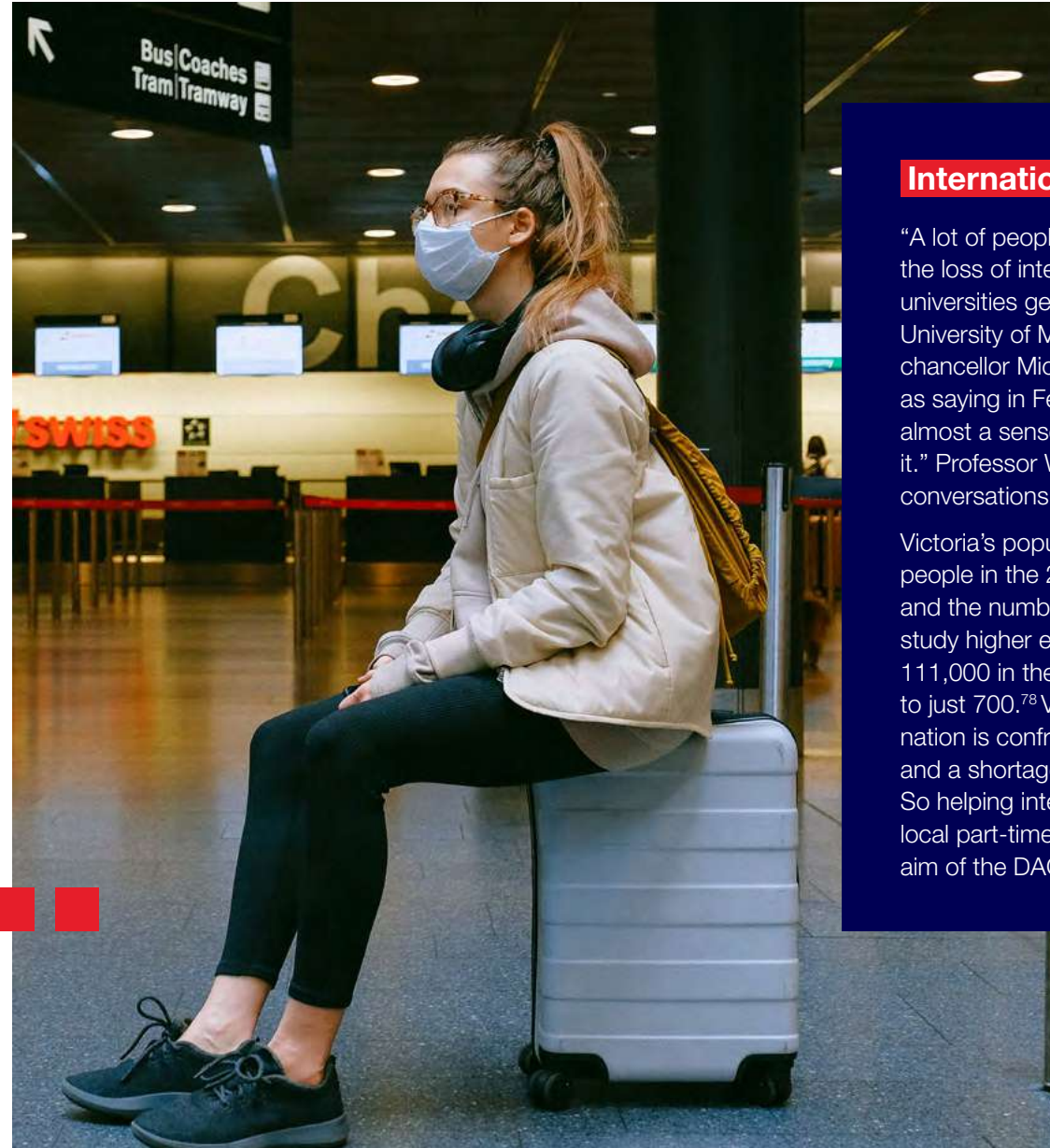
Thus, the measures of success for a potential Docklands DAO pilot are:

- Large scale user adoption
- Providing enough ongoing utility so that users are engaged and active on an ongoing basis
- Economic data to evidence precinct rejuvenation

The voiceless and apathetic towards the DAO?

