Holon global investments

Invest Different

Responses to Questions on Notice

August 2021

Senate Select Committee on Australia as a Technology and Financial Centre – Questions on Notice

Holon Global Investments Limited provides response to the 'Questions on Notice' from the Senate Select Committee on Australia as a Technology and Financial Centre's public hearing on 6 August 2021

About Holon

Holon Global Investments is a next generation fund manager designing the core investment portfolios and platforms of the future. A different wealth creation strategy and a different business model to create and protect wealth is needed at a time when the pace of change is astonishing.

We believe innovation drives wealth creation, and everyone should have access to investing in the best companies globally that are driving innovation today, tomorrow and in the future. For more information, visit http://www.holon.investments

Questions on Notice

Holon Global Investments Limited provided a submission to the Select Committee on Australia as a Technology and Financial Centre. As a result, we were invited to participate in the Committee's public hearing on 6 August 2021.

At the public hearing, the Chair of the Committee provided 'Questions on Notice' for Holon Global Investments Limited to respond. Specifically, the Questions on Notice were as follows [via transcript provided by the Committee Secretary]:

> *Can you take one thing on notice, please: given the [inaudible] being made about the benefit that would accrue to Australia if we had more digital asset activity in Australia, what would that benefit, in terms of jobs and investment, be to Australia? You have asserted, I'm sure rightly, that we are losing opportunities. Could you please do some work on that and come back to the committee, so that we have some harder numbers and evidence around that?*

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Key Highlights

Economic benefits to Australia

- The new internet era of Web 3.0 (that includes digital assets and distributed data cloud storage) is being built. The data innovation capacity of the incumbents (AWS, Microsoft, Google) is limited to the size of their internal proprietary development teams.
- Compared with the Web 3.0 'Filecoin Network' (digital asset and data storage) 'open-source' community at 7,000 and growing, legacy models will simply not be able to innovate at the same pace.
- For digital assets such as Bitcoin, there is an estimated 100 million users (including leading payment companies and global corporates) with a market value of USD$740 Billion and growing. The strength of another digital asset, Ethereum, has grown a global community building more than 3,000 apps standing at a market cap of $USD 383 billion.
- The 'Filecoin Network' is on a similar trajectory to Bitcoin and Ethereum. It is possible that Australia could capture 5% of rewards in the growing Filecoin Network that would equate to ~$20 Billion dollars of foreign investment over the next 20 years.
- Doubling Australia's data cloud storage market position from 4% to 8% of the global market would represent around $US 100 billion (or ten times what it is worth today) and is achievable with supporting legislation and investment.
- Not participating in Web 3.0 design and development will result in these solutions coming into Australia as 'import services' only. The opportunity cost in the next 5-10 years will stand somewhere between 100 billion and 1 trillion dollars.

Creation of Australian Jobs

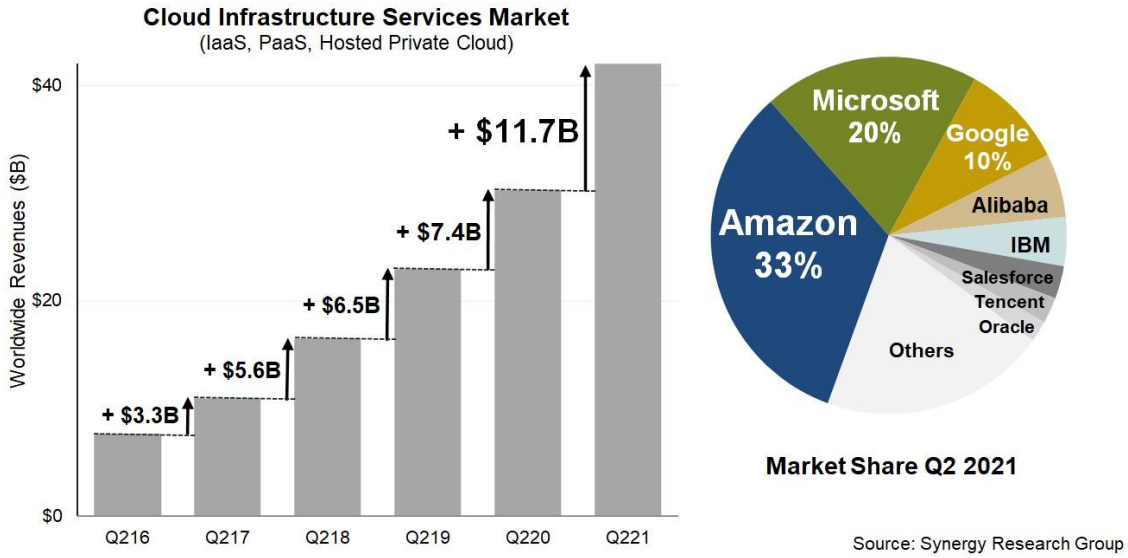
- The technology sector has increased 79% since 2016 and has outpaced average growth in the economy by more than four times. It now contributes $167 billion to the Australian economy or 8.5% of GDP. The sector would be equivalent to the seventh largest employer in Australia, providing jobs to 6.6% of the workforce.
- Cloud engineering, security consulting and full stack development (essential in the digital asset ecosystem) are among the most in-demand skills in the jobs market in 2021. These jobs will expand proportionately because data growth is expected to increase significantly as it is central to business and life.
- What is certain is data creation is growing exponentially, being led by the technology sector and, in particular, the digital asset ecosystem. Providing the legislative certainty for Australian businesses and investors to engage in Web 3.0 can position our country as a significant participant, if not leader, in the digital future.

