Decentralized Manufacturing

Creating the world's first peer-to-peer blockchain for the manufacturing supply chain

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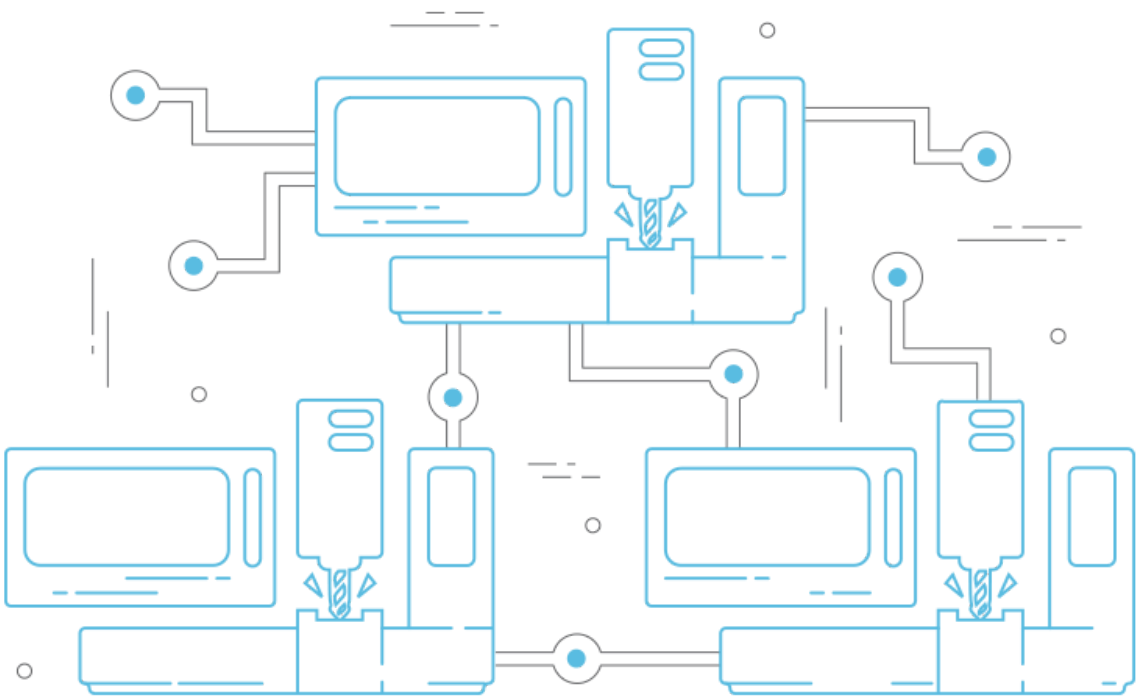

"The best way to predict the future is to create it."

- Peter Drucker, Next Generation Manufacturing

Table of Contents

Regulatory Strategy

The team behind the MFG is currently working with legal counsel to ensure that the MFG Token Distribution Event is fully compliant with all applicable federal and state securities laws.

Abstract

This document contains forward-looking statements, subject to risks and uncertainties that could cause actual results to differ materially.

The SyncFab distributed Smart Manufacturing Blockchain will be a decentralized blockchain powered by the MFG Utility Token.

This document provides a comprehensive overview of the SyncFab decentralized application, the MFG Utility Token, the developers involved in the Smart Manufacturing Blockchain project, the MFG Utility Token Distribution Event (sometimes called “ICO” or “crowdsale”), and the Smart MFG Tech LTD (Foundation).

The supply chain management and procurement process within the industrial manufacturing industry is outdated, non-transparent, and inefficient, resulting in higher expenditures and lower revenue.

Smart contracts and blockchains will revolutionize the industry. With the SyncFab MFG Token and Smart Manufacturing Blockchain, we will decentralize the economies of scale, making it more accessible, transparent and economically sound for more participants in a direct peer-to-peer (P2P) ecosystem.

1.0 Introduction

The rise of industrial manufacturing is arguably the catalyst that would catapult countries into world superpowers—two such examples are the United States and China. These two countries alone account for over a third of the world's gross domestic product (GDP), which is the market value of all goods and services attributed to the country for a given year. Their dominance is expected to continue well past the year 2050.[1] The spark that ignited the industrial manufacturing boom is the industrial revolution—a transition to new manufacturing processes.[2] In the last two decades, companies have struggled to maximize profit and lower revenue due to the inefficiency of manufacturing processes and technological innovations, which are often seen as outdated, complicated and not secure.

1.1 The Industrial Internet of Things and the Industrial Revolution 4.0

"The Internet of Things has already set in motion the idea of a fourth industrial revolution—a new wave of technological changes that will decentralize production control and trigger a paradigm shift in manufacturing."[3]

In the last decade, there have been significant advances in areas such as robotics, sensors, big data, artificial intelligence, augmented reality, and reliable and robust networks connecting the digital and physical realms of manufacturing. Enterprises are beginning to see the value of using these

[1] "The World in 2050: PwC." https://www.pwc.com/gx/en/issues/economy/the-world-in-2050.html. Accessed 3 Sep. 2017.
[2] "Industrial Revolution - Wikipedia." https://en.wikipedia.org/wiki/Industrial_Revolution. Accessed 3 Sep. 2017.
[3] "The Internet of Things and the future of manufacturing | McKinsey ...." http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-internet-of-things-and-the-future-of-manufacturing. Accessed 3 Sep. 2017.

technologies as a strategic advantage to significantly save time and improve connectivity, efficiency, scalability, security, and cost savings.[4]

The Internet of Things (IoT) is the inter-communications and networking of these technologies that enable them to collect and interchange data.[5] Today, consumer electronic accessories such as drones, Nest home systems, and Apple HomeKit continue to push the boundaries of consumer and business norms. The high demand has resulted in and will continue to push for advances in the industrial manufacturing industry through the Industrial Internet of Things (IIoT), which is the application of IoT in the industrial manufacturing industry. The key difference is IoT is the exchange of data, while IIoT is the transaction of both data and contracts between businesses to businesses (B2B).

The high costs caused due to inefficiency combined with IIoT have created a hunger for change and opened the door to the fourth industrial revolution: a change in manufacturing processes through high-tech smart factories and machines. Companies today have already or will invest resources into implementing alternative methods to increase revenue. Of companies surveyed in the Forbes Manufacturer Outlook of 2016, 32% are aligning their corporate strategy in hopes of raising revenue through implementation of this technology. Thirty-two percent (32%) are finding ways to optimize their "cost-to-serve" process (lowering overhead costs per customer account) with investments into integrated business planning, supply chain analytics, and design networks to better optimize their business process.[6]

As the chart below illustrates, of those looking for changes, many companies have invested or have definite plans to implement IIoT technologies such as supply chain analytics, global demand management, and procurement systems.

