SQE LITEPAPER

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SQE OVERVIEW

SECURITY FIRST

In a world where the cybersecurity industry is more fragmented, outdated, and vulnerable than ever, the SQE founders went back to the drawing board to **reconfigure internet security from the bottom up** – from hardware distribution to encryption to key management to identity verification and beyond – to create the most sustainable and secure internet platform. SQE will be one of the most impactful innovations in internet communications and database management.

SQE is **secure-by-design** and has created completely new data encryption protocols that satisfy the most cutting-edge requirements in cybersecurity. SQE **eliminates the need for public/private key exchange** and has created encryption protocols that are exponentially more secure than current internet security standards. It is known throughout the highest levels of government and the biggest tech companies that bad actors using quantum computers will be able to hack nearly everything on the internet. SQE has developed and patented innovative technologies to protect against both the **current and future** threats to cybersecurity. See SQE's technical white paper (**"Quantum-Level Internet Security Using Blockchain and Cellular Automata"**) for more information.

SUSTAINABILITY AND COST OPTIMIZATION

When it comes to electricity usage, SQE's network is engineered to be significantly more sustainable than other traditional and blockchain networks. Compared to more sustainable blockchains like Ethereum and Solana, SQE uses 16,000x and 74x less energy per transaction. Consequently, SQE introduces a game-changing cost structure of $0.00002 per transaction. In most industries, **SQE can cut transaction costs by 90%+.**

UNMATCHED SCALABILITY AND SPEED

SQE introduces a model with linear scalability that is designed to handle over **1 million transactions per second,** while maintaining one transaction per block. Simply put, SQE is built to scale and handle trillions of transactions a year at a fraction of the cost of current providers and with the ultimate in scalability. SQE's business model has the potential to generate annual revenues surpassing hundreds of billions of dollars.

SQE MARKETS

SQE was designed for the current tech environment where **scalability** and **repeatability** are essential for success. SQE standardizes data treatment, enabling its application across diverse industries, given that approximately 80% of the network functionality remains consistent irrespective of the sector. Initially, SQE plans to attack the following industries:

- **Identity Verification** – SQE solves a long-standing math problem to streamline and secure digital identity.
- **Messaging** – SQE architecture achieves user confidentiality **and** satisfies national security requirements.
- **Payments** – Digital assets *(financial & non-financial)* are **encrypted with the owner's information.**
- **Production Monitoring –** SQE smart contracts bring **new possibilities** to manufacturing & supply chain.
- Additional applicable industries include, but are not limited to, digital signatures, digital asset management, online gaming, ride sharing, data protection solutions, ticketing and beyond.

SQE LEADERSHIP TEAM

Hamid Pishdadian (FOUNDER/CEO/CHIEF ARCHITECT) is an award-winning design engineer, inventor and technology executive who holds more than 20 U.S. and international patents for his innovative work. His fields of expertise include computer science, electrical engineering, robotics, artificial intelligence with direct experience in neural networks, genetics algorithms, fuzzy logic, and soft computing. Hamid is familiar with more than 20 high-level and low-level programming languages and has written millions of lines of code in his 35 years of experience as a design engineer. From 1993 to 2000, he worked at Taco Inc., where he designed a genetic algorithm system to automate the design of split capacitor motors. This effort led to the creation of Taco 0013; the most efficient circulator ever designed. In 1997, Hamid won first prize in Microchip Corp international mechatronics competition. In 2006, Hamid invented a 3D camera system that uses genetically optimized neural transformation matrices instead of laser- scanning. His patent for this invention has been referenced by many Fortune 100 Companies. From 2010 to 2019, Hamid served as the Chief Technology Officer of MHT Lighting in New York, during which he earned several patents in the field of high-energy power switching and energy reduction systems. He has been the president of General Sensors, Inc. since 2008 and the Chief Technology Officer of Growgenics since 2019. Hamid is a graduate of the University of Rhode Island, where he received a Bachelor of Science in mechanical engineering. He lives in Warwick, Rhode Island.

