CANADIAN BLOCKCHAIN CONSORTIUM

White Paper Sponsored by

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The Canada Blockchain Consortium (CBC) is the countries's primary organization representing its growing blockchain technology ecosystem.

With support from our valued sponsors including RBC, Deloitte, Miller Thomson, McMillan and Accenture, we are able to to educate, advocate and build platforms for the technology to thrive and integrate with other innovation communities. In doing so, we're creating an international reputation for Canada as a leader in this emerging field. Contact us to discover how you can get involved with the CBC and participate our exciting blockchain ecosystem. **info@canadablockchain.ca** | **403.808.0733**

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In 2022,

with mass adoption by the world's leading companies, investors, and more than 300 million individuals, blockchain technologies have achieved a critical tipping point of economic importance.

As this area of technology rapidly accelerates, jurisdictions that support blockchain development are gaining key market advantages – and those that fall behind are being left out of one of the most important growth opportunities in the future global economy.

The Canadian Blockchain Consortium, with the support of our generous corporate sponsors and ecosystem of members, believes that the strength of our industry is key to the next stage of Alberta's economic development. While sectors like AI and IoT are highly important, blockchain fundamentally restructuring how value is created and transacted, and enhances every other sector, including emerging technologies, finance, trade, and our traditional industries.

The intent of this publication is a broad overview, with essential insights from industry leaders, of Alberta's path to establishing itself a world-leading blockchain hub. The sectors and applications in this paper are not exhaustive, and do not touch on the many accretive benefits of blockchain adoption by government, or its ability to enrich the success of other technology innovations.

Blockchain's Role in Alberta's Economic Future focusses on the technology's most beneficial business applications and integrates the views of executives and thought leaders from companies located here in Alberta or in the process of relocating to the province. These curated interviews address Alberta's challenges for growth, benefits that can be promoted, and perspectives on policy and regulatory changes that would help the province compete.

Trillions of dollars in value are being realized in the digital economy, and by fostering each of the key applications in this paper, Alberta can leverage its abundant resources of energy, land, talent, and entrepreneurship into a new era of digital success.

OUR MISSION & VISION

ABOUT

The Canadian Blockchain Consortium

Uniting diverse companies, individuals, and organizations from across the national innovation ecosystem, the Canadian Blockchain Consortium is the country's advocate for the blockchain technology and cryptocurrency sector.

The Consortium was launched in 2016 as the Alberta Blockchain Consortium by the late energy and technology pioneer Suzanne West, who had a vision of a collaborative ecosystem that would bring talented and creative people together to leverage blockchain for the benefit of the province.

Reimagined as national organization in 2018, the Consortium now has divisions in each key province, spans thousands of members, publishes a monthly magazine read by more than 24,000 blockchain enthusiasts across the world, and hosts high-profile events, webinars, policy roundtables, and other forums designed to create engagement and build the successful future of our industry in Canada.

Our corporate members include 33 leading organizations who generously sponsor our important activities, and our brain trust of top industry experts join forces in our Finance, Legal and Industry committees to address key challenges and create new opportunities for growth. Our ecosystem partners like Alberta Innovates, the Northern Alberta Institute of Technology, and the Canadian Blockchain Association for Women help support our vision of a strong national digital economy.

Discover more about the Canadian Blockchain Consortium

canadablockchain.ca

The Digital Economy

Sector Highlights

- Cryptocurrency market cap high of US $3 trillion in 2021[1]
- 713% rise in blockchain VC funding in 2021 over 2020[2]
- 300 million global cryptocurrency users in 2021[3]
- US $3.1 trillion in blockchain business value by 2030[4]

Key Terms

Blockchain

Blocks of data linked together in a sequence and hosted across a network of connected computers, with the ability to verify or reject data through agreement by network participants

DeFi

Decentralized finance, an economic system which distributes control over its activities across digital networks, as opposed to governance by central authorities

Digital Assets

Digitally stored content with defined value that attributes ownership and usage rights. Blockchain digital assets include NFTs, tokens, and currencies

CANADIAN BLOCKCHAIN CONSORTIUM

Overview

Blockchain technologies are just one part of a much bigger picture. The world is undergoing a shift towards digitalization that builds on the utility of the internet and its now-billions of connected devices to create a new economy – one that both represents the real world in digital form and generates completely novel forms of value based on intangible assets.

While the traditional economy is moving towards greater digitalization, with McKinsey[5] and other leading research agencies identifying the pandemic as a main driver of accelerated digital adoption, adding in another key factor – decentralization – is creating the highest-value opportunities, and shaping new multi-trillion-dollar economic sectors.

These transformations are foundational ways of making the systems that power our economies more efficient, resilient to disruptions, and able to support new business models at every scale, from individuals and small entrepreneurs to multinational enterprises.

Distributed Networks

Decentralization means the distribution of authority across a wide network of actors in a given application, as opposed to centralized control held by larger entities. Decentralized systems result in a high degree of automation because fundamental rules of governance, such as transactions or the provision of services, are programmed into the system.

This means that the high operational costs of centralized authorities, such as the infrastructure and staffing requirements of a bank, are instead distributed across a large network, and in the case of DeFi, many of the core functions of organizations like banks, such as confirming identities or verifying data, are replaced by automated functions of the decentralized network, often virtually instantaneously.

Cryptocurrency networks, especially the Bitcoin blockchain, are the most prominent examples of these semi-autonomous systems, but the core concept of decentralization as a cost, time, and efficiency benefit to business is also growing in non-finance applications like energy distribution[6] and wireless services[7].

Perspectives

Matthew Burgoyne,
Partner, McLeod Law LLP

Q: How do you believe cryptocurrency and blockchain can enhance Alberta's economy?

A: Traditional industries such as finance, payments and investment are being transformed by cryptocurrency, blockchain, web3 and the metaverse. This is going to be a boon for provincial economies by way of new job growth, new investment, new infrastructure, employees and increased revenue for professional service providers involved in the industry.

Q: What are the key regulatory changes that you think will help Alberta's industry accelerate?

A: I believe a more robust, expansive and radical form of regulatory sandbox in the securities industry will be key. Traditional laws may not fit neatly over the new economy, so there may have to be amendments made to various provincial legislation, such as derivative legislation, the trust and loan companies legislation and provincial consumer protection legislation.

Q: How big of an impact do you believe government support has on blockchain innovation?

A: I believe government support can make or break an industry in a province. I've witnessed it before in other industries, where over-regulation has stifled an entire industry and has driven businesses, investors and consumers away from Alberta.

Technological Trust

The primary challenge to a decentralized digital economy, as opposed to traditional methods of commerce, is trust. A high degree of security is required when using an online platform for, as an example, a large international financial transaction – central authorities like banks, services like SWIFT, and insurers all provide confidence in the authenticity of the transaction and assurance that it will be successful.

Without these central authorities, peer-to-peer models require new methods of creating this trust, and the most beneficial has been blockchain's use of high-grade encryption, and unchangeable databases that contain time-stamped and linked records, to ensure the integrity and visibility of data, preventing currency from being transacted more than once or financial data from being altered. On blockchain networks, all authorized parties have access to the same set of data, removing the risk of disputes.

Digital Value

These efficiencies to and improvements on the traditional financial system, along with other sectors, is the primary reason for the wide adoption of blockchain technologies, as opposed to price speculation. The same principles that make Bitcoin a safer, faster, and less expensive way to, for example, send a remittance from Canada home to the Philippines, are now being used to automate payments in multinational supply chains and optimize energy grids[8]. These efficiency drivers are a leading reason why blockchain is estimated to create US $3.1 trillion in business value by 2030, according to Gartner.

Blockchain has the additional benefits of being able to encode data about the kind of value being transacted, such as certain unique ownership rights to digital IP in the case of tokens like NFTs, and on these secure networks, transactions can be completely automated by programming agreements that execute when defined conditions are met.

These functionalities – which on a basic level, use technology to automate away the need for central authorities and infrastructure – have resulted in an entirely new type of economy that supports the direct exchange of diverse value types, and record levels investment are pouring into the sector, with US $25.2 billion raised by early stage start-ups in 2021.

Growth and revenue predictions for blockchain companies are highly optimistic, because the programmable nature of the value in this system lets individuals and companies securely attribute intangible IP to an monetizable asset - the critical requirement of the inevitable decentralized, digital economy.

Lawrence Truong

VP, Binance Canada

Company Highlights

Founded: 2017

Canadian Headquarters:
#1900 - 520 3rd Ave. SW,
Calgary AB T2P 0R3

Scope of Business: cryptocurrency exchange trading, asset wallet services, cloud services, enterprise brokerage platforms, Visa cash cards

Q: It's exciting that a blockchain company with the profile of Binance is seeing opportunities in Canada – what are your early plans here in Alberta?

A: Our first mandates for Binance's Canadian expansion are to get the business registered in Canada with all appropriate licenses, and we've filed for our securities dealer license with IIROC in addition to our other registrations. We appreciate that Canada has put a bright line in the sand with regards to how cryptocurrencies are treated as an asset class, and as a longstanding tech hub with a business-friendly climate, Alberta is a great head location for us.

Q: What are some of the current opportunities and challenges you see to developing cryptocurrency businesses in Alberta?

A: It's a leading-edge space with so many use cases outside of traditional financial services – I would compare businesses like ours to infrastructure with a big flow-over impact, similar to the way that Amazon created marketplace infrastructure for products and helped accelerate and grow millions of other companies by doing so.

However, this kind of complexity can be challenging to navigate for government, and while it's great that regulators have drawn a line around which existing laws for conventional finance apply to our industry, fitting our diverse types of innovation into this pre-defined box limits some of what we can achieve as a novel asset class with a novel business model.

Q: How do you see the blockchain and cryptocurrency industries benefiting Alberta's economic development?

A: As a relatively new industry, there is so much room for growth in cryptocurrency and a large potential new tax base. Right now, the industry is a bit of a barbell – on one end, unbanked individuals and small personal investors, and on the other end, very savvy large investors and institutions. Where we'll see a lot of expansion is in the middle of the market, especially adoption by businesses.