What happens in the Digital CBD or the Docklands DAO community to those people who are not tech savvy (say elderly boomers) or those not interested in joining the DAO? How is their voice heard to become a convincing community or is this only meant to attract the tech-minded in a Digital CBD framework?

The answer is that the Docklands DAO rewards those who actively support the DAO. Those who are working together to support the precinct. A DAO, is a work productivity coordination organisation, rewarding active work and volunteerism that benefits local communities.



International Students

“A lot of people seemed to think that the loss of international students was universities getting their comeuppance,” University of Melbourne deputy vice-chancellor Michael Wesley was quoted as saying in February 2022. “There was almost a sense of schadenfreude about it.” Professor Wesley now argues those conversations appear to have changed.

Victoria’s population shrank by 56,000 people in the 2020-21 financial year and the number of people arriving to study higher education dropped from 111,000 in the last pre-pandemic year to just 700.⁷⁸ Victoria and most of the nation is confronting new job listings and a shortage of people to do them.⁷⁹ So helping international students find local part-time jobs could also be an aim of the DAO.⁸⁰

⁷⁸ <https://www.theage.com.au/politics/federal/population-growth-slumps-to-lowest-rate-since-world-war-i-20210617-p581w0.html>

⁷⁹ <https://www.theage.com.au/politics/federal/unemployment-rate-steady-but-millions-of-hours-lost-due-to-sick-leave-20220217-p59x7g.html>

⁸⁰ <https://www.theage.com.au/national/victoria/as-students-return-to-university-a-city-realises-what-we-missed-20220218-p59xk5.html>

Case Study

Users can be rewarded for supporting the DAO

NFT marketplace SuperRare sent its users tokens proportional to the volume of their transactions on the platform. (Imagine if Twitter rewarded a form of stock based on your accumulated retweets.) The token was used to pick which users could open new storefronts on the platform. Other crypto companies—such as Uniswap, a cryptocurrency exchange, and Ethereum Name Service, which offers the domain name .eth—have created their own governance tokens for users. The philosophy from the user standpoint: “I, by transacting on your platform and having you take a percentage of my activity, expect some remuneration for that.”⁸¹

Community Building:

“NFT Melbourne” 23 February 2022

Almost 1,000 people attended the sold out event held at a location not disclosed until attendees joined their community Discord group. The event was also livestreamed via a plot of land in Decentraland. It was “billed as a place to learn about a world where the physical and the digital co-exist for a greater human connection.”

NFT Melbourne sought to bring awareness to the possibilities that NFTs can bring to art, music, events and all businesses who want to better connect with their customers. A panel discussed an NFT education for people interested in entering the space as a creator, collector or collaborator and thought leadership sessions for those looking to push the boundaries further. Australian artists and entertainers also performed in digital and physical format.

“We ran the event to give people in Melbourne a place to go and celebrate the Web 3 movement and also give those new to the space a safe place to learn more about it and meet people actively participating in it. We had a little under 1000 people through the doors who enjoyed a night full of speakers, networking, an art gallery featuring digital and physical art and finished the night with a live performance by Masked Wolf.” - Theo Kanellopoulos, event organiser



NFT Melbourne attracted over 1,000 people to a secret location in February 2022

⁸¹ <https://www.newyorker.com/culture/infinite-scroll/the-promise-of-daos-the-latest-craze-in-crypto>

A further idea proposes the Docklands DAO supporting Pokemon Go style activations backed by corporate partners such as real estate developers, the AFL, and the hospitality industry. Gamified personalised rewards programs could include points for entering a region for example.

To understand the usage of buzzwords, like Metaverse, we need to first understand what the Metaverse seek to be.

In short, venture capitalist Matthew Ball identifies various Metaverse key characteristics, such as: it needs to contain a fully fledged economy, span the physical as well as the virtual worlds, and offer unprecedented interoperability. The Metaverse will not be run by one company.