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[4] "Industry 4.0 and manufacturing ecosystems: Exploring the world of." 22 Feb. 2016, https://dupress.deloitte.com/dup-us-en/focus/industry-4-0/manufacturing-ecosystems-exploring-world-connected-enterprises.html. Accessed 3 Sep. 2017.
[5] "Internet of things - Wikipedia." https://en.wikipedia.org/wiki/Internet_of_things. Accessed 3 Sep. 2017.
[6] "Global Manufacturing Outlook - KPMG." https://home.kpmg.com/content/dam/kpmg/pdf/2016/05/global-manufacturing-outlook-competing-for-growth.pdf. Accessed 3 Sep. 2017.

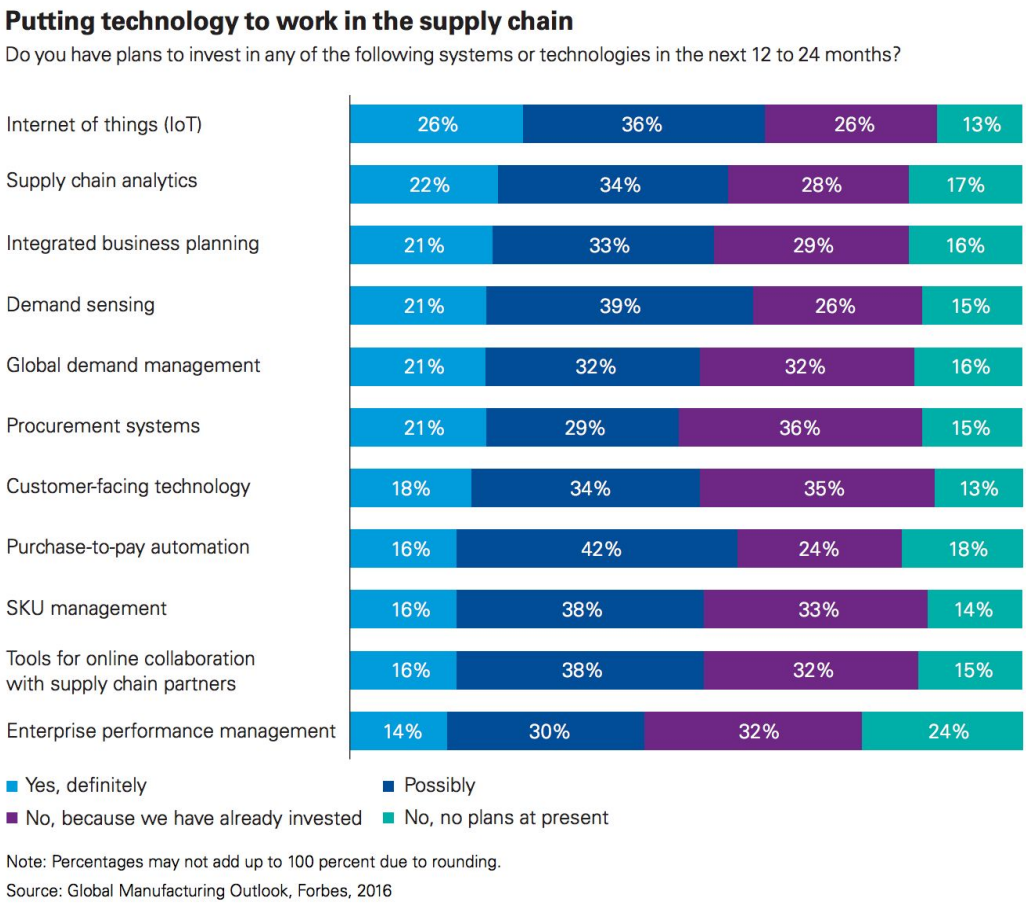

Figure 1: Putting Technology to work in the supply chain.[7]

The shift in business strategy within the revolution is driven by companies and manufacturers alike to streamline an efficient procurement and production process to reduce overhead costs and increase revenue.

1.2 Industry Challenges

The current process being used in the manufacturing industry to produce parts is flawed and demotes efficiency because it is obsolete. These flaws all contribute to the overall slowness and costliness of the process. Below, we address some of its problems that we intend to fix through our new platform.

[7] "Global Manufacturing Outlook - KPMG." https://home.kpmg.com/content/dam/kpmg/pdf/2016/05/global-manufacturing-outlook-competing-for-growth.pdf. Accessed 3 Sep. 2017.

1.2.1 High Costs

To source parts, companies hire an internal procurement manager to search for and order parts. Those without adequate resources often resort to brokers, agents who buy and sell goods or assets for others, utilizing the reputation that has been built within the broker's network of manufacturers. Companies then allocate portions of their budget towards salary and commission bonuses, as those utilizing brokers pay a "finder's fee" or a markup fee on top of the manufacturer's quoted price. Both these options have direct overhead or budget costs that lower overall revenue.

1.2.2 Inaccessibility, Trust, and Reputation

In a survey conducted by Deltabid, out of 500 purchasers, 31% cite finding the right supplier as being a problematic issue.[8] A leading factor of this is due to the unknown and nontransparent purchaser's profile and buying history. This creates a risk for manufacturers, as they want to ensure their customers are reliable and have a track history of completing payments. For this reason, many purchasers within companies struggle to receive responses from manufacturers who can produce the product within the specification needs. Without a broker's reputation and network, purchasers spend hours on the phone or search through multiple directories. Additionally, the purchasers themselves can lack the sufficient technical understanding of the product to specify their search requirements, which can lead to more dead-end outreach.[9] Vice versa, the purchasers would require proof of experience and expertise from manufacturers to safeguard the integrity and quality of their product. The complexity of these two issues causes a Catch-22 dilemma resulting in high minimums, a required minimum number of parts produced.

[8] "Top 10 Biggest Procurement Challenges [Infographic] - DeltaBid Blog." 19 Apr. 2016, http://blog.deltabid.com/top-10-biggest-procurement-challenges. Accessed 3 Sep. 2
[9] "Managing Suppliers Up to Speed - Harvard Business Review." https://hbr.org/1989/07/managing-suppliers-up-to-speed. Accessed 3 Sep. 2017.

1.2.3 Visibility and Insight

Purchasers and manufacturers lack both insight and visibility into the sourcing and production process of their supply chain. An astounding 39% of companies and individuals surveyed (Figure 2 below) state they lack visibility into the supply and capacity information of their supplier and logistic partners; 38% cite "some visibility," accounting for a total of 77% of those surveyed.