As we grow our ecosystem of companies here in Alberta, we'll also be able to take advantage of a network effect through partnerships and investment opportunities, which Binance is looking forward to developing as we build our operations. This reciprocal ecosystem, as Alberta companies support each other, will propel our whole economy forward.

Q: What do you think would encourage more large-scale blockchain companies like Binance to locate in Alberta?

A: It's important to emphasize the high quality of living in Alberta and the relatively low costs of operating a business. Over the pandemic, people have been far more focussed on the benefits of work-life balance, and as a native Calgarian, the proximity of the mountains was a big attraction for me personally to move back.

We have a strong density of technical competency here that will also go a long way towards attracting business relocations, and through training programs that target key emerging industries like ours, Alberta can gain a big competitive advantage.

BINANCE

About the Company

Binance is the world's leading cryptocurrency exchange by daily trading volume, reaching 28.5 million global users in 2021 and growing rapidly to provide new services and products to both individuals and enterprises. In 2021, Binance announced its intended expansion into the Canadian market, registering three Calgary-based companies and building a team of experienced leaders in capital markets, compliance and Canadian regulatory policy.

Alberta's Blockchain Ecosystem

Overview

Alberta is currently home to approximately 40 companies focussed on blockchain technologies and cryptocurrencies, spanning all aspects of the industry including mining, payments and purchasing services, exchanges, and business solutions for industries like energy, agriculture, and retail.

These companies range in scale from start-ups to established, publicly listed firms like mining giant Hut 8 (HUT.TO), with a market cap of close to CAD $950[8] million, and ATM company Bitcoin Well (BTCW.V), which grossed nearly CAD $100 million in revenue in 2021.

Through the contributions of its sponsors and volunteers, the Consortium hosts ecosystem events, forums, promotes the work of the province's companies and advocates for the industry. Additional support for Alberta's blockchain community comes from organizations like Alberta Innovates, the Northern Alberta Institute of Technology, Alberta IoT, and the Canadian Blockchain Association for Women.

According to members of the Canadian Blockchain Consortium ecosystem interviewed for this publication, Alberta's business-friendly tax policies, low cost of living, and in the case of cryptocurrency mining, availability of energy resources, all contribute to the strength of the province's industry. Across business sectors – from blockchain legal advisory to mining and exchanges – Consortium members report being approached by blockchain businesses inquiring about locating in Alberta, demonstrating the growth in our reputation.

While the Alberta blockchain ecosystem is gaining more international attention and business opportunities, its scale is relatively small, despite the province's natural and business advantages. Singapore, a leading blockchain hub, has at least 430 companies[9], and Texas is home to more than 200 blockchain company locations, including new multi-billion-dollar facilities[10] being constructed by the world's biggest mining firms, including Argo Blockchain and Riot Blockchain.

In Alberta, cryptocurrency mining is a key point of expansion that leverages the province's existing competencies and talent, along with major potential revenue generators like exchanges, payments services, and blockchain solutions for core industries like energy.

Bitcoin's Global Momentum

Sector Highlights

- All-time high of more than US $67,000 in 2021[12]
- 40% share of the total cryptocurrency market[13]
- Market cap high of US $1 billion in coins (2021)
- Accepted by major brands like Starbucks, Microsoft and Coca Cola[14]
- The only cryptocurrency to have achieved legal tender status

Key Terms

Proof-of-Work (POW)

A block of data is added to the blockchain network after it is verified by participants that solve a mathematical puzzle and the networks agrees

Private Keys

A string of digits that represents access to a Bitcoin wallet and allows the currency to be securely stored and transferred

Wallet

Files or software applications that hold user's private keys, which interact with public keys to transfer value like cryptocurrencies

Evolution

Bitcoin and blockchain technology originated in a 2009 whitepaper[15] published pseudonymously under the name Satoshi Nakamoto, which outlined an innovative method for securely conducting peer-to-peer electronic transactions. Using bitcoins, units of digital currency that could be exchanged using public and private cryptographic keys, people could directly transact with as much confidence online as they could in person using physical cash.

This innovation is continuing to transform the world. While Bitcoin's underlying blockchain technology has sparked the creation of thousands of other currencies and a growing universe of digital assets, it remains by far the widest-adopted cryptocurrency at a US $874 billion market cap in April of 2022[16], and with utility far beyond Nakamoto's initial vision of electronic cash.

Business Adoption

As the most established cryptocurrency, Bitcoin is accepted by Microsoft, Coca-Cola, Starbucks, Home Depot, Virgin Galactic, and thousands of other retailers, both as direct payments and through the use of payment intermediaries like BitPay. Visa offers a number of cards linked to cryptocurrency accounts through partnerships with Coinbase, Gemini and other exchanges, and payment services companies like Paypal and Square are aggressively pursuing this market with services, including purchases of Bitcoin.

Financial Sector

2021 is considered the year that Bitcoin became mainstream in traditional finance. Major banks now providing Bitcoin services include US Bank, the fifth largest in the United States, which will be taking secure custody of private keys for the cryptocurrency, a move designed to support the growing number of fund managers incorporating Bitcoin holdings into their portfolios[17].

Custody is an important opportunity for the banking sector, along with facilitating transactions of Bitcoin for institutional clients, which Morgan Stanley[18] and multiple other US banks now offer. In the public markets, both Canada and the US have approved funds backed by Bitcoin securities like futures, and on the TSX, funds like the CAD $2 billion Purpose Bitcoin ETF provide direct asset exposure[19].

Store of Value

Along with its high levels of acceptance and trust among both individuals and corporate holders, one of Bitcoin's key differentiators is that, unlike most other cryptocurrencies, Bitcoin's supply remains fixed at 21 million coins. This programmed scarcity prevents Bitcoin from being devalued due to increases to its money supply, which has led to its adoption as a hedge against increasing inflationary trends in the traditional economy. Some of the largest long-term Bitcoin wallet holders include Tesla, at 48,000 coins, MicroStrategy, at more than 121,000 coins, and Bank of New York Mellon[20], which holds a substantial amount of Bitcoin as part of its US $321 million blockchain strategy.

Government Adoption

Bitcoin has received significant support from forward-thinking areas in North America like Texas, Florida, New York State and Wyoming, which have all developed clear regulatory policies and publicized their respective government's commitment to the industry's growth[21]. The most striking example of Bitcoin adoption by government is the Government of El Salvador, which in 2021, announced that it would become the first nation on earth to accept Bitcoin as legal tender, a landmark moment for the cryptocurrency, and potentially what PriceWaterhouseCoopers described as a "domino effect", that could lead other countries. especially developing nations with unbanked populations, to follow with similar policies[22].

INDUSTRY **INTERVIEW**

Adam O'Brien

CEO, Bitcoin Well

Company Highlights

Founded: 2013

Headquarters: 10142 82 Avenue NW, Edmonton, AB T6E 1Z4

Scope of Business: non-custodial ATM Bitcoin purchasing services, technology development, consumer education

Revenue: CAD $100 million in 2021

About the Company

Bitcoin Well (BTCW.V) is one of Canada's longest operating cryptocurrency services companies with 220 ATM locations across Canada, two in-person branches, and a remote branch location in Winnipeg. The company enables consumers to safely and instantly purchase Bitcoin at convenient locations in partnership with retailers and other services businesses, innovates technology solutions, and supports programs for Bitcoin education. In 2021, Bitcoin Well became the world's first publicly listed Bitcoin ATM company.

BITCOIN WELL™

Q: How would you describe Bitcoin Well's experience as an Alberta-based cryptocurrency company?

A: Bitcoin Well doesn't take custody of our customer's BTC, so our experience will differ from that of exchanges and other companies that have that responsibility. In terms of banking, which is a challenge in our industry, we have a great working relationship with Connect First Credit Union, and we were able to develop that based on our Alberta location and public listing status.

Having gone through the lengthy process of navigating regulations in Ontario while obtaining our TSX-V listing, I think it's great to watch our Alberta government institutions engaging with and asking questions of the crypto sector, which wasn't the case there.

Q: What are some of Alberta's key challenges and opportunities for the industry?

A: On the positive side, Alberta has a strong ecosystem – we have the Canadian Blockchain Consortium based here, and the group's work with NAIT and government is supporting better education and training about our industry. The province has a lot of very entrepreneurial organizations and people and many natural resource advantages.

For some of the challenges we face here, traditional banking services are still very difficult for crypto businesses to access. My wife, simply due to our marriage, has found it impossible to get a checking account, and it's hard to believe there is still such an extreme response to our industry in 2022, when we're so heavily regulated in Canada and have received so much adoption by financial sectors elsewhere in the world.

Q: Why do you think there are still so many obstacles to cryptocurrency's financial system access?

A: Moves that were made in the past towards banking crypto-related businesses didn't involve enough financial institution education about the commercial activities and operational needs of our industry, and in some cases, participants in early sandbox environments didn't have a rigorous vetting process. In my opinion, high levels of risk are being misattributed to the industry and given the stringent KYC and other regulatory requirements for simply buying Bitcoin, relative to the anonymity of most other consumer purchases, we have an excellent safety profile and need to revisit these restrictions.

Q: How do you think the government can best support the cryptocurrency industry's growth?

A: I come from a position that all of the participants in this ecosystem have aligned incentives – whether government, banking institutions or crypto businesses, we all want economic growth and new opportunities for Alberta while protecting consumers from issues like fraud.

It's important that we have a mandate from the government for it, the banking sector, and crypto industry to all collaboratively work towards solutions that will help us access important financial services while developing an anti-fraud program that addresses the concerns behind the current restrictions.

Q: What kinds of opportunities do you see for cryptocurrency to move Alberta's economy forward?

A: I see a lot of good things in Alberta's past and great things in our future. Bitcoin attracts smart and talented people who, in my experience, focus more on the future and the next generations than you find in most other industries, because they're using the technology to move towards a very different world, one with sound money and greater individual sovereignty.

Many of Alberta's retraining and educational programs are focused on legacy industries, but we have a great talent pool here that can pivot to cryptocurrency and blockchain, and we'd love to see things like development workshops get government funding, or funding for companies to integrate Bitcoin payments and solutions. We'll see a strong and innovative ecosystem take shape from that kind of support that will benefit the whole province.