> *Rather than circumventing the rules, many of these technologies (and the responsible technologists and companies that are harnessing them) are enshrining law and responsible market conduct into code. This allows business models to scale to henceforth unreachable applications, use cases, markets, and people, billions of whom are hopelessly out of reach of the formal economy but for digital transformation, of which blockchain and crypto are essential parts.*
>
> *(Fortune: The infrastructure bill is a coming-of-age moment for crypto)*

Unlocking digital innovation potential

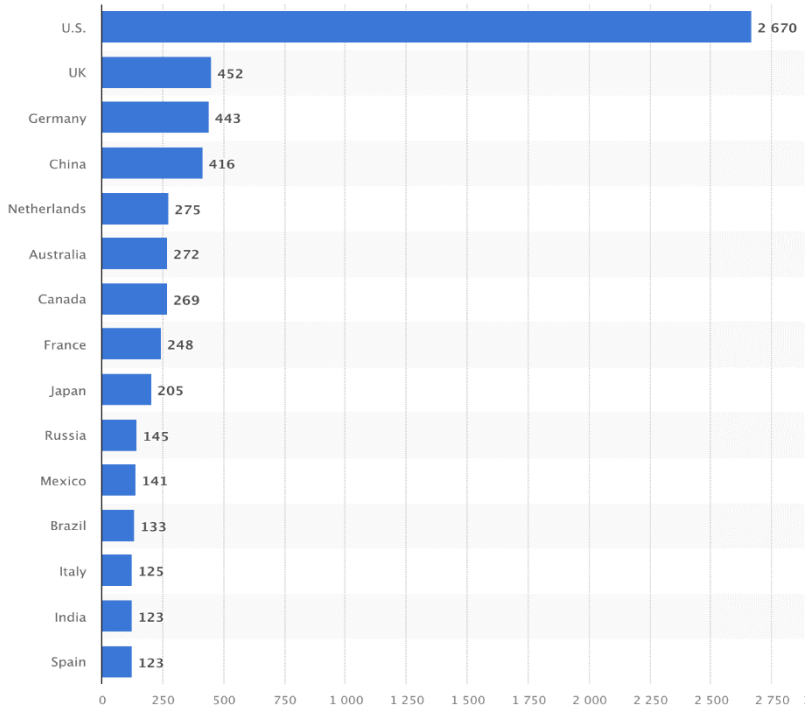
Present day cloud storage market value

The cloud infrastructure market hit $USD42 billion in total revenue in Q2 2021, up $USD2 billion from Q1 and no signs of slowing (Synergy research). Revenue grew at 39% - the fourth consecutive quarter that it has increased. Worldwide cloud usage is estimated at around 25%. The potential for continued growth remains strong, especially with many markets still untapped outside the U.S.



(Source: Synergy research)

Today's centralised cloud business model is dominated by three providers: AWS, Microsoft and Google, providing 63% of storage globally. It is largely one-dimensional, a business pays the storage provider to safely store and retrieve their data, and some access to metrics with very limited ways to optimise. They offer a handful of tiered packages that are 'one-size-fits-all'.



(Source: Statista)

There are approximately 6,000 data centres in the top 15 countries in the world. The worldwide public cloud computing market continues to grow and is expected to reach an estimated $USD482 billion in 2022. This encompasses not only Public Cloud, SaaS (software as a service) and DaaS (desktop as a service) but all the

ancillary services from business processes, platform, infrastructure, software, management, security, and advertising services (Statista).