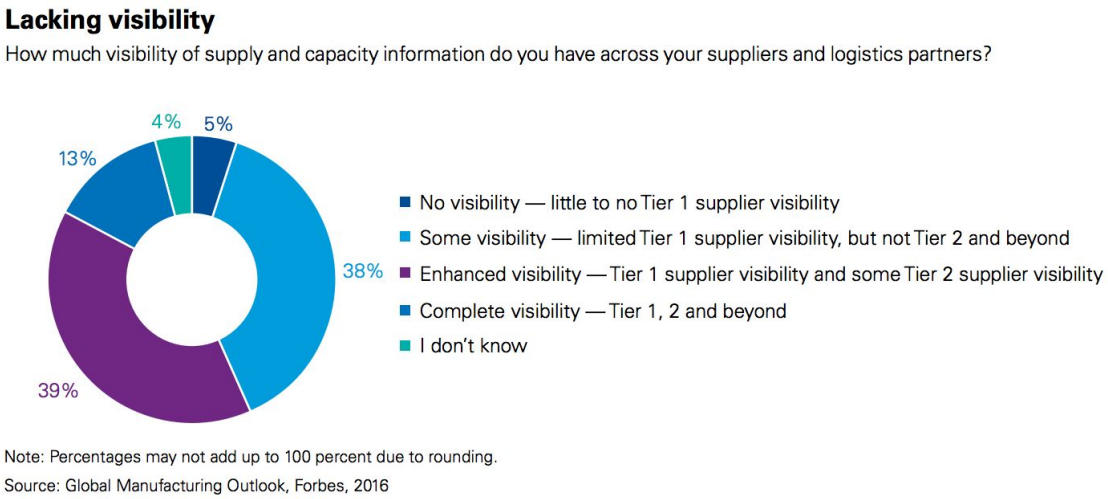

Figure 2: Lacking Visibility Into Supply and Capacity[10]

Visibility into the supply chain would allow purchasers and manufacturers to manage cross-functionality and look deeper into the end-to-end supply chain, enabling better real-time decisions to optimize and streamline their procurement and supply chain process.

1.2.4 Poor Communication

Poor communication within organizations and between purchasers and manufacturers can lead to many issues within the production process, drastically delaying projects or increasing costs. For example, poor communication between the procurement department and engineering

[10] "Global Manufacturing Outlook - KPMG." https://home.kpmg.com/content/dam/kpmg/pdf/2016/05/global-manufacturing-outlook-competing-for-growth.pdf. Accessed 3 Sep. 2017.

department regarding changes in design requirements can increase the design to production time. Similarly, purchasers and manufacturers will often forget to regularly communicate updates in production or material requirements, which can increase lead time and result in delayed production, increased product cost and poor product quality.

1.2.5 Outdated Technology

According to research by The Topline Strategy Group, inefficient procurement processes account for a yearly loss of $1.5 billion in revenue among North American businesses.[11] This is due to the outdated software and technology used in the industry. Most companies currently have little to no software, while larger companies are mainly using on-premise software that is slow and difficult to use. The resources required to manage and maintain such software account for 32 million labor-hours, all of which can be reallocated to finding more cost-saving opportunities and providing hands-on value to existing and prospective customers.

1.2.6 Security & Intellectual Property (IP) Protection

Security remains a scrutinized topic within the industry. In a study released by Deloitte entitled “Cyber Risk in Advanced Manufacturing,” only 52% of executives surveyed are either confident or extremely confident their organization’s asset is protected from external threats, with 48% feeling somewhat confident or less confident.[12] Of all those surveyed, 36% cite protection of intellectual property as a top concern. Strong security practices must be implemented and enforced by both manufacturers and purchasers alike for complete transparency and trust. Similar to other industries, the lack of skilled talent to fill the cybersecurity roles represents a significant challenge for manufacturers. Remaining competitive

[11] "PLANNING FOR INNOVATION - U.S.-China Economic and Security ...." 18 Sep. 2015, https://www.uscc.gov/sites/default/files/Research/Planning%20for%20Innovation-Understanding%20China%27s%20Plans%20for%20Tech%20Energy%20Industrial%20and%20Defense%20Development072816.pdf. Accessed 3 Sep. 2017.
[12] "Cyber risk in advanced manufacturing | Deloitte US." https://www2.deloitte.com/us/en/pages/manufacturing/articles/cyber-risk-in-advanced-manufacturing.html. Accessed 3 Sep. 2017.

requires deep financial and time commitments, a luxury reserved for bigger, more established companies.

1.3 Market Size and Projections

Industrial manufacturing in the United States has been steadily on the rise, with its growth forecasted to be at 5% compounded annually through 2018.[13]

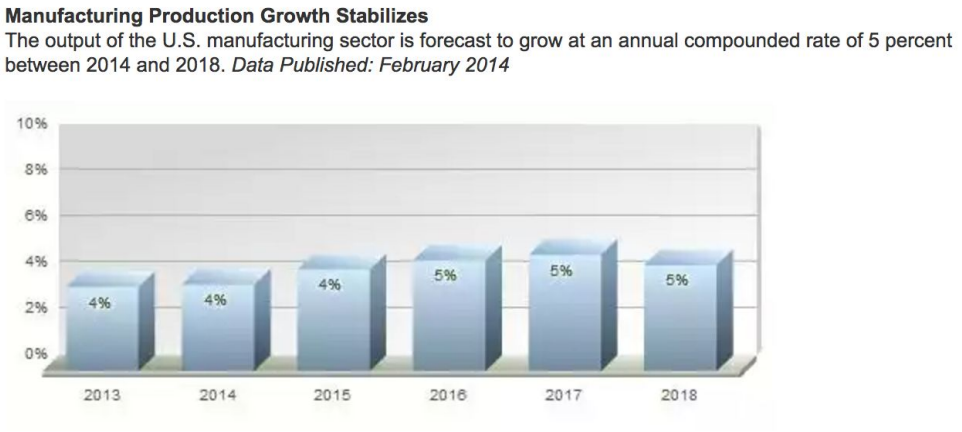

Figure 3: Manufacturing Production Growth Projection

In 2014 exported goods within the United States were estimated at $1.4 trillion, and there is a worldwide expected growth of $15 trillion by 2030. Additionally, companies within the United States are investing heavily in IIoT technologies, with spending estimated to be around $20 billion in 2012 and an approximate projection of $500 billion by 2020. These investments are expected to yield a return on investment to the global GDP as high as $10-$15 trillion by 2030.[14] For every dollar spent on manufacturing within the United States alone, $1.81 is expected to be added to the economy.[15]

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[13] "Manufacturing & Distribution Industry Forecast | Sikich." http://www.sikich.com/find-solution/industries/manufacturing-distribution/manufacturing-forecast. Accessed 3 Sep. 2017.
[14] "Defining And Sizing The Industrial Internet - Wikibon."27 Jun. 2013, http://wikibon.org/wiki/v/Defining_and_Sizing_the_Industrial_Internet. Accessed 10 Sep. 2017.
[15] "Industry 4.0 and manufacturing ecosystems: Exploring the world of." 22 Feb. 2016, https://dupress.deloitte.com/dup-us-en/focus/industry-4-0/manufacturing-ecosystems-exploring-world-connected-enterprises.html. Accessed 10 Sep. 2017.