SMEs will have a place in the Metaverse and ideas surrounding a possible Metaverse will be considered in Report 5 of this series.

The Digital Infrastructures report looks at the key technologies defining Industry 4.0 (or 4IR) and investigates their purposes for a Digital CBD. The report reviews domestic digital infrastructures, given the shifts to remote work that we have seen, and asks how these technologies can or should support decentralised digital work practices into the future. It also unpacks the technologies behind the Metaverse and explores what a mixed-reality environment could do for the city, framing it within infrastructures that augment the city.

The report then looks in detail at what kinds of digital infrastructures we need to support innovation and lift Melbourne's entrepreneurial ecosystem to a globally competitive, and collaborative, position. Entrepreneurial infrastructures for digital collaboration, knowledge exchange, navigating uncertainty and early/experimental engagement with technology trends will feature here.

Finally the report will focus on the everyday lives of Melbourne residents and their relationship to the city, presenting the results of a city-wide survey. These results will give us a living baseline for what role the city plays for its residents and how ready they are to engage with it digitally. From this new research, the report will identify what kinds of digital infrastructures can centre the city in the lives of its residents and respond to their visions for its future.

Towards a Metaverse for Melbourne? On and offline activations can re-build Melbourne's brand globally and help the tourism industry





The Conclusion

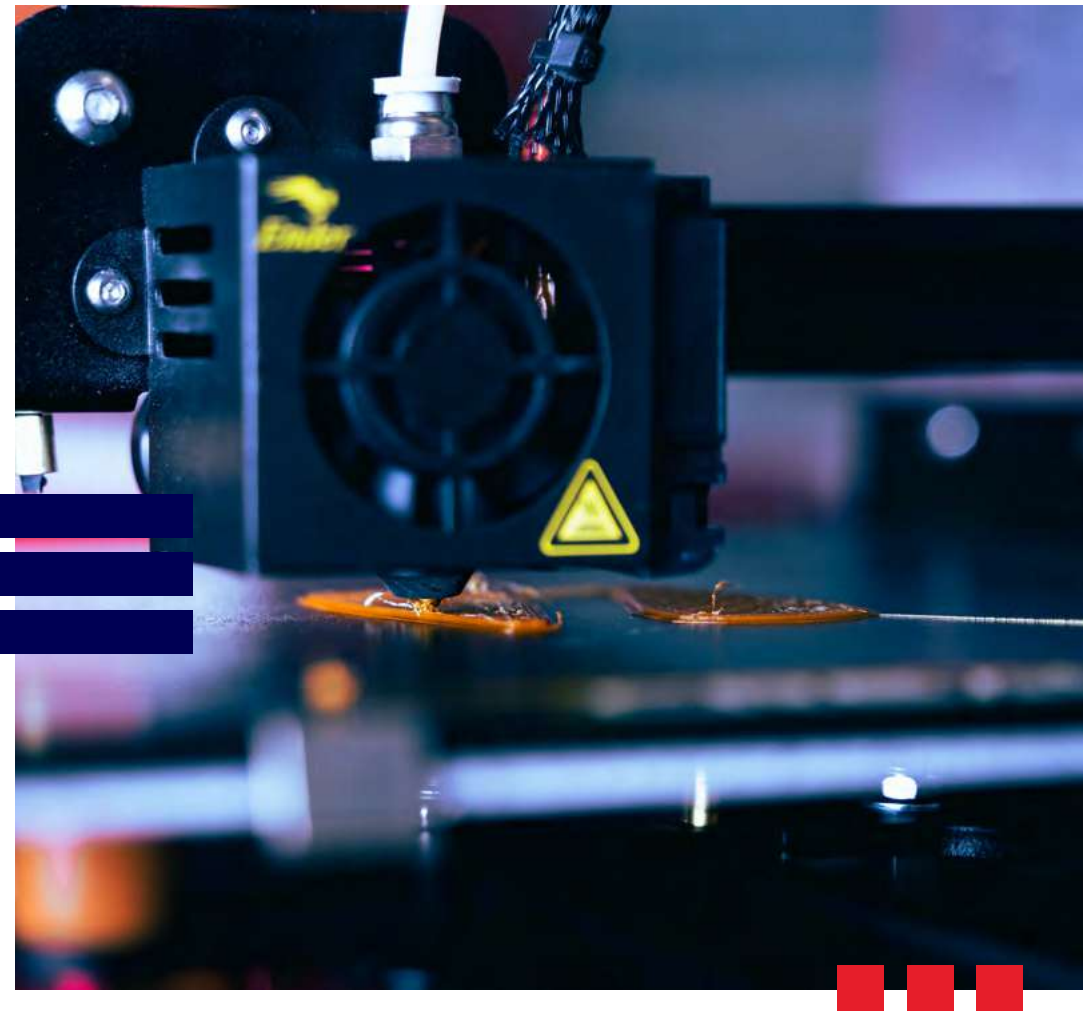


This period of technology adoption during Covid is unprecedented. Covid-19 arrived at a critical time in the history of technology, when a supercluster of digital technologies were forming (cloud computing, blockchain, artificial intelligence and machine learning, cybersecurity, quantum computing, virtual reality, 5/6G communication, Internet of Things, and low-cost 3D printing), poised to disrupt the underlying infrastructure of the economy.

This suite of digital platforms and technologies had been developing for several decades, and these technologies are being scaled into digital cities.

In Unfreeze: How to create a high growth economy after the pandemic (2020) this research cluster argued that there is an urgent need for entrepreneurs to adapt to the post-COVID-19 world. Economies are made of connections, information, contracts, webs of value, and relationships.⁸²