Future value of the next generation of cloud storage

A Web 3.0 distributed data storage network is being built which is creating an entirely new diverse ecosystem around one of the biggest and most profitable industries in the world. In a decentralised network, new cloud providers will offer tailored storage solutions for specific users' needs, such as:

- User centric - factoring in industry, type of data stored, retrieval needs and location.
- Far more cost effective when designed around where and how the user needs their information retained and retrieved.
- Optimising storage that is 'everywhere' and does not need to be limited to static data centres.

Effectively, this new model requires all of the same ecosystem components of the centralised web and much more.

The 'Filecoin' open-source ecosystem expands to now create a value chain of:

- Thousands of entrepreneurs designing applications that are specialised and make the user experience far better and cheaper.
- Together with thousands of developers to build and support.
- Requiring next generation security service solutions.
- The open-source nature of the decentralised model needs hundreds of research partners, accelerators and investors.

In a very short space of time the Filecoin infrastructure is enabling an ecosystem to build on itself.

The Filecoin Ecosystem (Aug 2021) (source: Filecoin)

Filecoin is generating an ecosystem 10x bigger than what we have today

To meet the ever-growing demand for digital data storage, around 100 new hyperscale data centres are built every two years. At a rapid annual growth rate, around 150 years from now the number of digital bits would reach an impossible value, exceeding the number of all atoms on Earth (AIP).

	Global	Australia
Data centres	Top 15 countries have 6,040 (Statista)	272 (Statista) - 4% of global volume
Total industry (Public cloud, SaaS, DaaS) Revenue (annual) 2021	USD$304 billion (Gartner)	AUD$10.6 billion (Gartner)
Growth rate	23% (Gartner)	18% (Gartner)

Even in today's monopolistic market, it's unlikely the incumbents will be able to keep up, not just with providing data centres but evolving to better meet the needs of a data driven society. More than 5 billion people currently access and store data on their digital devices and in the cloud. Roughly 7.5 billion people will be doing the same by 2030.

Global data size 2020	Global data size by 2025	Global Industry revenue by 2025
64.2 zettabytes (Statista)	180 zettabytes (Statista)	USD$1,092 billion (Gartner)

The Australian market opportunity is investing in the untapped potential of distributed data storage networks, making data storage everywhere.

At the rate the Filecoin network is being built, by 2025 this distributed network has the potential to provide that capacity. Filecoin Storage capacity (as at August 2021) is 8.8 exabytes, growing at 30 petabytes per day, with 2,953 storage providers.

Investment in this next generation data storage could shift Australia from 4% market share to something far greater. And not just for local storage but as a distributed global network, becoming an export service.

Opportunity for local businesses in Web 3.0

Generally, local businesses have the opportunity to dramatically lower their transaction costs through the use of blockchain and digital assets. Translating into better profitability, allowing them to eventually take on more staff and grow their business. This is especially important in a post-Covid world that has resulted in the significant closure of SME's, which are responsible for employing 44% of Australian workers.

One other benefit is improved payment security. Digital assets, through a process called validation, prevents payment fraud. This should give SME's added confidence to sell their products internationally and avoid loss of income from credit card payment fraud.

The Bottom Line

An Australian SME with 100 Terabytes of data stored on AWS S3 glacier will cost a business $26,121 vs $681 per year with Filecoin storage. This is already a massive saving for any businesses operating costs but where the real gains will surface will be in the retrieval proposition.

Decentralised and distributed data storage models will disrupt the one-sided provider model introducing a multi-sided storage and retrieval market. While the 'tokenomics' are in design and evolution, what we do know is introducing this level of competition will result in hyper-competitive pricing that will be game changing for businesses.

	Filecoin (decentralised)	Incumbents (centralised)
Scalability	2900 storage providers globally (less than 1 year)	6040 Data centres <40 regions (20 years)
Cost	$US 5 TiB p/year	$US 192 TiB p/year
Code base/ innovation rate	Crowd source 7,000+ contributing - innovation occurs at exponential rate	Proprietary. New features are proportionate to size of internal development team

Being a fully cloud operating business is expensive, resulting in high operating costs that ultimately lock-up an entity's market capitalisation. The large cloud players enjoy 30% margins which is becoming at risk as businesses evaluate the opportunity cost (A16z).