2.0 Solution

2.1 Current Solution

2.1.1 SyncFab Platform Web 2.0

SyncFab is a technology company, established in the United States and headquartered in Silicon Valley, with the goal of connecting purchasers with manufacturers through the dynamics and innovations of the IIoT. Its product is a B2B SaaS ecosystem, or marketplace, providing purchasers with an interactive portal to local advanced machining capabilities capable of on-demand precision parts production. Purchasers can be inventors, innovators, designers or anyone that needs to have access to advanced machining capabilities.

Development began in 2013 as a cloud-based, virtual supply chain e-commerce, IIoT machine learning, and data mobilization platform. SyncFab's purpose is to match purchasers with a growing network of vetted machine shops and advanced manufacturing facilities mapped by who is local and who is clean.[16]

The platform allows purchasers to make effective cost-savings decisions by providing multiple, competitive requests for quotes (RFQ) based on insights into manufacturers' location, experience, material preferences, and machining capabilities. With its portal, which can be accessed anywhere with a computer connected to the internet, purchasers can reduce time and costs associated with sourcing parts production, especially in comparison to traditional procurement processes involving multiple online and offline solutions.

Furthermore, the technology automatically pushes SyncFab's front-end and back-end software updates in real time, a benefit that reduces the financial burden of maintaining locally hosted software. It provides users with an on-demand, just-in-time, easy to use, and secure online cloud solution to share

[16] "ISO 50001 Energy Management Standard | Department of Energy." https://energy.gov/ISO50001. Accessed 3 Sep. 2017.

files, improve communications, streamline procurement and manage parts inventory to help users focus on what matters: producing quality products.

For secured transactions, the platform stores intellectual property, forms, and documents in Amazon Web Services (AWS) servers backed by top security protocols such as SSO, firewall and DDoS protection. All RFQs, IP, and transactional history are easily accessed in real time to help users compare pricing or past requirements to speed up the procurement process.

2.1.2 Current Business Model

The revenue stream for the current SyncFab platform includes a financial markup applied on top of the final agreement between purchasers and manufacturers — an industry practice for third-party referrers. SyncFab acts as a third-party referrer connecting producers and purchasers—its core difference compared to a "human" alternative is the additional value provided through the use of internet technologies for a faster and streamlined buying process. Building and improving on said technology requires upfront investments for sustainability, and success is dependent on user growth and mass adoption.

In practice and results, the markup equates to a much smaller quote compared to those received from purchasers without SyncFab. This is the result of the value SyncFab provides to manufacturers, acting as the trusted broker with a strong industry reputation.

2.1.3 Partnerships With Local Cities and Federal Agencies

SyncFab collaborates with local cities[17] and federal government agencies in public and private partnerships to advance industry innovation and economic development. Agreements with the City of San Leandro[18] and Clean Energy Smart Manufacturing Innovation Institute, jointly launched under the United

[17] "14 Startups Chosen for San Francisco Regional 'Startup in Residence ...." 19 Apr. 2016, http://www.govtech.com/13-Startups-Chosen-for-San-Francisco-Regional-Startup-in-Residence-Program.html. Accessed 19 Sep. 2017.
[18] "SYNCFAB Selected by Cities of San Francisco & San Leandro to STIR ...." 20 Jul. 2016, http://www.releasewire.com/press-releases/syncfab-selected-by-cities-of-san-francisco-san-leandro-to-stir-program-707463.htm. Accessed 19 Sep. 2017.

State Department of Energy and the White House[19], better allow us to track underutilized production assets around the country and open our database to a supply of certified manufacturers to match with the regional demand of our purchasers.[20] Also, these partnerships allow for our system to catalog machining process capabilities and capacities within multiple jurisdictions helping expand our network by bringing manufacturers online (internet) to be utilized by purchasers all over.

2.2 Blockchain Solution

2.2.1 Blockchain for Supply Chain Management

Blockchain, or distributed ledger, is the latest technology with many applications within the IIoT technological ecosystem. It is an incorruptible digital ledger of codes containing information programmed and cryptography encrypted to records through its distribution network. A blockchain is a shared database, providing millions of linked blocks in which its information is verified and agreed upon simultaneously by the millions of computers within its hosted consensus network accessible to anybody with a computer connected to the internet. It is the record of truth and proof of ownership, whereas the block, a combination of transactions, is encrypted to its previous block controlled by private keys or contract code.[21] Because of this, it is considered extremely difficult to hack and change stored data in the blockchain, as any change would be detected and unverified by those within its network.

[19] "FACT SHEET: President Obama Announces Winner of New Smart ...." https://obamawhitehouse.archives.gov/the-press-office/2016/06/20/fact-sheet-president-obama-announces-winner-new-smart-manufacturing. Accessed 19 Sep. 2017.
[20] "CESMII." https://www.cesmii.org/. Accessed 3 Sep. 2017.
[21] "Blockchain - Wikipedia." https://en.wikipedia.org/wiki/Blockchain. Accessed 3 Sep. 2017.

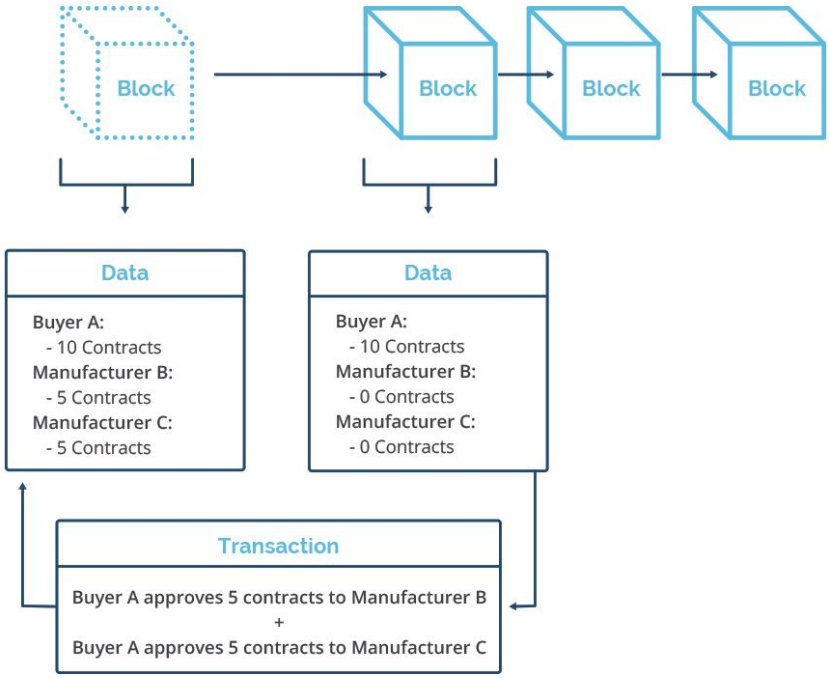


Figure 4: Transactions and Recording Contracts Between Blocks on Blockchain

Bitcoin was the first blockchain created back in 2009 by a person or a group by the pseudonym, Satoshi Nakamoto that paved the way for an innovative system of peer-to-peer (P2P) online sharing of value.[22] As opposed to the traditional centralized method of accounting payment processors, it achieved the goal through its decentralized ledger (blockchain), making it difficult to add transactions to the ledger but relatively easy to validate and authenticate through its network. Fraudulent transactions are identified and discarded from its ledger.