The Emerging Metaverse

The Emerging Metaverse

Sector Highlights

- Predicted by to reach US $13 trillion in value by 2030[23]
- Anticipated to be a 1/3 market share of the total digital economy[24]
- US $10 billion invested by Meta (Facebook) in 2021[25]
- US $500 million in virtual real estate purchased in 2021[26]

Key Terms

Metaverse: an interconnected network of multi-purpose online virtual worlds that use blockchain technologies as the primary means of ownership, value and exchange

Web3: considered the next evolution of the internet (Web2), Web3 is the decentralized infrastructure of the metaverse and controlled and created by its users

NFTs: non-fungible tokens, or digital assets that represent unique forms of value that are not interchangeable, such as art, intellectual property or rights to real-world items

Overview

The metaverse may have entered the wider public consciousness in October of 2021, with the announcement by Facebook CEO Mark Zuckerberg that the company was rebranding to "Meta" – but the key ideas and technologies behind the term, and adjacent concepts like Web3, have been evolving for years as part of a broader vision of the future for both the internet and our society.

The origins of the term metaverse are credited to pioneering cyberpunk author Neal Stephenson, where it referred to an immersive, interactive virtual world in his 1992 novel Snowcrash, and was further ingrained by Ernest Cline's popular Ready Player One. A common trope for decades in science fiction, the central thesis is that at some future point, enabled by new technologies, humanity would shift a large portion of its economic and social activities into digital worlds.

The largest multi-national brands and investors now appear to agree that this shift is well underway, and that blockchain and cryptocurrencies are the foundations of this new environment. Accelerated by the move to remote work and life resulting from the COVID-19 pandemic, which caused what research firm McKinsey[27] described as a "quantum leap" forward in permanent digital adoption, the idea that most activities will take place exclusively online seems far more likely than it would have in 2019.

Within just a few short months between the end of 2021 and spring of 2022, brands like Gucci, Coca-Cola, Samsung, and dozens of other multinationals acquired, for real currency, prominent office locations and customer experience centers in popular virtual worlds like Decentraland – and the technology sector is spending billions of dollars on building out new platforms in this interconnected universe.

Immersive Economies

While the expansion of the metaverse might seem to have happened almost overnight, it builds on an existing industry with tremendous proven growth: online gaming. The video game sector was worth an estimated US $178 billion in 2021, predicted to reach $268 billion by 2025, with a user base of an astonishing 3.2 billion people worldwide[28]. Within online games, sales of virtual assets and services – including wearables, weapons, and features access – is a US $61 billion business, with games that use cryptocurrency as the medium of exchange growing 92% from 2020 to 2021[29].

The metaverse applies many of these proven concepts and tools to create a more engaging, user-driven experience with a stronger sense of personal ownership and dominion than, for example, the 2003-launched Second Life, an early metaverse progenitor, which has recently seen a resurgence in its own internal economy due to current hype.

While the metaverse's platforms and utility is evolving rapidly, it's commonly defined by three essential qualities: presence, interoperability, and standardization. Presence refers to the convincing nature of the user experience, with its engaging worlds, interactivity, desirable virtual products, and the use of technologies like Augmented Virtual Reality (AVR).

Interoperability is a critical element that differentiates the metaverse from gaming or platforms like Second Life. Users can transfer their currency and avatars – and valuable purchases like in-world clothing or products – seamlessly between environments, enabled by blockchain solutions like NFTs and cryptocurrency that can be held securely and sovereignly by owners.

Standardization means that, through developing consensus on global protocols, platforms can interoperate with each other, allowing for shared services and technologies. Web3, also referred to as Web 3.0, is considered the next evolution of the internet, and incorporates these types of standards and blockchain infrastructure to enable decentralization and greater user control over internet development.

Economic Opportunity

Blockchain-based digital assets like cryptocurrency and NFTs are the means of exchange and value creation in the metaverse. These technologies are essential because, unlike with centralized platforms such as most online games, assets in an interoperable network of worlds need to be tied to the individual owner, rather than the platform, with a high degree of ownership certainty.

NFTs, which commonly represent digital assets like art, real estate or clothing in the metaverse, use blockchain to represent defined ownership rights in a securely encrypted format, and are held directly by users in wallets or in marketplace accounts. This accelerating $41 billion (2021)[30] industry enables companies and individuals to participate in the metaverse economy, and as evidenced by the rapid adoption among multi-national brands, early support for the adoption of technologies could result in a significant competitive advantage for Alberta enterprises and start-ups.

From an infrastructure perspective, the energy-intensive graphics processing and cloud services required by the metaverse are predicted to result in a significant market demand for new data centers, like Meta's US $1 billion metaverse development in Spain[31], and increase the need for co-location opportunities. This creates synergies with the new-build data center requirements of the cryptocurrency mining sector, and a way to leverage Alberta's low-cost natural gas resources into the digital economy.

Our White Paper sponsor:

Khurram Shroff

CEO, iMining Technologies Inc.

Headquarters:
580 Hornby Street, Suite 750,
Vancouver, BC, V6C 3B6

Scope of Business: Web3.0, blockchain and digital infrastructure, digital assets, cryptocurrency mining, staking and trading

About the Company

iMining (IMIN.V) is a leading Canadian blockchain technology company with diverse business segments across the technology sector and trading publicly on the TSX Venture Exchange. Focussing on supporting institutional investment in the digital economy and bridging the cryptocurrency sector with traditional markets, iMining has been an early Canadian adopter of metaverse investments and project development. With offices currently located in Vancouver and Toronto, the company is undertaking an expansion into the Alberta market.

iMining TECHNOLOGIES™

Q: What are some of the key reasons motivating iMining to expand into Alberta as a new office and business location?

A: Alberta has a strong blockchain ecosystem and business friendly policies, which changed our focus from our current locations in BC and Ontario. With the recent prohibitions on crypto mining in China and other countries, there was a big shift to hash power in Texas, and we think Alberta has similar advantages, including great tax policies.

The province has an ideal dry and cold climate, and we think there are a lot of opportunities for sustainable and eco-friendly mining operations. Our business can be supported by a more accessible and friendlier banking infrastructure with ATB. Hopefully the growth of the industry in Alberta will encourage other finance sector participants. We also believe that the government of Alberta is more accessible and interested in collaborating with our industry than in other regions.

Q: Why has iMining chosen to put a strong business focus on the metaverse and Web3?

A: Even cryptocurrency's previous skeptics like Jamie Dimon of JP Morgan have moved quickly into the metaverse, which has a crypto-based economy, and they're being joined by most major organizations. iMining has made strategic real estate acquisitions and launched our head office in Decentraland, which now has a US $6 billion market cap. It's a powerful tool for business and social good – we're working with organizations like the Glenrose Rehabilitation Hospital Foundation to help leverage the metaverse for fundraising and brand awareness.

Q: How do you believe that the rapid expansion of the metaverse could benefit the Alberta economy?

A: Searching for the metaverse now brings up 2 billion google hits – it's gained the publicity in a few months that it took Bitcoin 12 years to achieve. I believe that the metaverse can help Alberta transition from a resource economy to a technology economy through giving the province's innovative companies an international presence and marketing. It's growing exponentially and joining now will be a major advantage.

Q: What can the Alberta government do to support the growth of its blockchain sector, including companies focussed on the metaverse?

A: In other regions that have become crypto hot spots, like Portugal, Dubai and Miami, government engagement and support signalled to the global crypto industry that this was the right place to set up operations. It magnetized talented people and companies around these hubs, and we think Alberta can do the same.

The technology industry is competitive when it comes to talent and tends to cluster around hubs. Facebook's announcement about their Toronto location and the hiring of 2500 computer engineers makes the city more attractive to skilled people and emerging companies, and we can gain that attention here in Alberta by looking towards the kind of innovation that will make people's lives better.

It's also about the integration of technologies like AI, virtual reality and IoT, where Alberta has a strong presence, with blockchain and the metaverse, which will cause a parabolic rise in the tech sector because of their synergies.

Q: What are your future plans in Alberta as you expand your offices?

A: iMining believes Alberta has the three most important factors in a location: a strong technology sector, talented people with great capacities, and an abundance of energy resources. In addition to growing our team and infrastructure, we want to help expand the blockchain ecosystem and build an international reputation for the province.

There is incredible blockchain talent in the world that we can attract here due to the great lifestyle and low cost of living, including from Ukraine, which has some of the world's top programmers and coders. iMining is currently working with 60 Ukrainian artists and technical experts on a project and think Alberta would be an ideal location. We can be a beacon of innovation to the rest of the world here, and we're excited to be a part of it.

Cryptocurrency Exchanges

Sector Highlights

- 600% increase in exchange revenue from 2020 to 2021[32]
- 2021 trading revenue of US $24.3B
- 600 significant exchanges operating globally[33]
- 300 million registered cryptocurrency users (2021)[34]
- Predicted user growth to 1 billion by Q4 2022[35]

Key Terms

Cryptocurrency Exchange

A platform that supports the trading of cryptocurrencies for other assets, including digital and fiat currencies

DEX

A decentralized exchange, or peer-to-peer marketplace where users can directly exchange cryptocurrencies for fiat or other digital assets

NFTs

Non-fungible tokens, or digital assets that represent unique forms of value, such as art or intellectual property

Overview

Exchanges are the essential market infrastructure of the cryptocurrency industry, providing international trading services and liquidity to the accelerating digital economy. Considered the biggest drivers of growth in the adoption of cryptocurrencies through retail-focussed services like trading, wallets, and now, account-linked debit and cash cards, exchanges provided access to this accelerating market to retail clients well in advance of 2021's rush to institutional cryptocurrency investment.

Leading global exchanges are the Coinbase, which grew over eight years to now service 30 million international clients[36], and Binance, the world's largest exchange by trading volume, which is currently undertaking an expansion into Alberta. A highly profitable business that, in 2021, had total industry revenues that were 60% higher than that of traditional exchanges like the NYSE and TSX, exchanges are well-positioned to benefit from the rapid rise in institutional and retail cryptocurrency adoption.

In 2021, just under 4%, or about 300 million, people around the world participated in this emerging market. In Canada, according to a 2021 study conducted by Bitcoin Well and Ipsos Canada, 14% of survey respondents said that they owned cryptocurrency, compared to just 3% estimated Canadian ownership of Bitcoin in 2016, and another quarter of participants said that they were considering a purchase[37].