This A16z industry analysis is put into context in the following Forbes (Why Amazon's Margin Is Filecoin's Opportunity) analysis:

> *Jeff Bezos has a great saying:* ***"Your margin is my opportunity." Essentially, it means he can out-compete almost any business in industries he enters using Amazon by undercutting the competition and doing it cheaply at massive scale.***
>
> *Services like AWS have software-level margins. Put simply, Amazon's most profitable part of the business has fat margins, which is definitely someone else's opportunity.*
>
> *When considering projects like Filecoin, any two-sided marketplace or platform today that has a middleman charging high fees will, with blockchain tech, decrease down to the minimum economically feasible cost to run it. In the web of today, protocols are commodities and virtually free, while the applications are where value accrues.*
>
> *Going forward, we are starting to see new models where protocols are where the value accrues, and applications are open source, freely usable commodities. These protocols have small margins: the operators/nodes make their money/initial cost back and sometimes a slight profit.*

What are the leaders doing?

More than 80% of the world's central banks are exploring central bank digital currencies (CBDC). The most progressive regions are doing the following:

- **China -** China has made the digital yuan a priority, with the goal of competing with the U.S. dollar by creating a digital Asian alternative. Given its political structure to implement change rapidly and in combination with their leadership in the crypto ecosystem (accounting for 90% of trading volumes and two-thirds bitcoin mining operations), China can capitalise on this first mover advantage. (cnbc)
- **Europe -** The European Central Bank is launching a consideration phase for a digital euro with the launch of a digital Euro within a five-year plan.
- **US -** The U.S. continues to lead in the innovation, regulation and implementation of blockchain-based digital securities across the entire ecosystem from banking, payments, to exchanges and insurance.

CNBC analysis reveals that whoever leads CBDCs will have far-reaching implications on the future of digital finance, including cryptocurrency and digital securities. Much like the space race didn't just put a man on the moon, but also catapulted the invention of important ancillary technologies, CBDC (and distributed ledger technology) adoption will influence the forward-moving progress of every industry. There will be exponential

innovations resulting from this digital finance race that we don't even know about yet. The possibilities are endless and we're just at the starting line.

Whoever leads this race and determines the outcome of its infrastructure and operation will most certainly gain a significant advantage and may have the possibility to spearhead many of the other innovations that come from this technology. The conversation of this tech competition between countries was even brought to the US Senate. China is far ahead in implementing real digital finance and currency programs as we speak, giving them a first-mover advantage in something as simple as experience.

Wyoming US - Digital asset legislation
In March 2019, new Blockchain legislation went into effect, setting a new agenda for the space that has been legitimately established. The primary motivator for Wyoming to embrace the crypto industry was diversification. They are reliant on mining fossil fuels which don't have the future they used to. Since introducing digital asset legislation, the state has experienced:

- A 74% increase in registered companies in Wyoming, year on year (Wyoming Secretary of State.)
- Major billion-dollar market cap companies (Kraken, Cardano, Ripple) have announced they are shifting part or all of their business to Wyoming.
- Other US states following suit, looking at introducing digital asset laws with some of those states also starting digital asset banks, like Wyoming.

The risk of doing nothing

What is certain is data creation is growing exponentially and this industry has unlimited growth ahead. The only way to cater for the exponential growth of data is through investing in innovation that will build the next generation models.

We know that the high margins of today's incumbents will come under pressure as they are fixed centralised structures, and their competitive edge can only be pricing. A race-to-the-bottom (akin to Telco mobile plans) is in their future.

Because of this, the top 3 incumbents today will not have the same share of market in 2025 as their high margins and 'one-size-fits-all' value propositions won't compete with the forces of decentralised entrepreneurs designing user focused solutions that meet the on-demand needs of their users at hyper-competitive pricing.

The compelling advantage of 'open code' is the ability for diverse parties to create technology that interoperates which fuels innovation well beyond proprietary architecture. New services built using open-source, multi-tech protocols allow Web 3.0 solutions to innovate faster with richer features, a killer competitive edge that could make the present-day competition not able to keep up.

The risk of doing nothing is that Australia will be importing data storage services from other countries rather than generating them ourselves. The opportunity cost in the next 5-10 years will stand somewhere between 100 billion and 1 trillion dollars.

The Web 3.0 movement is real, it's happening around us. There is a significant economic benefit of taking part but an even bigger immeasurable benefit in becoming an innovation leader that will have Australians designing, developing and working in it.