Additionally, with the distributed ledger capability of the Bitcoin blockchain, Ethereum (click here to learn more about Ethereum), released in 2015, is an alternative framework that would also allow anyone to create smart contracts and decentralized applications (DApp). DApps are primarily software or app,

[22] "Bitcoin - Wikipedia." https://en.wikipedia.org/wiki/Bitcoin. Accessed 3 Sep. 2017.

whose backend code operates on a peer-2-peer (P2P) decentralized blockchain network and interacts with a front-end interface.

Smart contracts are a piece of code with arbitrary rules controlling a set of digital assets. It is essentially a cryptographic block containing digital values that can only be unlocked and accessed upon execution of predetermined conditions of which can be created by anyone to "create their own arbitrary rules for ownership, transaction formats, and state transition functions."[23] These applications of smart contract technologies will be pivotal in the standardization of a decentralized supply chain management ecosystem for all manufacturing parts production.

2.2.2 The Smart Manufacturing Blockchain

Our vision is to simplify supply chain management, secure transactions, and safeguard all intellectual properties to create a transparent procurement gateway within the industrial manufacturing industry. As SyncFab is a functional product with active users, we plan to accomplish our vision by integrating the current platform with the innovative application of smart contracts and blockchain technologies with the development of the Smart Manufacturing Blockchain. The implementation itself would essentially change SyncFab's current business model and will decentralize the procurement process between purchasers and manufacturers within the industry. (The evolution of the SyncFab business model is further explained in Section 2.2.5).

The Smart Manufacturing Blockchain is a system of records containing account or contact information, order history, machine capacities, designs, and intellectual property. In practice, within the decentralized ecosystem, purchasers will be matched with the manufacturers whose machine capacities best fit their project criteria then directly procure the parts production without intermediaries. All completed purchase orders will be recorded onto the Smart Manufacturing Blockchain to build the user's record history further, thus

[23] "White Paper · ethereum/wiki Wiki - GitHub." https://github.com/ethereum/wiki/wiki/White-Paper. Accessed 3 Sep. 2017.

providing a record of historical transactions, giving both purchasers and manufacturers the trust and confidence to place and fulfill orders.

Initially, the Smart Manufacturing Blockchain will be a system of records for all parts production orders, containing transactional records and information. The ultimate goal is to reduce cost and increase efficiency by eliminating intermediaries and barrier of entry such as brokers, outdated software and inefficient processes. In doing so, we hope to connect innovators to manufacturers, smart machines, and factories within a transparent and decentralized network for supply chain management.

2.2.3 Smart Contracts for a Transparent Procurement Process

The first iteration of the SyncFab DApp will implement smart contracts executed on blockchain to complement the existing SyncFab procurement process, which has been tested and optimized for the last two years. It will transform the current SyncFab parts procurement process to be more transparent and easily manageable. Each smart contract executed on the Smart Manufacturing Blockchain will add credibility to the purchaser's and manufacturer's profiles as successful production orders are recorded to the ledger's system of records. The transaction of each order acts as a digital paper trail on the distributed ledger and is transparent to prospective purchasers.

Information such as RFQs, quotes and intellectual properties are encrypted and executed on smart contracts and then recorded on the blockchain, which only those with allocated rights can access helps manufacturers record, track, and monitor assets.

Initially, the system will be a partially decentralized system—the partial decentralization is due to the SyncFab layer built into the current procurement process acting as the referrer or "broker" of the deal. After the smart contracts are fully tested and implemented to fit real-life business use cases, the SyncFab intermediary layer will be eliminated, making it a fully decentralized ecosystem.

2.2.4 A Decentralized Supply Chain Management Network

Traditional manufacturing economies of scale perpetuate intransparency and inaccessibility, reserving privileged access to centralized assets controllers, the largest purchasers as such conglomerate companies who monopolizes access, requiring high order minimums and resourceful intermediaries such as brokers, directories, platforms, and services, all of which contain individual assets and siloed sets of data requiring management through multiple mediums and platforms. These additional layers complicate the entire supply chain management process, increasing costs and lowering revenue. The implementation of the smart contracts will pave the way to an entirely decentralized supply chain management ecosystem in which innovators, suppliers, and manufacturers have more control of the success, quality, and delivery of their product. With smart contracts and the Smart Manufacturing Blockchain, we will decentralize the manufacturing supply chain economies of scale, making it more accessible, transparent and profitable to all participants from a now predominate B2B siloed and exclusive model to a peer-to-peer (P2P) ecosystem.

2.2.5 Business Model Evolution

In the decentralized supply chain management network, we will eliminate the SyncFab markup fee. Instead we will introduce a transaction cost imposed on all final payments, the percentage of which will be determined during development and after the smart contract proof of concept. The smart contract proof of concept is where we will develop the smart contracts then implement and test with purchasers and manufacturers in a “real-life” procurement process. During which, we will have a better understanding of purchaser needs and business use cases to determine the said amount correctly.

3.0 The SyncFab MFG Utility Token - Powering the Smart Manufacturing Blockchain

The MFG Token is a utility token that is a vital part of the SyncFab platform and the Smart Manufacturing Blockchain. It was initially built on the Ethereum ERC-20 standard and sold to current SyncFab users and early adopters [to transact by unlocking and updating smart contracts along, and payments for transactional fee payments.

Primarily, the MFG is a utility token within a reward system where purchasers and manufacturers can incentivize one another for returned engagement, trust, and transparency. Within the ecosystem, participants can use it to reward and incentivize others for faster responses and competitive bids (details outlined in Section 3.1).

Our goal is to build a decentralized system where users dictate the ecosystem's economy of scale by incentivizing and rewarding its community users for returned efforts. For example, for time sensitive projects that require a faster time to quote from manufacturers, the purchaser can offer a reward in MFG to manufacturers for placing bids. Theoretically, if there is a reward for the quotation effort on top of the value of the contract, manufacturers will be more enticed to respond with a quote in a shorter amount of time. In essence, this will also increase and diversify the number of quotes sent to the purchaser. By implementing this system, we are helping to revolutionize the manufacturing industry, saving them time and money, as well as maximizing production and increasing purchaser satisfaction.

3.1 Incentivizing the Manufacturer (Bidder)

To reduce the time to production and drive competition, we plan to use the MFG Token to entice manufacturers to place faster bids and price more competitive (lower priced) quotes. The MFG Token will be a currency of reward

that will incentivize manufacturers for their quoting efforts proportional to their quote acceptance rate.