Mike Goodwin (COO/CFO) is an accomplished finance professional with experience in various industries, including working in the Emerging Technologies Division at EMC and Global Finance Analysis team at Boston Consulting Group specializing in detailed financial analysis, developing financial plans, and driving competitor intelligence analysis. Recently as General Manager of Cultivation and Processing at Sanctuary Medicinals, Michael grew and led a team of 100+ across cultivation and production developing effective team structures, standard operating procedures, and streamlining production strategies. Michael holds a Bachelor of Business Administration with a major in Finance and a minor in Information Technology from the Isenberg School of Management at the University of Massachusetts Amherst.

Joe Anter (CSO) has over 30 years of leadership experience in emerging technology sales. Notably, he led Proofpoint's sales team during its IPO, orchestrating strategies that propelled the company forward. This effort culminated in Thomas Bravo's landmark $12.3 billion software acquisition in 2021, solidifying Proofpoint's position in the market. Prior to this, he directed a dynamic sales team of over 20 members at Granite Telecom, overseeing operations catering to Fortune 1000 sectors. His leadership played a pivotal role in optimizing sales strategies and fostering strong client relationships, contributing to the company's growth and success in the competitive telecommunications landscape. At Growgenics, Joe's transformative leadership as VP of Business Development at Growgenics saw him spearheading the creation of a sales pipeline from scratch, propelling the company from zero revenue to generating multi-million-dollar revenues annually.

AK Khalis (CO-FOUNDER) As an entrepreneurial executive, AK's background in technology, product, and general management allows him to bridge the gap between engineers and businesses to bring high quality solutions to market efficiently. With his diverse knowledge in the development of hardware, firmware, and software. In addition to his vast industry experience, AK holds a Bachelor of Science in Electrical Engineering from the NJ Institute of Technology and currently holds 5 US technology patents. AK has accelerated the growth of innovative technology for more than a decade.

Rick Genga (CO-FOUNDER) is a highly accomplished entrepreneur and innovator with over 35 years of experience in advanced product development, engineering, software, and business development. His expertise spans innovative areas such as product development, manufacturing systems, business development, electronics, software, and lean design for manufacture. This diverse background has enabled him to lead groundbreaking projects and deliver exceptional value across multiple business sectors in such fields as medical, consumer, industrial, dental, controlled environmental agriculture, and military. Genga has acquired 17 patents.

SQE has over **20+ contributing team members globally**. SQE's Advisory board has **decades of experience across legal, risk management, blockchain, public relations, banking, cybersecurity, mathematics, marketing, and business strategy.**

TRUST IN SQID FOR IDENTITY VERIFICATION

SQE's secure-by-design, **identity-centric** platform stands to offer substantial benefits and competitive advantages to the **Identity Verification** and **Identity Access Management (IAM)** markets *(~$24B TAM by 2028*). SQE unique encryption and blockchain technology allows for features and capabilities that seem impossible when evaluating from the scope of the current solutions and technologies on the market.

The SQE platform solves multiple significant issues holding back the most cutting-edge trends in digital identity from becoming mainstream. **Verifiable credentials, decentralized identity, IoT Authentication, Machine Identity Management**, among other innovations, are expected to have a transformational impact on the digital identity space and hit mainstream adoption within the next 1-5 years. SQE has the ability to cut costs by upward of 90% in crucial functions.

At the core of SQE is the unique identifier for all entities on our platform called **SQid**, which is a 1024-bit unique integer. SQid can only be used on authorized devices verified by the user (e.g. mobile phones, laptops etc.) SQE will implement numerous techniques to ensure secure access to these devices that include best in class multi-factor authentication techniques, behavioral profiling, and deep fake mitigation technologies. SQE has various levels of registration and flexible solutions depending on the industry and use case.

SQE follows the **principle of least privilege** for all users and entities. Only SQids authorized to interact with each-other can communicate and SQids cannot be replicated. The entanglement key created based on SQid essentially acts as an digital identity token with quantum-level security. One of the many features of SQid is that it carries its own key, which has no mathematical relationship to the lock that encrypts the associated data, a solution to a mathematical and computer science problem that has existed for over a century. The relationship between two entities on SQE is used to create an entanglement key whereby the sender can encrypt the document, and it can only be decrypted by the receiver. Rigorous actions are taken to guarantee that the user has only one account associated with it.