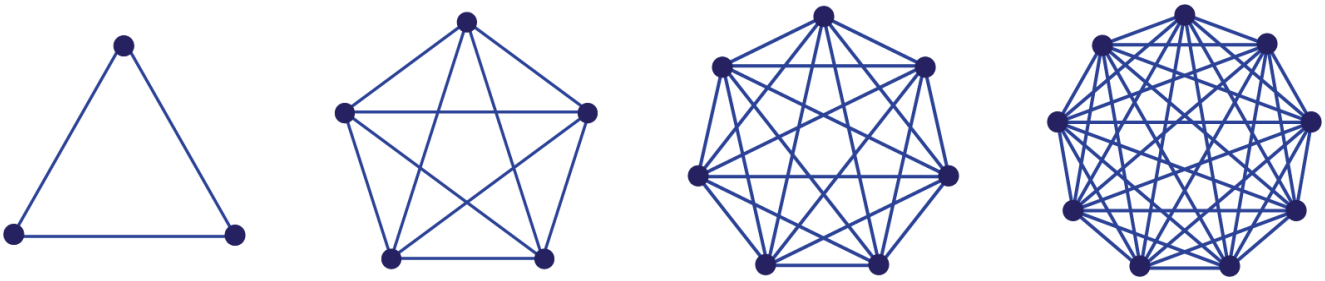
Foreign Investment which could be attracted as a result of Filecoin

Digital asset incentives

Blockchain is a new technology, and akin to the internet in its early days. The internet presented a fundamentally new way of reaching customers, distributing content, product and services. The value created from the internet is clear and in hindsight many Australians would have been better off understanding and investing in the opportunity much earlier as it was proving itself.

The digital asset space presents a similar opportunity now. Metcalfe's law describes the value of a network being proportional to the square of the number of connected users of the system.

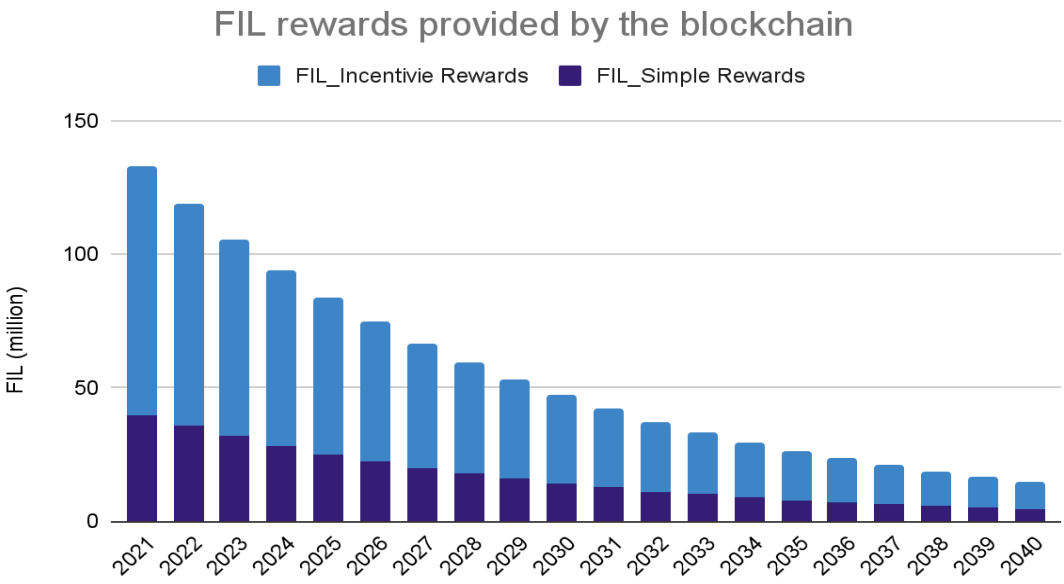
Launching a social media platform today would be incredibly difficult and expensive. Networks by nature are difficult to build, as little value is provided to the early adopters. It is only once the network is much larger in size does the user benefit much more proportionally.



This is important to grasp because blockchains are networks, they require many participants to help operate the infrastructure and create the value of the network. In the digital asset space, the blockchain's native currency is used as the incentive mechanism to bootstrap these networks. Bitcoin's decentralized payment network uses BTC, Ethereum's Smart contracting platform uses ETH and Filecoin's Cloud storage network uses FIL.