Business Requirements

Key requirements for cryptocurrency exchanges, similarly to those of other parts of the blockchain industry, are clear regulations that define the legal status of assets, provide a path to registration that considers the differences between digital assets and existing types of currencies, commodities, and securities, and support the engagement of the traditional bank sector with exchanges, such as the 2021 Texas authorization for the state's chartered banks to take custody of cryptocurrencies[38].

Secure custody provision for digital assets is a key industry need, along with access to fiat services. Despite the recent moves by the US and other international banks to provide services to cryptocurrency exchanges, this remains a significant challenge and competitive disadvantage in Canada, with this paper's survey and interview respondents reporting low access to traditional financial services across the industry.

For exchanges, which are heavily regulated through Anti-Money Laundering (AML) laws, harmonized provincial securities laws, and compliance with US sanctions laws through the Office of Foreign Asset Control if businesses service American clients[39], the risk profile of the industry in 2022 is misaligned with its treatment by Canadian financial institutions.

Perspectives

Wayne Logan
Partner, Miller Thomson LLP

Q: How would you characterize the current experience of getting exchanges to market in Alberta?

A: The current process for exchange registration attempts to fit crypto exchanges into a legislative framework which was not developed with these types of businesses in mind. As a result, the process is cumbersome, time consuming, expensive, and generally requires the crypto exchange business to apply for exemptions from certain securities laws, a requirement that adds additional time and expense to the registration process.

Q: What regulatory changes would you make for the best outcome for the industry and province?

A: In our view it would be appropriate for the government and security market regulators to develop a registration scheme that is tailored to the unique characteristics and nuances of crypto exchanges. Similarly, it would be beneficial to have a registration scheme set up (under relevant bank and trust company laws) for the licensing of crypto custodians, with the requirements for these entities set out in the legislation and specifically tailored to the unique characteristics and risks of crypto custody.

John-David D'Souza,
Associate, Miller Thomson LLP

Q: How would it benefit Alberta to become a hub for crypto services?

A: Alberta is quickly becoming an international hub for crypto services. Our Miller Thomson Calgary office are receiving queries from Dubai, Paris, Singapore, Liechtenstein, New York (to name a few) regarding the process and related expense of establishing crypto market exchange or restricted dealer business in Alberta. Reasons for this are our favorable tax regime, respect for the Alberta Securities Commission, Canadian Blockchain Consortium leadership and well established blockchain businesses such as GuildOne. Another benefit to Alberta to further support crypto services is growing our tech talent pool and attracting world class blockchain, token and crypto currency entities – all of which want to participate in the Alberta crypto ecosystem.

Market Opportunities

Building on the momentum of growing consumer demand for cryptocurrency services, which is predicted by Crypto.com to reach 1 billion by the end of 2022, Alberta can leverage its jurisdictional stability and low cost of business operations into a thriving hub for exchanges, along with ancillary services like digital asset custody.

Decentralized exchanges (DEXs), which allow users to trade, or swap, their digital assets directly, without custodianship or facilitation by centralized exchange providers, are another accelerating part of the industry, with US $1 trillion in trading volume in 2021. With the dramatic rise of Web3 and the metaverse, investment in DEXs that support a wide range of asset types like NFTs and cross-platform integration is quickly increasing, with platforms like the US-focussed 1inch completing major raises of US $100 million or higher, with plans to provide digital asset services to hedge funds and institutional investors[40].

Beyond simply providing trading and storage services to retail clients, exchanges are emerging as points of integration between the traditional and decentralized markets, which are increasingly critical as blockchain-based economies like the metaverse are predicted by Goldman Sachs and others to capture a large share of the existing US $25 trillion digital economy.

Regions that support this intersection of the old and new world, through connecting institutions to the currencies and assets that represent value in this accelerating market, will gain a strong early competitive advantage in the digital restructuring of the global economy[41].

Pamela Draper

CEO, Bitvo Inc.

Company Highlights

Head Office:
500 4 Ave SW Suite 410, Calgary, AB T2P 2V6

Scope of Business:
Crypto asset trading platform, Visa cash cards, education

Regulatory Status: Money Service Business registered and examined by FINTRAC, seeking restricted dealer status with the Canadian Securities Association

Growth: Founded in 2017 and launched in 2018, Bitvo has grown its userbase to almost 14,000 users and achieved positive free cash flow within its first two years of operation

Q: What are some of Alberta's key advantages as a cryptocurrency company in the province?

A: Alberta's low cost of living is great for attracting and retaining high-quality talent, and it's a big positive to have overall lower expenses for business operations. These natural incentives, like the accessibility of nice office space relative to other regions, make the province very attractive.

Q: What important factors do cryptocurrency businesses look for in a location?

A: Clear regulations are important, but for business operations, access to traditional banking services is essential. In Alberta, ATB had historically been a draw for companies looking to develop crypto services. The industry also looks for active government engagement and support, and a collaborative environment.

Q: How can the province improve its ability to attract new companies and build the industry?

A: Deeper engagement between the crypto sector, government and banking industry in an effort to expand the number of banks offering services to crypto businesses would be key. We need more support with the day-to-day lifeblood of our business – access to fiat settlement and other services that bridge the digital and conventional economy. Our industry has never been more regulated, and we believe the province's institutions can move forward with us with confidence.

Additionally, many grant programs and other forms of government funding exclude cryptocurrency related businesses, and since this is such a strong growth area for the economy, this kind of support would be beneficial for both our industry and the province as a whole.

Q: Where do you see Alberta's biggest opportunities in expanding its blockchain sector?

A: The province could be an incredible accelerator for diverse kinds of crypto services, including exchanges, payments and trust companies that take secure custody of digital assets. We have a big opportunity because Canada's blockchain hub hasn't been defined yet – there is a lot of activity in Vancouver and Toronto, but Alberta is accelerating quickly.

Government statements of support have been a move in the right direction and, if we follow this with concrete action, Alberta can become a leading international hub. We've already seen fintech success with companies like NEO Financial and Benevity, and in the cryptocurrency sector, we now have digital asset storage companies like Tetra Trust and Brane Capital supporting our growth alongside a few trading platforms that are also located here. Alberta could be an ideal hub for startups to gain licensing, develop their product offerings, and expand across Canada.

As many technical workers look to technology to escape the cyclicality of oil & gas, which we've experienced with some of our staff at Bitvo, our industry's growth will create retraining and employment opportunities that will have a major economic impact.

Bitvo™

About the Company

Bitvo is a top Canadian crypto asset trading platform and services company that offers a feature-rich client experience, including the Bitvo cash card, provided by Visa, that allows consumers to use their Bitvo account wherever traditional cards are accepted. Under the leadership of CEO Pamela Draper, the company achieved positive cash flow and major market presence within its first 18 months. A leader in regulatory compliance, Bitvo was one of the first crypto exchanges to register with FINTRAC and successfully undertake an examination, and is currently seeking restricted dealer status with the Canadian Securities Association.

SECTION 6

Industry Blockchain Solutions

Sector Highlights

- 24% of companies surveyed estimated a US $5-10 million blockchain spend in 2021
- Adopted by 33% of companies in consumer products and manufacturing
- Energy benefits include a 30% reduction in oil & gas product transaction times[42]
- Industry is predicted to spend US $20 billion on blockchain services by 2024[43]

Key Terms

Smart Contracts

Programmable digital agreements that are executed within computing environments and used to automate contract settlement based on data accessible to the blockchain network

Private Network

A closed, secure network typically used by enterprises that is only accessible to permissioned users and is governed by a central operating authority

Decentralized Identity

Digital credentials secured by blockchain cryptography that are digitally signed by authorities, but held in custody and controlled by users

Overview

As a fundamental shift to a new way of managing information and value, the movement towards a decentralized and digital economy affects all sectors, including legacy industries like natural resources, and the supply chains that underpin most physical economic activities.

As part of the wider Fourth Industrial Revolution, which describes the business changes created from the incorporation of physical assets into an increasingly accurate digital world through technologies like IoT, AI and robotics, decentralization reduces a major cause of inefficiency in complex systems – information asymmetry, or an imbalance in access to necessary information among parties in a transaction or business process.

According to PriceWaterhouseCoopers (PwC), in a 2020 study titled Time for Trust: The trillion-dollar reasons to rethink blockchain, the firm proposed an estimated impact of US $1.76 trillion in aggregate business value on the global GDP by 2030, from benefits like the disintermediation of financial transactions, the optimization of supply chains, and streamlining access to services through decentralized identity[44].

Many of the beneficial impacts predicted by PwC result from eliminating asymmetries in access to information within business systems, through the levelling effect of shared, secure blockchain databases in which all parties have access to the same trusted facts and can then automate processes that otherwise require verification by intermediaries, auditing, legal advisory, and dispute reconciliation[45].

Important blockchain applications include private networks, which, unlike public blockchain networks, restrict access to permissioned users, and smart contracts, which are digital agreements that encode the details of a transaction, such as rights or payment terms, and can be programmed to automatically execute when agreed-upon conditions have been met.

This foundation of trusted – or "trustless" – data opens diverse opportunities. Across industries, companies are seeing strong value in the application of digital assets to business processes and growth, with 80% of participants to Deloitte's 2021 Global Blockchain Survey[46] responding that they agreed that their industry would see new revenue streams from these technologies, including cryptocurrencies, and 73% agreeing that their company would lose a competitive advantage if they lagged in adoption.

Additionally, access to blockchain networks and applications, along with financial services, can be facilitated through decentralized identities for both individuals and corporations, which provide portable, secure, and self-owned credentials.

Energy

An industry that generates petabytes of data annually – each equivalent to 500 billion printed pages of paper – the energy sector has been highly motivated to adopt digital technologies to streamline operations and generate value from its vast pools of data.

One of the areas of the industry that has remained highly manual, however, is the management of the complex relationships and transaction settlements between vendors and project partners, which can be effectively automated using smart contracts, as shown in Calgary-based GuildOne Inc.'s 2021 joint venture and authorization for expenditure projects with the Blockchain for Energy Consortium, which includes majors like Chevron, ConocoPhillips, and ExxonMobil[47].