Every RFQ created will be listed as an auction and be available for bid. It will have a reward, in the amount of MFG tokens, to be awarded to the manufacturers for their bidding efforts. The process itself is similar to a unique bid auction whereas the winner is usually the lowest bidder, whose expert skillset is required to accurately price a potential winning bid. The additional benefit of the MFG reward is to incentivize the manufacturers to place a faster bid. There will be a minimum requirement for all RFQs listed -- an amount to be determined after the initial token distribution and subject to change upon future user feedback and engagement. The amounts will vary and are theoretically dependent on the scope and delivery of the project. Below is a list of additional benefits associated with this concept.

3.1.1 Benefits

1. Creates a decentralized token economy by putting control in the purchaser's hands whose listing and bid reward is driven by scope and delivery of project.
2. Qualifies committed purchasers by requiring an upfront investment - MFG in the form of bid reward.
3. Breaks the barrier of entry and trust by incentivizing manufacturers for their effort - win or loss thereof.
4. Drives competition between manufacturers within the SyncFab system which will benefit purchasers in the following ways:
    a. Competitive pricing.
    b. Reduced lead time by lowering time to quotation. Purchasers with time sensitive projects can expect faster and more quote instances from manufacturers.
5. Drives engagement of manufacturers within the SyncFab ecosystem in search for additional projects and bid reward.

6. Manufacturers earn compensation for their responsiveness to SME buyers.

3.1.2 Model, Workflow & Distribution

1. Purchaser creates an RFQ (auction listing).
2. Purchaser dictates a budget for their project with a tolerance of how much they're willing to go over by.
3. The budget is visible to the manufacturer - the tolerance amount is not
4. Purchaser will then add the MFG bid reward amount .
5. RFQs will come in packages of 5 bids. If the Purchaser wants 6-10 bids, they would have to buy two (2) packages.
6. There will be a minimum amount of MFG bid reward required on all RFQ auction.
7. RFQ is sent to multiple manufacturers for bidding.
8. Manufacturers will review the RFQ and make a bid
9. Manufacturer whose bid amount exceeding the tolerance amount will automatically be rejected. The manufacturer will be made aware of beforehand that if their bid amount exceeds the tolerance, it will automatically be rejected.
10. The manufacturer whose bid amount was rejected will have the option to reprice their bid. There will only be one attempt to reprice.
11. The Purchasers selects the winner.
12. 50% of the MFG bid reward will be awarded to winning bidder.
13. 10% of the MFG bid reward will be awarded to each of the four (4) losing bidders, totaling 40%.
14. 10% of the MFG bid reward will be allocated into the Loyalty Pool (explained in Section 3.6) to incentivize users for engagement.
15. If there is more than 1 and less than 5 bids, the purchaser will be refunded 10% for every bids that was not received.
16. If there is only one bid with said bid accepted as the winner, the 50% of reward goes to the winner, 40% is refunded to the purchaser with the remaining 10% allocated to the Loyalty Pool.

17. If there is at least one bid with no winner accepted, 10% will be allocated to each bidder, 10% to the Loyalty Pool and the remaining refunded to the purchaser.
18. If there are no bids, 10% will be allocated to the Loyalty Pool, and the remaining will be refunded to the purchaser. This is an extremely rare use case.

3.2 Incentivizing the Purchasers

To increase the likelihood of winning the RFQ auction, the manufacturers will have an opportunity to incentivize the purchasers to select their quote as the winning bid. Upon submitting the quote to the purchasers, the manufacturer can include a reward in an amount of MFG tokens on top of their quote (the "MFG quote reward"). The MFG quote reward can be viewed as a discount, which is then awarded to the purchaser if the offering manufacturer is selected as the winner. This will allow manufacturers to allocate the MFG token they've been awarded through the bidding process back into the ecosystem through the purchasers. The amount will depend on the manufacturers as they can allot the same amount as the amount of MFG as stipulated to the winning bidder. The manufacturer can also allocate a larger amount of MFG to further incentivize the purchaser to select their quote as the winning bid. This incentive model will also help to resolve rare occurrences where purchasers will receive bids of exact amount from multiple manufacturers - a bid with a reward will make it more favorable, assuming other unknown factors does not play in account.

3.2.1 Benefits

1. The MFG tokens go back into the ecosystem as any MFG RFQ award amount can in essence be rewarded to future purchasers.
2. Replenishes the purchaser's MFG token amount to place more parts orders through RFQ bid auctions.
3. Incentivize purchasers for commitment and fast ordering, which will provide manufacturer with a consistent revenue stream.

3.2.2 Model, Workflow & Distribution

1. Manufacturer designates “X” amount of MFG as a quote reward on top of their bid.
2. Purchaser accepts the offer and is rewarded 80% of MFG allocated as the reward.
3. The remaining 20% will be reallocated into the community pool.

3.3 Transaction Fee

A transaction fee will be added to the final purchase orders amount transacted within the ecosystem. The transaction fee is paid for by the purchasers on top of the quoted price. Said value is to be determined during development. The fee will be distributed between SyncFab, Smart MFG Tech LTD and the Loyalty Pool.

3.4 Additional Utilization of MFG (Future Builds)

The following are examples of possible additional MFG Token utilizations within the SyncFab platform. Its development is dependent and prioritized according to user feedback and engagement within SyncFab.

1. As a form of payment for all financial transaction: As our existing customer base is accustomed to bank wires, ACH and checks, our goal is first to introduce the MFG token and then educate users the benefits of using tokens for instantaneous and secure financial transactions.

2. Professional Services Payments: Users will be able to use the MFG as a form of payment for:

    a. Contractors such as designers, engineers, and quality control consultants will offer their services within the SyncFab ecosystem and will be paid in MFG tokens for their services. Design services can be inclusive of feedback to purchasers’ engineering designs

as well as compatibility audit to machine production requirements.

b. SyncFab will offer concierge delivery service, or professional services consultations to manufacturers to network their machines and integrate them more closely with the SyncFab network.

3.5 MFG Economic Model

The Smart Manufacturing Blockchain has a fixed amount of one billion (1,000,000,000) MFG tokens. The tokens will be generated prior and will be distributed during the token distribution event. (Please refer to Section 6.0 for additional information regarding the token distribution event.) No additional MFG tokens will be created after the token distribution event.

3.6 Loyalty Pool

The Loyalty Pool is used to promote and encourage continued engagement within the system by rewarding users with MFG tokens. Examples of such engagement are: regular logins to SyncFab, creating and updating smart contracts, placing orders, auction listing, bidding on projects.

4.0 Technical Overview

4.1 SyncFab Platform Web 2.0

As to date, these are the features that are currently available within the SyncFab Web 2.0 platform. These features help connect purchasers to a network of vetted manufacturers for a streamlined procurement process reducing the number of involved intermediaries.

4.1.1 Features and Functionalities

1. Database of vetted local machine shops.
2. Search machine capabilities.
3. Profiles and production history of local manufacturers.
4. Request-for-quotation (RFQs) ordering & management.
5. Design files upload and sharing.
6. Quality inspection reports.
7. Order history.
8. Re-order history.
9. In-app messaging.
10. Payments with 3rd party integration such as Stripe.
11. Direct ACH and wire transfer with banks.
12. Shipment integration for delivery tracking.