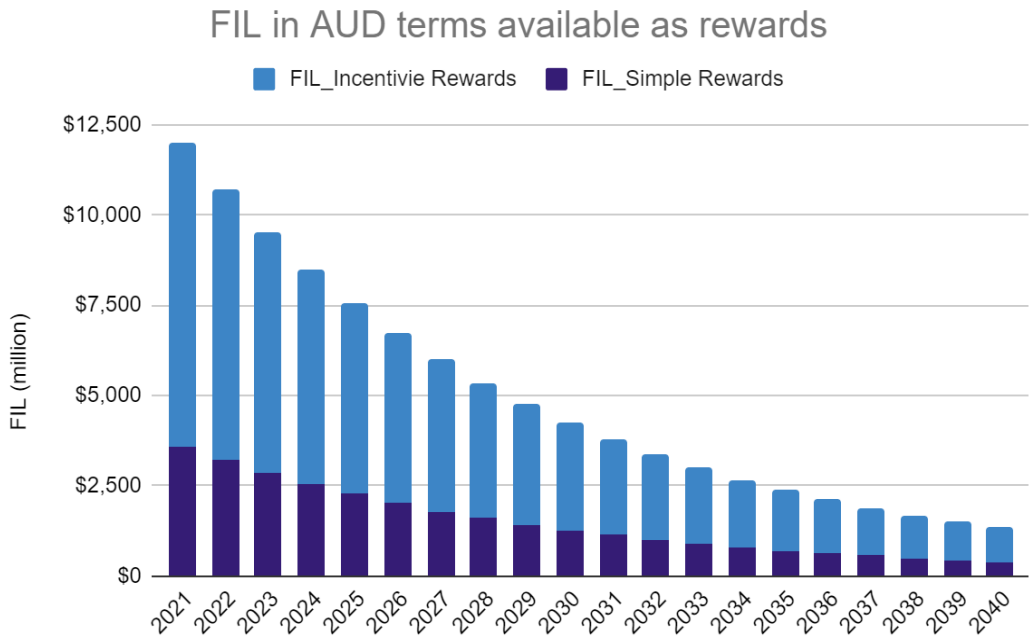
Filecoin

Filecoin is a decentralized cloud storage solution. It has been likened to the AirBnB of Cloud storage. To commercialise the network, the Filecoin Blockchain rewards participants with FIL that provide storage. The FIL rewards in the early years are disproportionately higher than those in the later years as you can see below.