Other key potential benefits from blockchain adoption in oil and gas include cryptocurrency mining projects that create value from less marketable assets like stranded gas, automating the challenging process of accurate carbon accounting, the monetization of voluntary carbon credits generated by sequestration and emissions reduction activities, and the management and transaction of assets like real estate, data, and fractionalized interests in projects.

Agriculture and Forestry

Due to high-profile provenance issues that have resulted in barriers to international trade, and greater consumer demand for sustainability, natural resource and food production industries are increasingly being pushed to demonstrate proof-of-origin for products.

Agriculture has been a prime market for the adoption of blockchain solutions, especially to meet the stringent requirements of export markets like Asia, which place a premium on safety and origin certifications. Alberta's food production industry, which totalled CAD $12.4 billion in 2020, has been the subject of several blockchain projects for the origin of products like beef, such as Edmonton-based TrustBIX's participation with Cargill on its sustainable beef program[48].

Globally, the forestry market is highly challenged by fraud and misrepresentation, and an area where blockchain traceability can build a trusted Alberta brand for sustainable wood products and streamline international trade.

Supply Chains and Trade

Complex and increasingly globalized supply chains are a leading area where blockchain technologies deliver measurable value, with a 2019 study conducted by Cointelegraph Consulting and blockchain firm Insolar[49] predicting that blockchain supply chain management projects could save Western European companies $450 billion in logistics costs through reducing the drag caused by siloed, asymmetric data and complicated custody transfers of value across counterparties.

In a major sign of industry adoption, Walmart Canada deployed blockchain solutions to manage the invoicing and payments challenges of working with its 70 third-party transportation carriers, who deliver 500,000 shipments annual to stores and distribution centers[50], removing the need to reconcile the errors and disputes that had previously been required in 70% of all transactions with transport vendors.

James Graham

CEO, GuildOne Inc.

Company Snapshot

Local Office:
333 5th Ave SW, #904, Calgary, AB

Applicable Sectors:
Oil & Gas, Forestry, Financial Services, Cryptocurrency Mining

Technologies:
Smart Contracts, Digital Assets, Fintech Solutions, Data Visualization, AI

Business Regions:
Canada, Southwestern USA, UK, Africa, India

Partners: Amazon Web Services, R3, Blockchain for Energy, Validere, Project Forest

Q: From your perspective, what is the current state of the blockchain industry in Alberta?

A: Alberta has a lot of blockchain innovation and we're proud to be based here. However, other parts of the world are accelerating much faster due to better regulation, more funding, and industry engagement, and our window in time to gain a competitive advantage is quickly closing.

Q: What are some of the key challenges that blockchain and cryptocurrency companies face when doing business in the province?

A: Blockchain adoption in our traditional industries is a major challenge – companies see value, but they're not incentivized to take risks on blockchain the same way they are for highly subsidized technologies like AI and cleantech. This applies to energy as well as our banking sector, where there is a big lag between our adoption curve and that of the US, Europe and Asia.

Q: Based on the experience of your company, how do you believe a stronger blockchain industry would benefit Alberta's important sectors like energy?

A: We've shown through our solutions that it enables industries like energy to significantly reduce G&A time and expenses, taking some months-long processes down to just hours, through shared databases and automated agreements, while providing new revenue generation opportunities via digital assets.

Q: Canada has recently issued ambitious new climate targets under the Canadian Net-Zero Emissions Accountability Act – can blockchain support Alberta's compliance?

A: Definitely – one of the strongest applications we see for blockchain is digital, traceable carbon accounting and trading, and this is an area where Alberta's world-leading regulations can help it excel. We have the opportunity here to leverage blockchain into a low-carbon economy that generates substantial revenue and investment.

Q: What kind of government policy moves or changes in support do you believe would have the biggest beneficial impacts on blockchain in Alberta?

A: Blockchain needs to be on the same footing as other technologies like AI and cleantech when it comes to government funding and support, and it's been highly challenging to access available public sector resources because of a gap in education about the technology. As an industry that is heavy on research and development, improved tax credit programs will also be essential to blockchain's success in Alberta.

GuildOne

About the Company

Established in 2001, GuildOne Inc. is a developer of pioneering data management and fintech solutions for key Alberta sectors like Oil & Gas, with clients including ConocoPhillips, ExxonMobil, Tidewater Midstream, Prairie Sky Royalties, Rife Resources, and others, and is working with exchanges like Canada's NEO Exchange and the UK's London Stock Exchange to develop innovative digital economy solutions. GuildOne recently launched ESG1, its sustainability division, to pivot its technologies to carbon credit and natural asset applications.

INDUSTRY **INTERVIEW**

Hubert Lau

CEO, TrustBIX

Company Snapshot

Founding:
evolved from 1999-2019 into TrustBIX

Headquarters:
10607 82 St NW 2nd Floor,
Edmonton, AB T6A 3N2

Ecosystem Partners:
Canadian Cattleman's Association, Canada Beef, Old's College and others

Scope of Business:
blockchain solutions for standards compliance, added value, trade, and ESG performance

Q: As a blockchain company, what are some of the biggest advantages of an Alberta location?

A: The prairie provinces have many benefits, including a supportive blockchain ecosystem and a down-to-earth, collaborative culture. We've found Edmonton in particular to be a great city for building relationships, and the business-friendly tax structure and government programs have helped our growth.

Alberta offers an excellent standard of living and proximity to the Rocky Mountains and natural beauty. Overall, it's a good base of operations with easy access to Texas and US markets.

Q: What are some of the challenges here that you would highlight to disruptive technology adoption by our major industries?

A: Oil & gas has been such a dominant sector here and they've led in technology adoption due to high profit margins and the availability of government programs – for other industries like agriculture, with lower profitability, more incentives and grants will be key to helping them de-risk their beneficial tech investments.

In contrast to cleantech, blockchain technologies have received almost no government subsidization and support, and this would go a long way to growing our industry and helping our big economic drivers like manufacturing and food production be more globally competitive.

Q: Where are the biggest potential benefits for blockchain in Alberta's economy?

A: Supporting more international trade is a huge benefit we can realize with blockchain. We're finding that trade partners, especially in Asia, are now demanding the trust that immutable certifications and provenance records provide, and some of our clients are seeing 300% higher profit margins from blockchain certifications.

Q: How do you think that Alberta can take steps to support these kinds of blockchain applications?

A: More government funding to help traditional industries adopt blockchain and help innovative companies grow is important, and for trade, support for collaboration with other markets around high-value export projects would really accelerate progress.

As we build out "Port Alberta" as a province, showing our innovation with blockchain leadership – and its synergies with other technologies like Machine Learning and IoT – will be a big competitive advantage. It's important to support our home-grown technologies that have a vested interest in the success of Western Canada.

TRUSTBIX

About the Company

TrustBIX (TBIX.V) is a publicly traded blockchain technology company that builds solutions for industries like food production and distribution and manufacturing that enable a new level of assurance for product compliance and quality. The company's platform combines diverse data points into trusted certifications, facilitating streamlined international trade and improved consumer safety.

Cryptocurrency Mining and Staking

Sector Highlights

- Predicted CAGR of 28.5% between 2021 and 2028 for mining solutions[51]
- 206% increase in mining operation revenue from 2020 to 2021[52]
- 10 largest miners raised US $3.9 billion in equity and $2.9 billion in debt in 2021[53]
- Top 14 public mining companies have a US $16.5 billion market cap[54]

Key Terms

Mining

In proof-of-work, using energy and computing power to compete to solve a challenging mathematical program to validate transactions and gain block rewards of digital currency in exchange

Hash Power

The total power used by crypto miners on the Bitcoin network to run the computer algorithms that attempt to solve problems in exchange for rewards

Staking

Delegating all or part of crypto holdings to the blockchain network to be used to vote on the acceptance of new transaction blocks in exchange for rewards

Overview

Cryptocurrency mining and staking are two important revenue-generating methods of maintaining the integrity of blockchain networks, and each represents a different type of economic opportunity for regions like Alberta.

For mining, where energy is used to verify transactions on networks like that of Bitcoin and Ethereum, physical infrastructure and grid power are key, whereas for staking, digital infrastructure and innovation are the primary drivers of value.

Both business types operate in synergy with the wider blockchain ecosystem, and different industry verticals cluster around the same supportive policies. As seen in the development of blockchain hubs like Texas, which is rapidly expanding its 14% share of the Bitcoin network's hash power, support for the mining industry has had a substantial flow-over effect on the rest of the state's technology economy.

With the 2021 ban on cryptocurrency mining by China, which previously hosted more than 70% of the world's mining operations, and growing uncertainty about other top locales like Kazakhstan and Russia, companies seeking to relocate to stable jurisdictions have increasingly looked to North America, with rapid expansion into Texas, New York, Quebec, and Georgia, with substantial interest in Alberta.

Mining Growth

New blockchain industry projects totalling more than US $3 billion were announced within months of Texas enacting key legislation in 2021 like HB 1576, which created a working group on blockchain, HB 4474, which recognized cryptocurrency as asset class, and an order from the Texas Department of Banking authorizing the state's banks to take custody of cryptocurrency.

Each of these policies – government collaboration and engagement, legal recognition of cryptocurrency, and access to conventional financial services – are essential to both the mining industry and other services and infrastructure providers like exchanges and payments.

Additionally, the energy-intensive nature of mining requires collaboration with energy providers and distributors, which can include the oil & gas sector, renewables projects, and in the case of on-grid or grid-supplying power, energy regulators and grid operators.

With the recent announcement that ExxonMobil is using flare gas to mine Bitcoin at a South Dakota facility, where ConocoPhillips has also announced mining partnerships, cryptocurrency mining is a strong ancillary revenue source for the energy sector[55].

The top requirements for cryptocurrency mining are a stable and low-cost energy supply in a legally secure region. With its cool and dry continental climate, Alberta has additional benefits to the mining sector, which has high data center cooling requirements, and equipment that can be damaged by excessive humidity.

Within cryptocurrency mining achieving more than $15 billion in revenue in 2021, policies that enable market and banking access and the scaling of mining operations could support the movement of Alberta majors into the space, bring new growth investment, and attract large-scale projects from top miners.