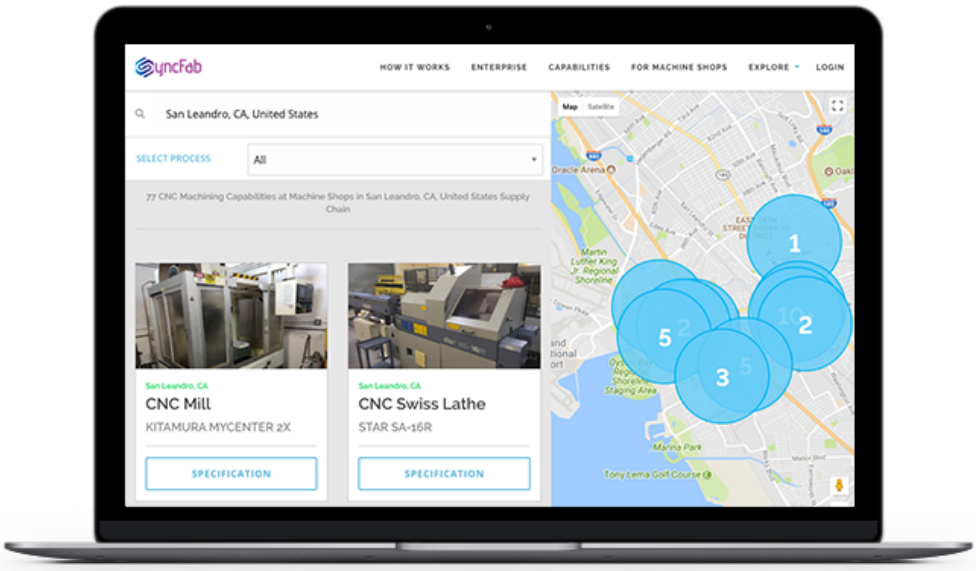


Figure 5: Searching for local machine capabilities

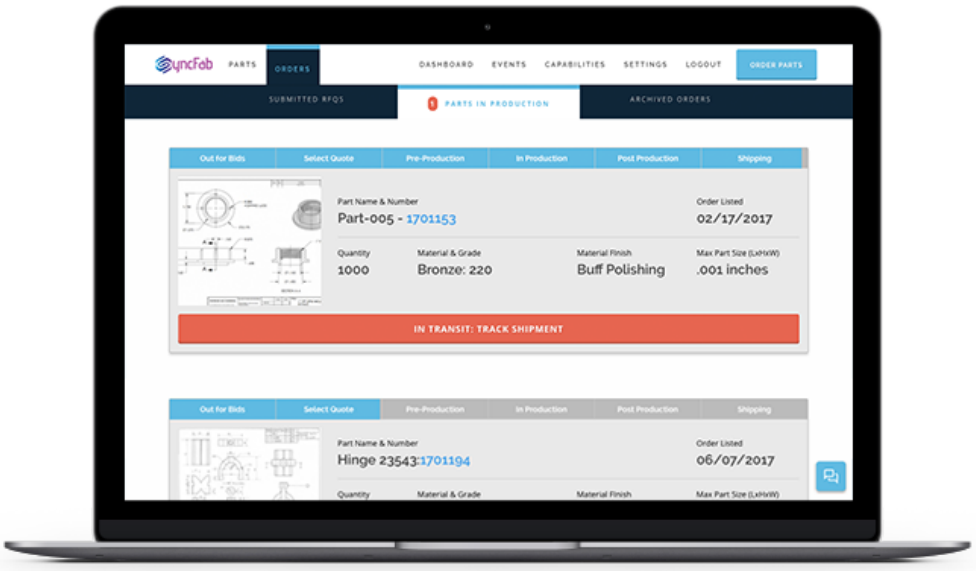


Figure 6: RFQ Management Within SyncFab

4.1.2 Parts Procurement Workflow

The following is the user current workflow of a part's procurement process:

a. Purchaser searches the SyncFab database of vetted manufacturers.

b. RFQ is created and sent to SyncFab for RFQ quality control.
c. Approved RFQ is sent to manufacturers.
d. RFQ is reviewed, quoted and sent to the purchaser.
e. SyncFab applies markup on top of quote.
f. Purchaser reviews & accepts quote, which in turns notifies the manufacturer to begin work.
g. Agreement contract is created and signed by both parties.
h. Purchaser makes 1st payment or deposited amount to SyncFab.
i. SyncFab issues said payment to the manufacturer.
j. Purchaser tracks production on SyncFab's web and mobile app.
k. Part is completed and delivered to the purchaser with tracking code.
l. Purchaser makes final or complete payment to SyncFab.
m. SyncFab issues final payment to manufacturer.