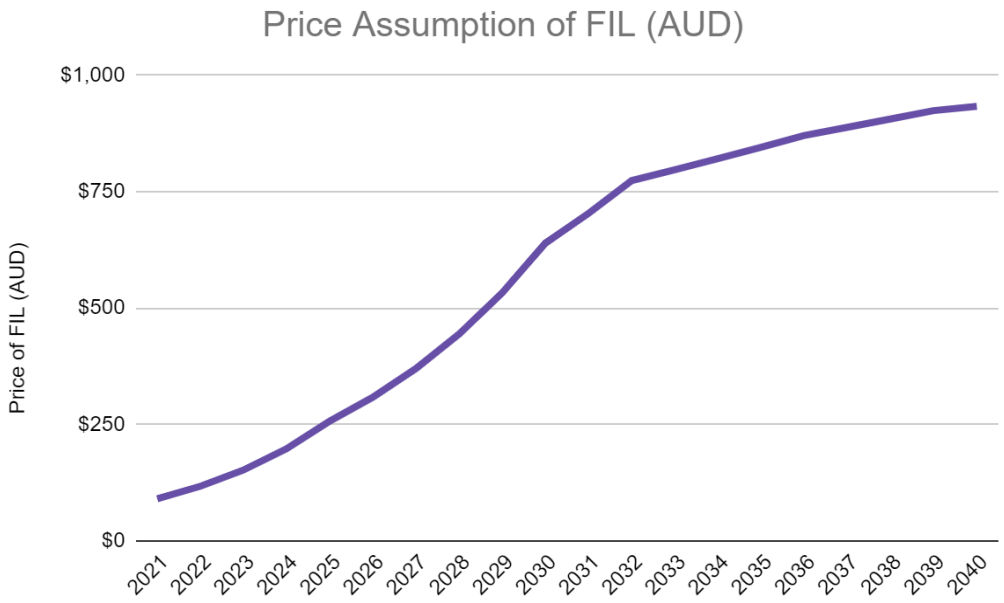


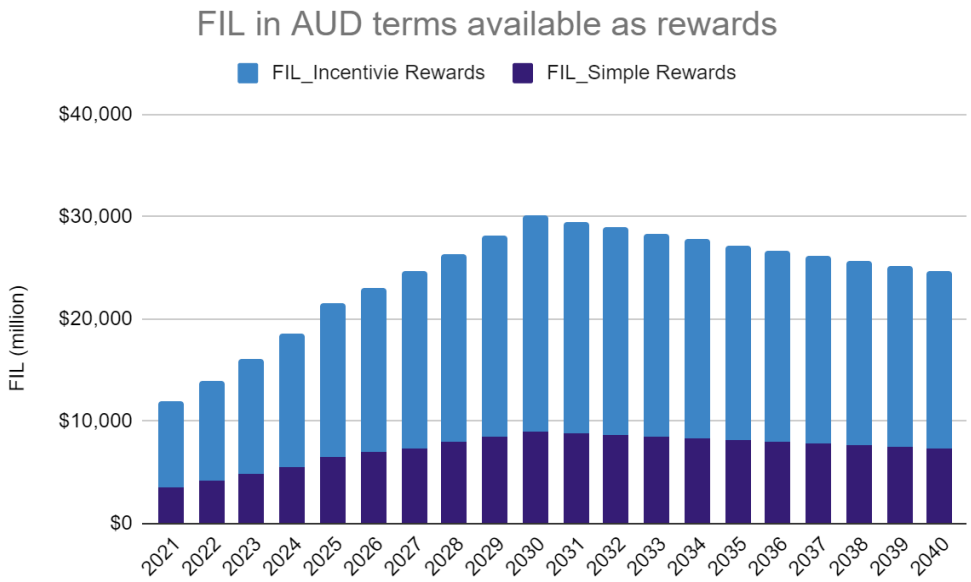
The Filecoin Blockchain increases those rewards if the network as a whole reaches pre-determined milestones. The Simple rewards (dark blue) are guaranteed to be handed out by the Filecoin Blockchain whilst the incentivised rewards (light blue) are increased with how much value the network provides as a whole. Right now the network is well above its milestones (i.e, the incentives are working).

The chart below shows the potential dollar value of FIL rewards available at today's price ~$90 AUD. In this first year, Filecoin is handing out approximately AUD$12 billion as potential income.



However, with some modest assumptions around the price of FIL (see below Chart), these rewards are likely to increase in AUD terms. This assumption can be simply explained as the network becoming more valuable over time and thus the network's native currency becoming more valuable too.





Holon and its shareholders have invested more than $15 million dollars to date to acquire the equipment and assemble the team required to go after the opportunity. With early success we are planning to invest significantly more.

In the next ten years, Holon is forecasted to scale upwards of $50m creating up to 50 new jobs with permanent staff, consultants and specialists generating in excess of $AUD 1bn in revenue. And this is just one Australian business in an exponentially growing 'digital asset' ecosystem.

If, at a country level, Australia was even to capture 1% of the Filecoin rewards available, this would equate to ~$5 Billion dollars over the next 20 years. Australia is in a unique position globally, and 5% of the potential rewards are possible, representing a $20 billion AUD opportunity. This is in addition to the FIL coin that will be earned for contracts that operators (like Holon) form over the network.

Finally, Filecoin will attract businesses through its value proposition (cheap, fast and secure storage) that creates savings for Australian businesses to invest further in growth or other opportunities. It will also create opportunities for Australian businesses to bring to market new businesses that lean into the advantages of the Filecoin network. I.e. where the users retain control of their data.

This is a rare opportunity where significant capital can flow into Australia, but it is not unique. Web 3.0 presents many opportunities like this where the incentives are available for those willing to learn, participate and help grow the technology early.

Finally, businesses like Holon will be attractive to foreign investors who do understand the opportunity here. We believe in our ability to execute, and we want the opportunity for Australian investors to participate.

Australian Job Creation

A recent report from the Tech Council of Australia highlighted the technology sector contributed $167 billion to the Australian economy in FY2021, equivalent to 8.5% of GDP. If the sector was classified as its own industry, it would be equivalent to the third largest contributor to GDP in Australia – just behind mining and finance, and ahead of major industries such as health care, construction, and retail.

The sector's economic contribution has increased 79% since 2016 and has outpaced average growth in the economy by more than four times. This growth is highest in regional and suburban areas, showing that the tech sector is a vital partner in Australia's future prosperity for citizens and businesses.

The tech sector is creating employment opportunities at almost twice the average rate of jobs growth across other sectors, with tech sector jobs growing 66% between 2005 and 2021 compared to the average growth rate of 35%. During the COVID-19 crisis, the tech sector created 66,000 new jobs.

There are now 861,000 people employed in tech occupations in 2021. Software engineers are the 14th most common occupation and represent more Australians than secondary school teachers, plumbers, hairdressers and police.

Nearly one third of tech workers are employed outside of major tech industries, including in public administration, finance, education and manufacturing. The number of workers in 'indirect' tech jobs is equivalent in size to the total mining sector (250,000 employees). Overall, the sector would be equivalent to the seventh largest employer in Australia, providing jobs to 6.6% of the workforce.