Renewables Development

In a landmark 2021 whitepaper published by payment giant Square in partnership with leading US $23 billion crypto investor Ark Invest, the company outlined a thesis for how Bitcoin mining, with its flexible power requirements and capacity for the generation of off-grid energy revenue, could become a key incentive for the development of renewable power sources like solar[56].

While Bitcoin's high energy consumption and environmental impact have been a barrier to development for some regions, a significant portion of the network's electricity already comes from inexpensive renewable energy sources like hydroelectric and solar. According to a study by CoinShares[57], this number is slightly more than 74%, whereas other studies place the renewables share at 56%[58] due to the shift from China's large hydroelectric power supply.

Even at below 60%, this still results in Bitcoin mining as one of the most renewables-powered industries in the world, and according to the model proposed in the Square whitepaper, an important technology for balancing the economic and grid challenges of intermittent power generation. This is demonstrated by the US 2.4 billion renewable energy facility being developed in Abilene, TX by computing firm Lancium[59], which will host Bitcoin mining in its data centres.

Staking Infrastructure

One of Canada's newest unicorns, Figment is a Toronto-based staking and blockchain infrastructure company that recently achieved a US $1.4 billion valuation in its December 2021 Series C funding round[60], showing the dramatic acceleration of a relatively new business model for the cryptocurrency industry.

Proof-of-Stake (PoS) blockchain networks include platforms like Eth 2.0, Solana, Tezos, Cardano, and Avalanche, with a predicted large move to staking by the entire Ethereum network, and represents a significant part of the overall cryptocurrency market at US $186 billion (April 2022)[61]. In contrast to cryptocurrency mining, transactions are validated on PoS networks through users being permitted to validate transactions by locking up all or a portion of their coin holdings, which helps ensure that the largest stakeholders have a vested interest in the network's integrity.

In exchange for this risk and loss of liquidity, stakers receive yield-style rewards for each transaction they validate that is successfully added to the network. Staking relies on cloud services and has a far lower energy requirement than Bitcoin mining, and the primary opportunities in this US $18 billion[62] in revenue industry are in digital infrastructure, services like staking pools, and new platform and asset development.

Perspectives

Sean McDonough
President, New West Data Corp.

Q: Where do you see the biggest opportunities for Alberta in cryptocurrency mining?

A: Cryptocurrency mining and the upstream oil and gas sector are a natural fit. Natural gas powered cryptocurrency mining can happen directly adjacent to hydrocarbon production and brings the natural gas "customer" to the producers doorstep. Furthermore, Alberta's geology is very favorable to sequestration of post-combustion carbon emissions.

Q: How has mining benefited other jurisdictions that have enacted friendly policies?

A: Because mining operations are typically located next to low-cost power, cryptocurrency mining has brought "tech" sector jobs to rural communities globally. New West Data's projects are located far from urban centers and we employ residents of Alberta's small towns to maintain our digital infrastructure.

Q: What are the key government policy changes that would help the mining sector accelerate?

A: A specialized TIER exemption for power generation companies operating digital infrastructure would incentivize further development of the mining sector.

INDUSTRY **INTERVIEW**

Alex Brammer, PhD

VP of Energy Monetization, Luxor Mining

Company Highlights

Founded:
2017

Headquarters:
Seattle, WA

Scope of Business:
Cryptocurrency mining, mining pool development, investment products

Q: As a cryptocurrency mining and services company, what strengths do you look for in a potential jurisdiction?

A: Clearly articulated regulations and policies are critical. Moves by countries like China to ban the industry have highlighted the need for companies to have confidence in the stability of the regions they operate in. Miners face a range of regulatory risks around the world and need to have an understandable and defined set of policies they can build towards.

Q: Texas has been a highly visible crypto mining success story – what did the state do right?

A: The Texas Blockchain Council, where I sit on the Mining Committee, has been the lead advocate for the policy changes that led to the state's mining boom. Within the first few months of establishing the Council, we had four major legislative successes, and the key was that Texas clearly defined where digital assets fell in the regulatory framework. Companies understood how they would be taxed, what laws were applicable, and were able to access traditional banking services.

Q: What are some of the considerations for energy policy and regulation for mining?

A: For operations that connect to the grid, energy regulators and grid operators need to engage with the industry and conduct feasibility studies to gain a full understanding of the load impact of bringing on these new power sources. Mining's flexibility makes it a great source of grid power for peak times, and it can also support renewable power development and grid connectivity through new revenue streams and by reducing some of the load challenges of its intermittent supply.

Q: Where do you think Alberta's key opportunities are in the mining sector?

A: With its political and natural resource advantages, we see Alberta as a valuable potential partner jurisdiction to Texas. The province has high energy density and an ideal climate, and by collaborating with the mining industry to gain a mutual understanding of the challenges and opportunities, it could become a major economic benefit to the province in tax revenue.

Beyond that, in Texas, areas like Rockdale, where Riot Blockchain purchased a US $650 million facility last year, there has been a community rejuvenation of jobs and infrastructure. The company has funded a medical facility, employs 400 people each day across a range of professions, and is actively working towards the city's success. Other miners, like Argo Blockchain, are building public pools and other infrastructure – our industry wants to engage with and give back to our communities.

The more Alberta can create pathways for partnerships, the stronger the outcome will be, especially for skills retraining, and miners can work with local governments to support courses in valuable professions like electrical engineering. The opportunities are beyond just tax revenue and new infrastructure, but also building intellectual capital in the community.

Luxor

About the Company

Luxor Mining is an innovative US-based cryptocurrency firm with diverse services focussed on optimizing energy value for proof-of-work mining. Providing leading solutions for cryptocurrency mining pools, blockchain infrastructure, project advisory, and traditional market investment products, Luxor is currently developing an Alberta expansion strategy. Highly active in the Texas Blockchain Council, the company places a strong value on ecosystem and community engagement.

John Bell

CEO, WCSB Blockchain Infrastructure Ltd.

Company Highlights

Founded:
2018

Headquarters:
900, 222 – 3rd Avenue SW Calgary, Alberta, T2P 0B4

Partnerships:
Tidewater Midstream and Infrastructure Ltd., GuildOne Inc.

Total Bitcoin mined: 600

Q: As a crypto mining jurisdiction, what are some of challenges of operating in Alberta?

A: We've found the government here to be politically supportive for our development of behind-the-fence power and crypto mining, but Alberta's electricity regulatory environment currently does not allow for the the optionality of power for crypto mining and distribution to the grid; as opposed to the environment in more successful mining jurisdictions like Texas. While we have significant interest from outside of the province, investors in the province also tend to be highly conservative, which holds back the growth of our local mining sector.

Q: ExxonMobil and other energy majors are now launching mining operations in the US– how can we encourage the same here?

A: Mining operations need to be at a significant scale to interest major oil & gas companies and having the flexibility through being able to provide power to the grid would help to de-risk the large-scale power infrastructure required for these data centres.

Greater acceptance of the industry by insurers and financial institutions would also support the development of projects by energy leaders – currently, these services are challenging to access by the cryptocurrency industry. We need a collaborative, ecosystem effort that brings together these parties to help them understand the industry and create a path forward.

Q: How do you feel about Alberta's potential as a hub for green crypto mining?

A: There's a huge market demand for sustainably mined Bitcoin and Alberta could become a leading provider. For WCSB, a significant part of our power would be green from steam recycling, and with government support, our industry could build a strong path to sustainability.

Similar to how the Alberta government has supported cleantech adoption in the energy industry with subsidises and grants, our digital infrastructure sector would benefit from programs that incentivize emissions reductions technologies, potentially including carbon tax holidays and abatements.

WCSB Blockchain Infrastructure Ltd.

About the Company:

WCSB Blockchain Infrastructure Ltd. works with a leading Alberta energy firm and majority investor (56%), Tidewater Midstream and Infrastructure Ltd. to create opportunities for cryptocurrency mining that leverage the province's low-cost natural gas resources and business advantages. In operation at a Tidewater facility near Edmonton since 2018, WCSB is planning a major expansion on 72MW of power that will involve large-scale data centre infrastructure and international partnerships.

Blockchain and ESG

Sector Highlights

- Expected 1-5% market premium for certified low-carbon natural gas[63]
- $100 billion (2030) voluntary carbon market growth and 90% current credit misrepresentation[64]
- 1000% surge in crypto charitable donations in 2021[65]
- US $136 million in crypto raised for Ukraine support by April 2022[66]

Key Terms

Digital Natural Asset

A blockchain token representing a defined quantity of environmental value, such as a planted tree

Programmable Carbon

Tokenized carbon emissions offsets that contain auditable data about the sequestered or removed volumes

DAO

A decentralized autonomous organization, or blockchain network with programmed governance rules and often used for social good

Overview

The world has never placed a greater value on Environmental, Social and Governance factors, with ambitious commitments being made by governments, multi-national corporations, and entire industries to dramatically lower carbon emissions and comply with the social mandates of the UN Sustainable Development Goals. However, these well-intentioned efforts are challenged by the difficulty of quantifying and verifying progress and financing the ESG-related projects that will move these commitments forward.

With the capacity of blockchain technology to create a permanent, traceable, and portable record of the history and composition of an asset, the technology has significant advantages for ESG applications including environmental certifications for fuel or retail products, auditable green investments, and trusted voluntary carbon offsets.

As a fundraising tool for charitable enterprises and sustainable projects, the technology's borderless nature facilitates low-cost, internationalized fundraising, and through innovative asset types like NFTs, is transforming how social causes and environmental projects generate attention and capital.

Environment

The outcomes of the COP26 UN Climate Change Conference in November of 2021, including the ratification of global voluntary carbon credit markets, led to a substantial increase in net-zero and emissions-reduction commitments across the public and private sectors.

With international consensus now achieved on Article 6 of the 2015 Paris Agreement[67], which mandates the global development of voluntary carbon markets, markets are growing for new asset types including carbon offset derivatives and the intergovernmental trading of Internationally Transferred Mitigation Outcomes (ITMOs).