The real alternative to conventional policy levers is not necessarily different policies (like quantitative easing, negative interest rates, or universal basic income) but also lies with better institutional technologies. Blockchain, and DAOs, in particular, offers a new administrative and governance base layer of the economy.⁸³



⁸² Darcy WE Allen, Sinclair Davidson, Aaron M Lane and Jason Potts, "Unfreeze: How to create a high growth economy after the pandemic", American Institute for Economic Research, 2020.

⁸³ Davidson, S., De Filippi, P., & Potts, J. (2018). Blockchains and the economic institutions of capitalism. *Journal of Institutional Economics*, 14(4), 639-658. doi:10.1017/S1744137417000200 Allen, Darcy WE, Chris Berg, and Aaron M Lane. 2019. *Cryptodemocracy: How Blockchain Can Radically Expand Democratic Choice*: Rowman & Littlefield. Berg, Chris, Sinclair Davidson, and Jason Potts. 2019.

"Blockchain Technology as Economic Infrastructure: Revisiting the Electronic Markets Hypothesis." *Frontiers in Blockchain* 2 (22). Doi: 10.3389/fbloc.2019.00022; <https://medium.com/cryptoeconomics-australia/the-blockchain-economy-a-beginners-guide-toinstitutional-cryptoeconomics-64bf2f2beec4>

**This is a human-first proposal, post-COVID-19
people are looking for activities for their soul.**

In Stage 1, this report proposed a pilot for CBD people flow predictions, which is designed to assist SMEs with their economic forecasting and inventory. This pilot will help forecast working capital for businesses, by observing changing labour markets.

In Stage 2, it was proposed that the data would then be used to create a Decentralised Autonomous Organisation (DAO). This means that retail/residential/commercial tenants could then take responsibility for their local environment: by creating a Docklands Management Commons DAO, utilising crucial pooled data.



This goodwill could extent to many facets of CBD life, this data could:

Forecast: Ambitiously forecast and identify: Labour shortages; unemployment; rental inequities; capital inequities; under-utilised public spaces.

Engage: Engage tenant corporates, the philanthropic community; encourage outdoor galleries, annual events; and virtual precinct tours.

The Docklands could become a destination of choice by letting the Docklands DAO make decisions that work in sync creating an organic living community. This Docklands DAO Data Trust could also re-vive the Docklands commercial precinct and then this pilot could be expanded to other regions across Melbourne such as the CBD North precinct.