SQE smart contracts significantly enhance backend operations in the identity verification market by automating user access management, ensuring that only verified identities access sensitive data. They ensure consistent and secure management of identity data across platforms, streamlining the entire identity lifecycle from registration to decommissioning. The creation process involves text editors and API functions, with each component requiring certification for authenticity, all recorded on the SQE blockchain. The execution of these smart contracts is contingent upon obtaining and registering all necessary certifications and approvals. SQE's smart contracts can be tailored to accommodate evolving requirements for identity federation, enabling updates to be made in response to changing regulatory landscapes or technological advancements.

SQid, with the scalability of SQE, has the potential to provide the infrastructure to unite digital identities across blockchains, banking systems, government issued identities, tokenized assets, IoT devices and beyond.

For more information, see SQE's **IDENTITY VERIFICATION MVP** and **DIGITAL ID TECH TRENDS & GUIDELINES** documents.

QUECREDIT ELEVATING SECURE PAYMENTS

SQE's platform, in tandem with its medium of exchange called **QueCredit,** offers an unprecedented level of security to the **Payments** industry *(~$1T TAM by 2028)*. This enhanced security is a key value proposition for financial institutions, payment processors, businesses and consumers that prioritize the protection of transaction data.

By eliminating the traditional delays associated with conventional encryption and key exchange methods, SQE can facilitate instant settlements. This improves the efficiency of financial operations and enhances user experience in retail and commercial transactions. SQE's technology enables rapid transaction processing, which is essential for **real-time payments** and high-frequency transaction environments. Additionally, SQE's platform drastically reduces operational costs associated with transaction processing. By offering high-speed, secure transactions at a lower cost-per-transaction, SQE makes it economically viable for businesses of all sizes to process payments, potentially increasing financial inclusivity.

The pivot toward **profitability and sustainable models,** a marked departure from relentless user acquisition, underscores a maturation within the FinTech industry. Furthermore, SQE's ability to integrate seamlessly with existing banking and payment systems ensures that it can be adopted without disrupting current financial infrastructures. This ease of integration — coupled with its user-friendly interfaces — makes SQE an attractive option for an array of users, from large financial institutions to **super-apps** to individual customers. SQE's blockchain technology is also a perfect architecture to facilitate **wholesale payments**, similar to the function of the J.P. Morgan Coin. Businesses are transitioning from fragmented solutions to adopting a unified approach like SQE's in order to streamline compliance and regulatory requirements.

QueCredit (QUEC) is the native currency of the SQE platform. It is created by generating a unique identification creation process that ensures its individuality. When a user requests a QueCredit, the owner's information and certificate authenticity are minted into a unique 1024-bit ID that is as **unique as a fingerprint**. QueCredit, being a **self-protected digital asset** encrypted with its owner's credentials, ensures secure transactions on the platform. QueCredit is utilized to pay for all services provided by the SQE platform. SQE's platform is unique in that you can redeem and use your QueCredit for any SQE service before you pay a single penny. Users don't pay for QueCredits until after they are used for an SQE-supported service, SQE is not in the business of selling QueCredit for profit, but rather for the purpose of **reducing operational costs.**

SQE's blockchain platform can facilitate the use of one-of-a-kind smart contracts in various aspects of **B2B payments**. Each component of the smart contract is encrypted with the user's SQid, ensuring secure and tamper-proof agreements. This is particularly important if B2B payments involve deferred payments, as they can carry higher risks of fraud or default. Smart contracts could automatically enforce the terms of a B2B payment agreement, such as payment schedules, interest rates and penalties. This ensures compliance and reduces administrative overhead. The SQE platform enables enhanced lending capabilities for FinTech companies. Finally, the execution of these smart contracts depends on obtaining and registering all necessary certifications and approvals, designed to accommodate the evolving requirements of **banking regulation and compliance.**

For more information, see SQE's **PAYMENTS MVP** and **PAYMENTS TECH TRENDS & GUIDELINES** documents.