According to UN Special Envoy on Climate Action and Finance, former Bank of Canada Governor Mark Carney, the strong demand for voluntary carbon credits to fulfill ESG commitments, primarily from forestry and other natural sequestration, may scale the market to US $100 billion by just 2030, a 100x increase from 2021's predicted total market cap[68].

In addition to supporting decarbonization by industries and governments, the voluntary carbon markets are also viewed as a key financing mechanism for the estimated US $100 trillion in sustainable infrastructure investment required to reach global net zero by 2040[69], which includes renewables development, supply chain restructuring, regionalized manufacturing, and other projects.

A serious obstacle to realizing these ambitions is the current state of the voluntary carbon credit market, which despite being one of 2021's best-performing asset classes, suffers from endemic misrepresentation and fraud. Studies, including one conducted by Finnish sustainability firm Compensate, found that 91% of credits certified by leading agencies like Verra and Gold Standard[70] failed to meet quality standards for a tonne of sequestered carbon.

The qualities that have enabled blockchain technologies to create an international universe of new assets based on intangible or difficult-to-represent value can support fully traceable, verified carbon credits that use data captured from IoT and AI measurement and analysis platforms to build scalable and trusted markets, which also encompass other forms of value, like digital natural assets that represent ecosystem benefits like planted trees, or tokens that fractionalize shares in sustainable projects.

Blockchain also enables immutable, transparent, and instantly traceable records for carbon accounting, especially across verticals and counterparties as required by Scope 3 value chain emission protocols and can streamlined emissions reporting to regulators.

For fuel, which is being driven by consumer demand towards certified emissions status, blockchain technologies can provide a comprehensive certification that incorporates device-captured data about product composition and carbon mitigations, which according to Canadian natural gas companies like Pacific Canbriam, will drive premiums in market that will benefit forward-thinking producers[71].

As a solution to both proving the environmental progress of Alberta's existing industries and generating financing for new sustainability projects, the province can move towards a greener future while capturing a strong market share of the decarbonized economy.

Perspectives

Janine Moir,
National Digital Assurance Leader, Deloitte

Q: What are some of the leading ways that blockchain technologies are helping improve ESG around the world?

A: Blockchain is being used as the immutable base layer to record, for example, carbon credits. We need to be able to trust information recorded and blockchain is a great way to secure it. Power Ledger is a great example of this: www.powerledger.io

Additionally, DAOs are a powerful way of using blockchain to raise non-profit funds and collaborate on innovative projects, and believe this is the future of social good. Personally, a big passion of mine is ensuring that all people can access housing, and with blockchain technology, shares of an affordable housing project could be fractionalized and invested in by supporters, and generate returns through things like hosting decentralized wireless services on the roof of the building.

Q: Where do you think blockchain or cryptocurrency can have the biggest impact on net zero progress?

A: Perhaps contrary to some misinformation, but I actually think Bitcoin is one of the greatest accelerators of green energy I've ever seen. Miners have moved from jurisdictions with a less clean grid to Alberta where wind and solar are abundant. A bitcoin produced here is far more likely to come from clean energy.

Q: How do you think it could benefit Alberta to support blockchain for social good projects?

A: There's a clear overlap for Alberta between blockchain and social good. We have been allocated a disproportionate share of Canada's climate change targets vs. amount of emissions produced. It will be nearly impossible to meet those requirements, in a trusted and verifiable way, without the use of blockchain technology.

The public will demand that industry and governments are transparent in their reporting on ESG reductions. We have a unique opportunity in Alberta to have all companies report production (of whatever energy source it is) to the regulator, using blockchain, to secure those results. The regulator could also be on chain which would allow for on demand reporting. We can set the standard for the world with this opportunity.

Social

Blockchain is transforming charitable fundraising. As of the beginning of April 2022, Ukraine has raised a stunning US $136 million in cryptocurrencies from international donors, primarily in Bitcoin, and in Canada, diverse charities including War Child, the BCSPCA and the Red Cross now accept cryptocurrency donations.

According to Fidelity, accepting donations in Bitcoin and other digital currencies has unique advantages, because the 45% of primarily Millennial crypto users donate US $1000 or more to charity a year in the US, compared to just 33% of the general population[72].

Recently, Edmonton's Glenrose Foundation made headlines with an announcement that it would begin accepting donations in cryptocurrency[73], and also work with Canadian blockchain company iMining to build a virtual hospital in the metaverse's Decentraland[74]. Supporting the development of blockchain initiatives by Alberta's more than 26,000 charities could help significantly increase funding and awareness, enabling them to undertake more beneficial projects and community initiatives.

For communities and causes seeking to undertake fundraising campaigns with a high profile and international scope of donors, a metaverse presence and NFT issuances of valuable digital items like donated art are becoming quickly adopted ways to finance projects and operations. These technologies can also create opportunities for artists from economically underrepresented groups and promote cultural recognition, such the launch by Medicine Hat's Soncho Austin[75] of a digital collectible series on important musicians.

Governance

The decentralized, programmable nature of blockchain has the power to overcome some of the leading challenges to financing social good initiatives, including corruption, high administrative costs, and transparency and consensus about the distribution and use of funds. DAOs, decentralized organizations that build consensus around these governance issues and automatically distribute funds in a manner agreed-up by its network, are starting to reshape the next generation of non-profits.

By encouraging all of the DAO's members to actively participate in decision making, and through opportunities to generate revenue for holders of the organization's currency, these types of blockchain organizations provide a mix of passion-driven engagement and financial incentives to unite around projects[76].

Blockchain's Economic Impact

Sector Highlights

- 41% believe that lack of education is holding back industry blockchain adoption
- Most respondents rated current government support for the industry as moderate
- The preferred top priority for government was clearer regulations
- 51% saw the biggest benefit to cryptocurrency mining as business growth and job creation

Overview

While the impact of disruptive technologies on a regional economy is challenging to estimate, the Canadian Blockchain Consortium has undertaken a landmark survey of its ecosystem members that highlights the strengths of our sector and potentials pathways to further growth.

Between March 25th and April 2nd, the Canadian Blockchain Consortium conducted an online survey of its ecosystem, publicized through its email distribution lists, discussion forums and social media. In total, 232 individuals responded to the survey, with 70.5% of respondents between the ages of 18-44.

The scope of questions included perceived challenges to the development of blockchain technology in Alberta, optimal use of growth funding for the industry, paths towards attracting new businesses, and potential benefits to the province for cryptocurrency mining.

Government Policy

Two questions focussed on perceptions of government policy, including the current levels of support received by the blockchain industry and the most effective target for policy changes moving forward. Almost 50% respondents chose a rating of 3, or moderate, for current support for the industry. Of options for the preferred policy change by the Alberta government, “clearer regulations and policies for digital assets and crypto” was the most agreed-with statement, followed by “none of the above”, then “more direct consultation with industry by government decision makers “. Survey respondents were given the opportunity to add additional comments at the end of the survey.

Limitations to Growth

The first question about challenges to the growth of the blockchain industry asked respondents to check all statements they agreed with, with the intent to capture a broad range of perceptions about Alberta’s limitations. “Lack of industry and public education and awareness” was the most popular response at more than 47%, with “too little engagement with the industry by government” and “challenges with accessing traditional financial services” each rated as close second priorities.

These attitudes were reflected in the next survey question, which was targeted to the largest “challenge to adoption of cryptocurrency and blockchain by traditional industries like banking, manufacturing, energy and agriculture”, to which 41% responded “lack of knowledge about the business value cases for these technologies”, followed by “misperceptions that cryptocurrency is associated with criminal activity” at just under 20%.

Cryptocurrency Mining

One question focussed on cryptocurrency mining, specifically Bitcoin, and asked respondents to check each of the statements that they agreed with on its potential economic benefits to Alberta. More than 50% agreed that Bitcoin mining would support new business development and job creation in the province, and both answers “a financial incentive for developing new renewable power like solar, geothermal and wind” and “a new revenue stream for underutilized resources like stranded gas in the oil & gas industry” received more than 40% agreement.

Paths to Success

One survey question asked respondents for the most effective use of any government funding obtained for the blockchain industry’s growth, and the two most popular answers, each at around a quarter of responses, were “project funding for businesses to explore adopting these technologies”, reflecting the theme of education and greater awareness about blockchain’s business value, and “programs to attract skilled blockchain and cryptocurrency talent”, an important driver of business development and relocations.

In terms of the overall impact of the technology, a question that asked: “what do you believe blockchain and cryptocurrency could mean for Alberta’s pivot to a technology economy?” received a cluster of agreement of between around 35-40% to the following benefits:

- A stronger global reputation as an emerging technology leader
- More deal flow and appeal to national and international investors
- Better performance and profitability in key industries like finance and energy
- Enhanced growth in other technology sectors like fintech, IoT and AI

Direct and Indirect Effects

Industry Optimization

According to a 2021 study published by Price-Waterhouse Coopers[77], the adoption of key blockchain solutions has the potential to add US $1.76 trillion to the global economy annually by 2030 by enhancing existing industry processes by reducing business friction and disputes, optimizing supply chains, providing low-cost financial services through the use of cryptocurrency, and innovative new financial instruments for investment and corporate liquidity.

If Alberta's gross domestic product experiences an increase to CAD $350 billion by 2030, this 1.4% estimate would add $4.9 billion dollars in optimization value to the province, a number that excludes the additional impacts of new infrastructure development, the synergistic effects of blockchain on other technologies and businesses, and the enhancement of renewable energy development and energy sector revenues through cryptocurrency mining.

Cryptocurrency Mining

By developing its mining sector in particular, Alberta has suitable energy resources to acquire a 20% or greater share of the global market by hash power, a percentage comparable that to New York State, which, if the province's energy is price-competitive, could add CAD $3.76 billion annually as taxable provincial revenues from mining operations, based on 2021 total global mining revenue. Each mining data centre, depending on scale, can employ 3-50 operational staff in both skilled and non-skilled professions including electrical engineering, security, and management, with significant increases during periods of construction.