Cloud engineering, security awareness consulting and full stack development (central to the digital asset ecosystem) are expected to be among the most in-demand skills in the Australian IT jobs market in 2021 and will need to expand proportionately with the data growth expected. (Hays recruitment).

Australian businesses have been accelerating their use of technology across their business operations, while also increasingly relying on their e-commerce sales channels as a consequence of Covid lockdowns over the past 18 months. With data increasingly becoming central to every aspect of our life, Australia also has the opportunity to take a leading role in the early-stage development of the Filecoin ecosystem.

Case example: Financial Services Industry job creation
With more than 500,000 Australians currently employed in the financial and insurance industries, Australia must create a strong regulatory framework that allows local businesses to adopt innovative technologies like blockchain and digital assets to remain globally competitive. Regulations must also protect investors from fraudulent practices and ensure adequate disclosure requirements.

With the largest technology companies in the world moving into the Australian financial services industry, regulators must act quickly to give local financial companies, including our big four banks, the tools to compete. A Significant number of financial services jobs will be at risk if local businesses cannot provide Australians with high quality and low-cost products that match those offered by international competitors.

Digital banking has one of the strongest use cases for digital assets. The USD Coin is regulated by US financial institutions, backed by fully reserved assets and can be swapped 1:1 with US Dollar fiat currency. It has grown from $1 billion to $28 billion of assets over the past 12 months and is forecast to reach $200 billion as early as 2023.

Australia also has the opportunity to launch an AUD stable coin, but we must act quickly, or risk losing local companies that will increase the use of foreign currencies, like USD Coin, given the substantial cost savings vs traditional banking channels. Lower costs translate into higher profits, allowing Australian businesses to hire more staff across all industries.

The spectrum of skills that will be required in a Web 3.0 world requires all of today's ancillary services from business processes, platform management, infrastructure, software, management, security, and will experience exponential innovation with the invention of new apps and solutions not seen before.

This is just the beginning – Web 3.0 projects are taking off

What Web 3.0 innovation and decentralised data storage new business models offer is business opportunities to spin up enterprises on a zero-marginal cost baseline. That is, it's never been cheaper and now easier with a global open-source community to create, innovate and generate jobs.

The Ethereum infrastructure is a parallel to what we can expect to unfold with Filecoin. Ethereum is six years ahead of Filecoin in its infrastructure design development and adoption. It is the second-largest cryptocurrency after bitcoin, with a market cap of $US 383bn (coinmarketcap), and has for the first time overtaken bitcoin by the number of daily active addresses on its network in Jul 2021 (Forbes)

Ethereum has more than 3,000 applications with 750,00 active registered addresses (as at July 2021). The Ethereum price, up 1,000% on this time last year, has outperformed Bitcoin over the last 12 months by a factor of three as long-awaited upgrades get underway and banks begin experimenting with decentralized finance (DeFi)—using crypto technology to recreate financial products such as loans and insurance and mostly built on top of Ethereum's blockchain.

Some of the largest companies in the world are deploying Ethereum including:

- **Metlife** - one of the oldest and largest insurers in the world is using smart contracts for Lifechain, a new insurance platform.
- **Mastercard** - Ethereum is seen as a key infrastructure on which the company will build payment applications to power the future of commerce.
- **Cisco systems** - was an early adopter, taking a seat at the table of the Ethereum Enterprise Alliance to promote adoption.
- **BP** - Etheruem has a role in its efficiency to energy commodities trading, eventually migrating all forms of energy transaction data to the blockchain, improving data quality and strengthening security.
- **Accenture** - is co-designing and building Ethereum-based blockchain solutions around the world and they have invested in the Digital Dollar Project in partnership with the Digital Dollar Foundation to advance the exploration of a Central Bank Digital Currency (CBDC) in the United States funding five of the pilot programs in the next twelve months.
- **Microsoft** - among the first tech firms that allowed blockchain-based payments, and in 2019, created a mint, named Azure Blockchain Tokens, to help enterprises operate with Ethereum tokens.

> *Ethereum's utility is what is driving its momentum and adoption. Filecoin, not dissimilar, can be expected to follow a similar trajectory.*
>
> *The old corporate model of rent-seeking middleman and paying out the profits as dividends on online marketplaces and platforms will die in many instances.*
>
> *While traditional companies have customers, decentralized applications have users, and that makes all the difference because while customers are milked, users get value out of the tools they are using. For applications and services moving towards more efficient blockchain-based, crypto-economic systems, sky-high software margins will become a thing of the past.*
>
> *(Forbes: Why Amazon's Margin Is Filecoin's Opportunity)*