SQE MESSAGING: BALANCING PRIVACY AND NATIONAL SECURITY

SQE's platform, which leverages our cutting-edge simulated quantum entanglement and blockchain technology, offers an unprecedented level of security to **Secure Messaging** *(~$21B TAM by 2028).* SQE's technology is poised to redefine secure messaging, standing at the forefront of **end-to-end encryption** and **quantum-level security**. Real-time messaging can be securely facilitated on the blockchain, providing users with the option based on their preferences. This innovative platform ensures the highest standards of privacy and data protection, making it an ideal solution for those seeking confidentiality in their digital communications.

SQE's unique approach to transactions, where each is encapsulated within its own block, enables unparalleled flexibility and transparency in access considerations for messages. This architecture allows for varied levels of confidentiality, from complete privacy between individuals, to group or company-wide access, or to the public depending on the application. By default, **not even SQE itself would have access to this information**. Despite this flexibility, SQE is committed to compliance with local laws and regulations, incorporating transparent smart contracts designed to grant authorities access to communications when legally required. For instance, in certain jurisdictions, the law might mandate that communications can only be revealed following a ruling by three judges in legal matters and court cases. This method ensures that while SQE offers robust privacy and security features, it also upholds the legal and ethical standards necessary for operating within different legal frameworks worldwide. SQE's approach ingeniously addresses both sides of the issue when it comes to user privacy and national security concerns.

SQE's technology is inherently user-centric, making it perfectly suited for personalized messaging services and **identity-based messaging**. This focus on the user experience means that SQE's platform can offer highly customized communication options, catering to the specific needs and preferences of each user. Additionally, SQE is set to integrate best-in-class features within its messaging services. These enhancements include read receipts and typing indicators, along with the ability for users to react to messages. Moreover, the platform will support location services and sharing, ensuring users can easily share their whereabouts. It will also boast advanced search functionality, allowing for efficient retrieval of messages and content. These features and more are part of SQE's commitment to delivering a comprehensive and user-friendly experience.

SQE's smart contract technology introduces an exceptionally unique value proposition to the messaging app landscape by embedding predefined, fully vetted **smart contracts** directly into the messaging platform. This innovative feature transforms the way people interact digitally, enabling users to execute a wide array of tasks seamlessly within their conversations. By integrating smart contracts, SQE allows for **instant payments,** the creation of voting polls, scheduling appointments, making deals, and facilitating various other contract or condition-driven capabilities, all within the messaging interface, streamlining processes that traditionally require multiple platforms or services. SQE's approach effectively turns messaging into a multi-functional platform, where communication goes hand in hand with actionable, blockchain-powered features. This capability not only enhances the utility and efficiency of messaging but also opens up new avenues for digital interactions, making SQE's messaging app a pioneering solution in the Web3 space. SQE is committed to democratizing secure communication, making it accessible to everyone, everywhere, without compromising on quality or security.

For more information, see SQE's **MESSAGING MVP** and **MESSAGING TECH TRENDS & GUIDELINES** documents.

SQE NO-CODE SMART CONTRACTS ENHANCING INDUSTRY 4.0

SQE technology and its leadership brings significant competitive advantages to the **Production Monitoring Industry** *(~$9B TAM by 2028)*. Industry 4.0, known as the fourth industrial revolution, represents the ongoing transformation of the manufacturing and production sector through the integration of advanced technologies and digitization. It is characterized by the convergence of physical systems and digital technologies, enabling smart factories and the seamless exchange of information between machines, systems, and humans. These technologies work together to optimize efficiency, productivity, and flexibility in manufacturing processes, ultimately leading to improved quality, reduced costs, and enhanced customization. Industry 4.0 empowers organizations to leverage real-time data, predictive analytics, and automation to drive innovation, create new business models, and unlock unprecedented levels of productivity.