Services and Digital Assets

With revenues by cryptocurrency exchanges rising 600%[78] in 2021 over 2020, significantly overtaking revenue from traditional stock markets to reach US $24.3 billion, supporting the development and relocation of exchanges has significant benefits. A single top-ten cryptocurrency exchange creates an average of $0.8 million[79] in daily revenue, and this growing market employs large numbers of staff in marketing, financial services, management, and technical support, with an average of 24 employees per exchange[80]. Additionally, as the metaverse and digital asset sectors continue their sharp growth trajectory, opportunities for economic development increase at all levels of the economy, from individuals to major brands – early leadership leading to even a small fraction of the metaverse's predicted growth to US $13 trillion by 2030[81] would have a major economic impact.

Estimated GDP Impact

The economic impacts of blockchain are complex. As digital infrastructure that could touch most of the province's existing sectors, while sparking the development of disruptive and completely novel applications, there are yet-unseen network effects that can span Alberta's blockchain pre-revenue start-ups and its established multi-national enterprises, creating innovation, new tax bases, and revenue opportunities both regionally and through technology exports and expansions.

Based on the beneficial impacts of blockchain acceleration in Texas and other leading hubs, and the profitability of key industry sectors, the Consortium estimates that Alberta's blockchain and cryptocurrency businesses and network effects have the potential to contribute between CAD $4-8 billion annually to Alberta's GDP by 2030.

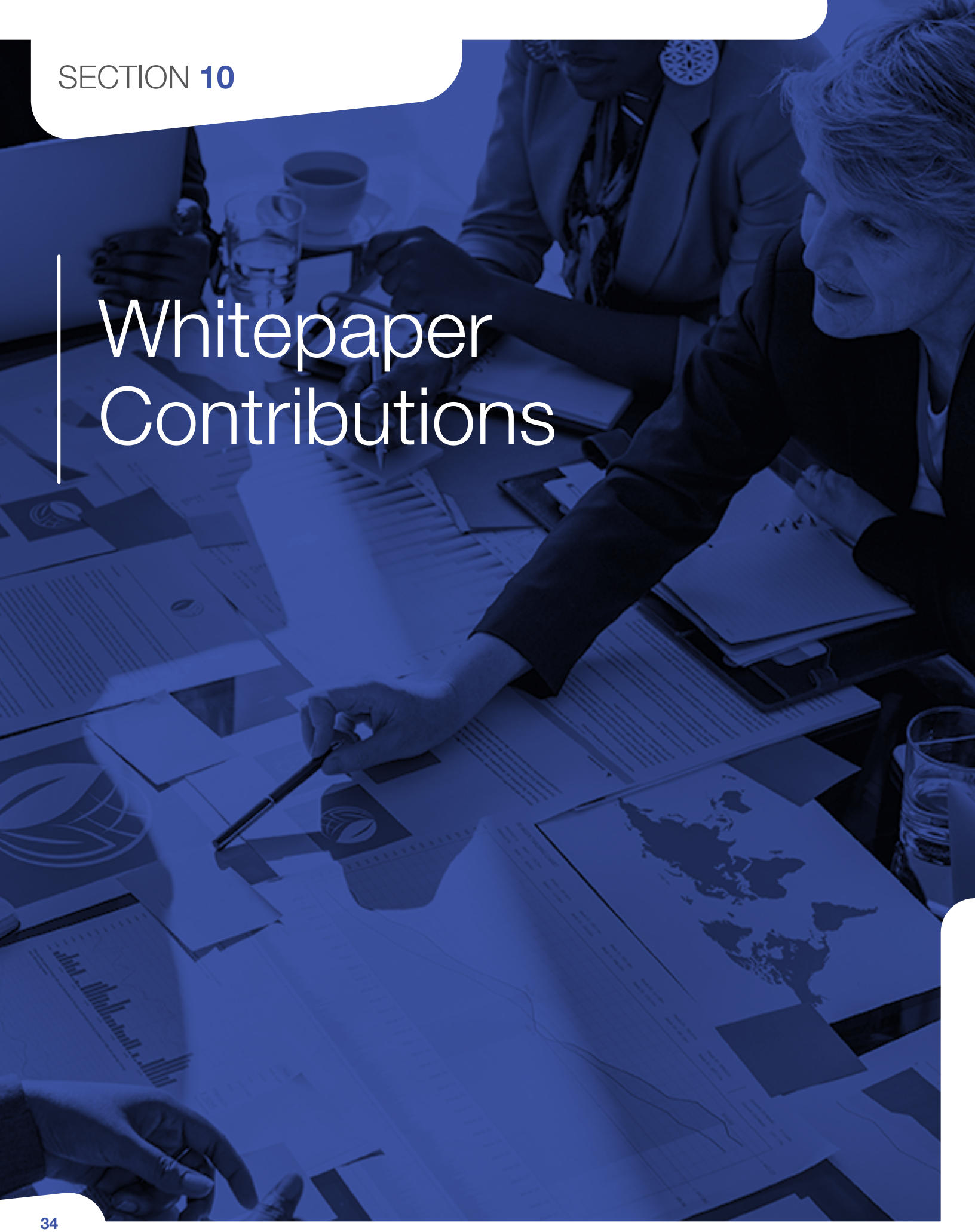
Employment

The Consortium estimates that blockchain's economic impact will create between 10,000 and 15,000 jobs, in a mix of temporary, part/full time, and self-employment. According to a 2018 report by the World Economic Forum, blockchain is predicted to be a key growth area for employment in the digital transition, with 45% of companies anticipating adopting blockchain solutions by 2022[82].

The diverse range of professions in-demand in the blockchain industry includes:

- Programming and coding
- Systems design and architecture
- Cloud services
- Cybersecurity
- Electrical engineers
- Graphics design and 3-D modelling
- Financial services specializations
- Content creators and artists
- Marketing, sales, and public relations
- Management and business development

Research by employment search platform Indeed found that between June 2020 and June 2021, postings for blockchain careers jumped by 118%[83], with a particularly strong push towards workers with Web3/metaverse capabilities, including, according to LinkedIn, network architecture, graphics specializations and marketing[84].



Whitepaper Contributions

Koleya Karringten

Ecosystem Leader

Bio

The Executive Director of the Canadian Blockchain Consortium, Koleya united the provincial blockchain ecosystem behind their support and funding for the whitepaper and built strong pathways for the publication's value with industry and government.

She is the CEO of the Alberta-based clean combustion firm Absolute Combustion Inc. and a board member of numerous organizations including Alberta Women Entrepreneurs, the Canadian Blockchain Association for Women, Catalyx, Elevate Aviation, and others. She is an ecosystem leader, speaker, author, philanthropist, and advocate for the transformational power of technologies like blockchain for industry, government and in underrepresented communities.

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Statement from the Executive Director

As the Executive Director of the Canadian Blockchain Consortium, I've been excited to see the progress of our province over the past five years as we've evolved from a small community with a handful of innovative blockchain entrepreneurs, to a strong ecosystem that features major firms and is now drawing the attention of the global technology industry.

Alberta has achieved incredible growth in its blockchain industry, and we're starting to get international investment interest for our talented companies and great business environment. Through public policies that support our expansion while protecting consumers, I believe we have the power to become a leading blockchain hub on par with Texas, Portugal, and Singapore.

Especially in the last year, as the Consortium has been undertaking global business development for our industry, I personally have received an incredible amount of interest from cryptocurrency mining, exchange and services companies in making a move to Alberta.

At a time when our province is experiencing a significant brain drain of technology companies to the US and other locations, the opportunity for our province to differentiate itself and lead in this space is a rare and valuable one. I'm proud to be based in Alberta for both my work in blockchain and my clean technology company Absolute Combustion, and it's critical that our Alberta success stories can stay here.

This report intends to show the scope of both the opportunities and challenges that face Alberta on its path to success in building a leading blockchain hub, and I'm confident that through the kind of support and engagement our ecosystem has been receiving, we can win in this competitive market on multiple fronts.

From sustainable cryptocurrency mining's benefits to our energy sector to our ability to build a digital economy based on decentralized finance, collaboration between the public and private sectors will help us achieve incredible growth that will benefit our economy for generations to come.

Alexis Pappas

Whitepaper Editor

Bio

The editor and chief author of the paper, Alexis supports the organization's political and industry advocacy and organizational thought leadership through her work as a Director with the Canadian Blockchain Consortium.

She is the Chief Innovation Officer of Canadian blockchain and digital asset solutions firm GuildOne Inc. and the Executive Director of the Canadian Blockchain Association for Women. With a diverse background across technology disciplines including green energy, cleantech, and blockchain and cryptocurrency, she is a frequent public speaker and writer on topics including the digital economy, innovation in climate finance, and equity and inclusion in the technology industry.

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Statement from the Editor

The world is changing at an unprecedented rate. Regions that understand the power of these transformations will be able to take a leadership role that will not only let them succeed in the next stage of our global economy, but will enable them to shape its direction.

In 2022, it's clear that the future is digital, decentralized, and will create trillions in new value. Through supporting blockchain innovation, Alberta has an opportunity to build the infrastructure for a prosperous and sustainable technology economy that will benefit our province across every business sector and scale.

As a Director of the Canadian Blockchain Consortium, and through my work as the Chief Innovation Officer of GuildOne, I see Alberta's potential to combine the strengths of its traditional sectors with emerging technologies that will automate, optimize, and create new value across the province, from oil & gas and banking to participation in the accelerating low-carbon economy.

Developing this report has highlighted just how compelling these opportunities are for Alberta. During discussions with international leaders in areas like cryptocurrency mining, blockchain business solutions and financial services, one of the consistent themes has been that our province is an incredibly desirable place to live and work.

Companies want to locate and build their businesses here, and talented and in-demand workers want to call Alberta home. As the world becomes more fluid and borderless, centers of power are moving away from traditional business hubs, and providing opportunities for new regions to thrive - and it's essential for us to be one of them.

Through industry and government collaboration on constructive policies that raise our profile and give innovators the security they need to make long-term commitments to Alberta, we can lead in the next stage of this technological shift, and successfully bridge our old and new economy into a prosperous future.

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Thank you to Our Community

The Canadian Blockchain Consortium would like to express our appreciation for the incredible support on our survey we received from our strong community of blockchain entrepreneurs, investors, developers, and companies who are all champions for the progress of our industry in Alberta and across Canada. These valuable insights helped shape this publication and we thank you for your important contributions.

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