SQE's Smart Contract technology introduces an exceptionally unique value proposition to the production monitoring space by embedding predefined, fully vetted smart contracts directly into the SQE Platform. By utilizing smart contracts for **mission-critical processes and events**, companies can automate and streamline complex manufacturing processes, ensuring that operations are conducted efficiently, transparently, and with minimal human error. SQE's smart contracts can be crafted from fundamental logic using straightforward 'if-then' statements. Simply put, if an event happens, then an action is triggered. With everything controlled and monitored automatically, smart contracts within the SQE ecosystem facilitate a highly secure, efficient, and less error-prone production environment, driving forward the principles of industry. Essentially every step of a program becomes a block on SQE's blockchain, so every step can be traced back if necessary.

SQE's initiative to explore deeper into secure IoT device communications to enhance digital twin technology represents a significant leap forward in the realm of Industry 4.0. By integrating SQE's secure identification system (SQid) directly into **IoT devices and sensor interfaces**, SQE is ready to establish a new standard for secure, real-time data transmission that fuels the efficiency and intelligence of digital twin technologies. Additionally, SQE has proprietary sensor technologies that can bring significant value to agriculture environments and beyond. Furthermore, these environments can also implement **SQE's Event Generator** to streamline and centralize communications revolving around these mission critical items. Primarily, these devices secure data arising from mission critical IoT devices or sensors by encrypting this information using SQE's advanced technology. These technologies allow production managers to access a comprehensive dataset, enabling data-driven decision-making on a large scale. These integrations within the logistics industry are especially significant for OEM manufacturers and automakers who depend on digital twins to track, manage, and optimize their equipment and systems in real-time, effectively bridging the gap between the physical and digital worlds. Furthermore, the system's design also permits the creation of an independent monitoring mechanism that alerts managers to any communication interruptions or unexpected shutdowns in machinery, enhancing operational reliability and preventing potential issues.

Overall, SQE's technology can significantly enhance security, streamline operations, and verify authentication of communications coming from mission critical IoT devices and sensors. The integration of smart contracts into the system unlocks new possibilities for smart manufacturing and Industry 4.0 initiatives.

For more information, see SQE's **PRODUCTION MONITORING MVP** document.

SQE TOKENOMICS CHANGES THE GAME

QueCredit (QUEC) is the native currency of the SQE platform. When a user requests a QueCredit, the owner's information and certificate authenticity are minted into a unique 1024-bit ID that is as **unique as a fingerprint**. QueCredit, being a **self-protected digital asset** encrypted with its owner's credentials, ensures secure transactions on the platform. QueCredit is utilized to pay for all services provided by the SQE platform. Users don't pay for QueCredits until after they are used for an SQE-supported service, SQE is not in the business of selling QueCredit for profit, but rather for the purpose of **reducing operational costs.**

The cost-effective creation of QueCredits, combined with robust anti-theft security measures, opens up a wide array of innovative and exciting distribution possibilities within SQE's token economic model. A variety of allocation methodologies can be explored to **inject new supplies of QueCredits** into the SQE ecosystem. These methods include, but are not limited to, miner payments, user registration incentives, referral incentives, discounted services, discounted QueCredit sales, Recognition or General Sale offerings, bulk lending protocols, and SQE equity investors' QueCredits to be released into the SQE Ecosystem. QueCredit can be programmed in many ways to customize usage such as service-only, company specific (e.g. custom digital gift cards), and beyond.

As demand for various enterprise and retail services grows and fluctuates on the SQE platform, SQE will **regularly distribute** a limited amount of General Purpose QueCredit to all types of SQE wallet holders based on supply and demand factors. Beyond this, should users find themselves with surplus QueCredits, they have the option to sell these on the **SQE Exchange** to users who find themselves with a demand for more, thereby contributing to a dynamic and responsive market ecosystem. This process facilitates a seamless transaction where, once QueCredits are purchased by another SQE user in need of additional services, the difference from the sale is directly transferred to the original seller. Meanwhile, the equivalent $1 value of each QueCredit transferred is allocated to **SQE's Proof of Reserves** account. This account, noted for its transparency, backs all QueCredits in circulation, ensuring the stability and reliability of the token's value is pegged to $1.0.

SQE plans to allow market dynamics to determine the premium on QueCredit being sold on the SQE Exchange, expecting QueCredit to be **exchanged at a 10-20% premium on average.** Following the attainment of the initial critical network scale and service demand, a general rule of thumb can be that for every ~$100M earned by SQE (Revenue), ~$90M+ can be allocated for burning if SQE chooses (conversion to fiat), while ~$1-$10M can be distributed as compensation to the validators of the network as QueCredit. Therefore, in a simplified ecosystem where only SQE is converting profits into FIAT currency, 90%-99% of the QueCredit supply would constantly need to be injected back into the SQE Ecosystem as newly minted. **All in all, this means recipients of newly supplied QueCredit have the opportunity to make a 10-20% margin on $90M QueCredit for every $100M revenue earned by SQE.** The appreciation potential of QueCredit presents a compelling opportunity for economies in developing nations and emerging markets. The anticipated appreciation of QueCredit not only offers a viable alternative to unstable local currencies but also provides a platform for these economies to engage more effectively in the global digital market.

For more information, see SQE's **TOKEN ECONOMICS** document.

SQE NETWORK REDEFINES DECENTRALIZATION AND SCALABILITY

SQE's commercialization plan includes distributing its hardware nodes **at no-cost** (free of charge) to trusted entities giving them the opportunity to **generate income via hands-free mining**. No expertise is needed to host this hardware, just plug it in. The hardware nodes cost less than around $2 per year of electrical consumption. In other words, these nodes consume ~1 watt of power compared to an average LED light bulb consuming ~10 watts. The devices are ~1lb and 2.5 inches by 3.5 inches by 1 inch. Trusted entities will be compensated monthly ($40-$200+) for hosting these devices, which run the SQE universe. These devices and SQE network were designed for anyone across the globe with an internet connection to be able participate and benefit from SQE's network. It is important to note, users **DO NOT** need these devices to use SQE services.

SQE's Pilot Deployment is set to redefine the landscape of **quantum-secure networks,** embarking on a comprehensive rollout that will encompass a global network of highly trusted entities. With plans to deploy 316 links and 1,580 nodes, SQE aims to achieve a remarkable capacity of 1,580 transactions per second. This pilot will be strategically implemented across a carefully selected network of entities with security measures already in place including banks, data centers, hospitals, military bases, government buildings, schools, office buildings, critical infrastructure providers, residential locations, and secure manufacturing facilities.

As SQE's scale nears the 1.0% threshold, it's designed to manage approximately 10,000 transactions per second. This rate closely aligns with the throughput of all other blockchain systems currently combined and represents nearly the entirety of global credit and debit card transactions. From a redundancy standpoint, at 1.0% scale, the network would tolerate up to 95%+ of its hardware going down without compromising the integrity and functionality of the SQE database validations. **Every node active in the SQE network equates to one transaction per second capability.** SQE is designed to scale linearly and reduce cost per transaction as the network grows, solving current blockchain scaling issues, and is designed to **handle 1M+ transactions/second.**

As part of the hardware manufacturing process, SQE partners with a **reputable U.S. defense contractor** for sub-assembly. This strategic collaboration ensures that our products meet the highest standards of quality and security. These devices have multiple layers of protection. They protect themselves against all known methods of hardware hacks via built-in self-destruction mechanisms with temperature, light, vibration, infrared, sound, power, and x-ray radiation sensors. All sensitive areas of the device are glass shielded and wax coated with tamper-evident seals. Finally, the reinforced housing is secured in place using one-way screws.

Mounting a global coordinated attack on SQE's network and hardware devices spread across diverse secure locations, including banks, government buildings, and private residences, presents a monumental challenge fraught with logistical hurdles and **inherent impracticality.** On top of SQE's hardware having self-protection measures individually, coordinating such an attack would necessitate extensive resources with diminishing returns for the hackers. It would also require precise timing, and meticulous planning, factors that exponentially increase the risk of detection. The essence of hacking revolves around maintaining anonymity and operating remotely, rendering the orchestration of a large-scale physical attack counterproductive to cybercriminal objectives. Thus, the notion of successfully executing such a synchronized assault on a global scale remains exceedingly implausible and logistically unfeasible.

For more information, see SQE's **COMMERCIALIZATION** document.