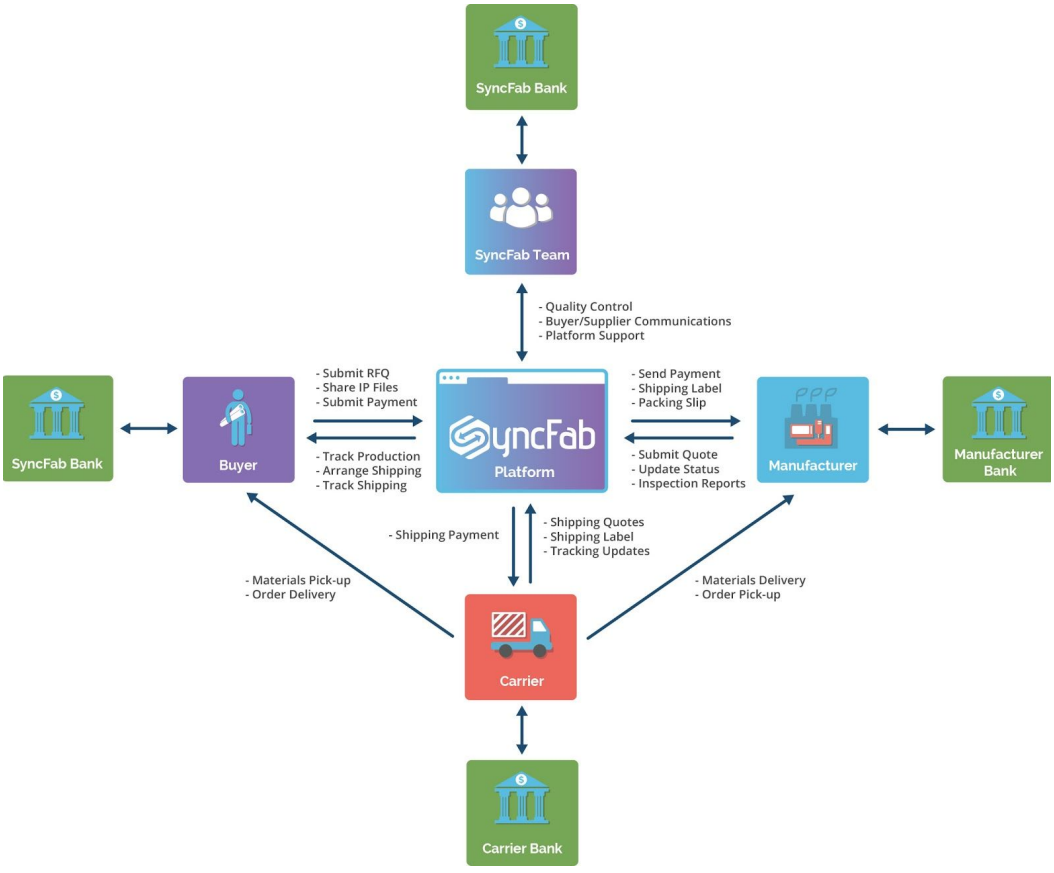


Figure 7: Procurement process workflow in the current SyncFab platform

4.2 SyncFab Platform Web 3.0 with Smart Contracts & Blockchain

4.2.1 DApp (Decentralized App)

We will develop the SyncFab DApp by integrating the current SyncFab Web 2.0 front end interfaces with an improved backend smart contracts protocol on the Ethereum distributed ledger. In doing so, we hope to maintain current user experiences and improve existing procurement processes to be compliant with the Ethereum blockchain. We have chosen to do a proof of concept on Ethereum due to the infancy of blockchain technology. In doing so, we are hoping to fine tune the supply chain management protocol on a tried and tested blockchain containing a community of developers committed to making improvements through regular testing of common and corner use cases.

4.2.2 Smart Contracts Architecture

The smart contracts will be responsible for a particular type of record within the system. Each contract contains functions allowing it to create and update associated contracts or system information.

These are the smart contracts to be implemented on SyncFab DApp:

1. Identity Contract:
    a. Stores records of user identification within the system, i.e. username, email, wallet, ratings, historical order volume, etc.
    b. MFG is required to create and update.
2. Purchase Order Contract will be used to initiate and record the contract with the following information:
    a. Request for Quotation (RFQ).
    b. Bidder & quote amount.

c. Production Criteria.
d. Designs files or any other shareable IP.
e. Record of all agreement documentation (legal contracts, payment terms, etc.)
f. Inspection Reports.
g. The MFG token will be required to initiate, and update on the Smart Manufacturing Blockchain.

3. Payment Contract:

    a. Initiates and confirms payments
    b. Purchaser stipulates payment terms
    c. The MFG token will be required to initiate and update on the Smart Manufacturing Blockchain

Note:

These smart contracts are based on an initial architectural concept and subject to change during development, by customer use cases and during evolution within the industry in the years to come.

4.2.3 Potential Future Smart Contracts

The following smart contracts have been initially conceptualized and will potentially be built on the SyncFab DApp.

1. Account Contract - Stores company information, access for multiple users, company wallet, ratings, machine capabilities
2. Insurance Contract - Coverage for defective product insured by the Smart Manufacturing Blockchain
3. Production Contract

    a. Stores data:

        i. Data input/output from machine
        ii. Private and public data feeds (materials cost, etc.)

b. Parts production status updated by smart machines

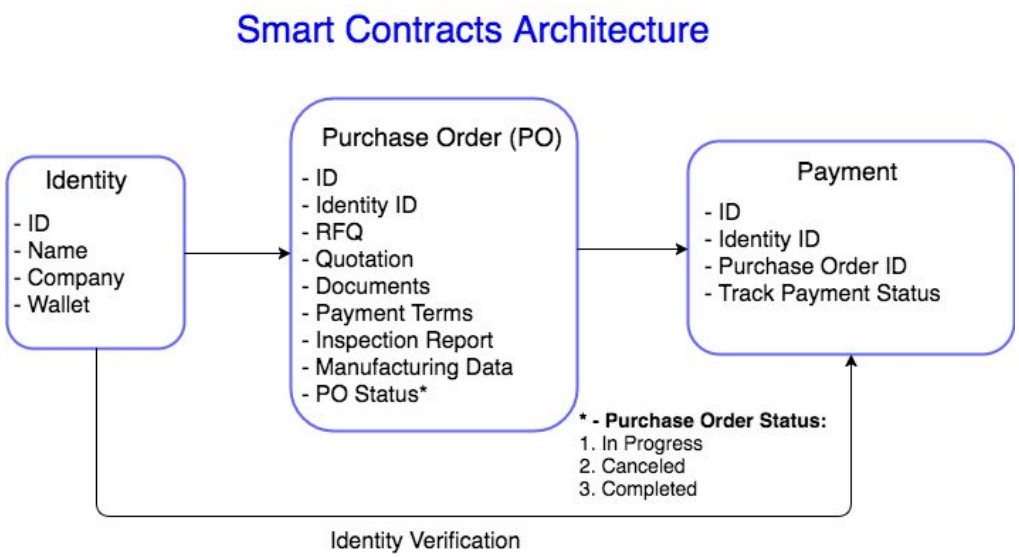


Figure 8: SyncFab Smart Contract Architecture

4.2.4 Smart Contracts Procurement Transaction Workflow

Below is a transaction workflow for a parts procurement process between the purchaser and manufacturer

1. Purchaser creates RFQ on the SyncFab platform.
2. Purchaser submits RFQ to SyncFab for quality assurance services.
3. SyncFab rep reviews or suggest edits to the RFQ.
4. RFQ is approved by SyncFab.
5. The DApp then generates a Purchase Order Contract.
6. RFQ and agreement documents are sent to the manufacturer(s) via the DApp.
7. Manufacturer(s) review the RFQ and agreement terms.
8. Manufacturer(s) quote, and agree to the terms then submits to the DApp.
9. The DApp applies SyncFab's markup fees to the manufacturer's quote.
10. Purchaser reviews and approves the quote on the DApp.

11. The manufacturer is then notified to produce the product.
12. When part is completed, manufacturer completes an inspection report.
13. Inspection report is sent to the purchaser on the SyncFab platform.
14. The purchaser reviews the inspection report on the SyncFab platform.
15. A Payment Contract is created.
16. Purchaser selects shipment option via the third-party api on the SyncFab platform. (ex. FedEx)
    a. All shipments require a signature upon receiving.
17. A shipment tracking code is generated by the third-party API.
18. The purchaser makes the payment to the manufacturer on SyncFab via a third-party integration within SyncFab. (ex. Stripe)
19. The package is picked up by the logistic partner.
20. The purchaser receives the package and signs off.
21. The logistic partner updates the status to “Delivered”, which is reflected in the SyncFab platform under the shipment tracking dashboard.
22. The Purchase Order Contract is then marked as “Completed” and recorded to the blockchain.

4.2.5 Procurement Transaction on Blockchain

Below is an example of how procurement transactions with smart contracts are recorded and validated on the blockchain.

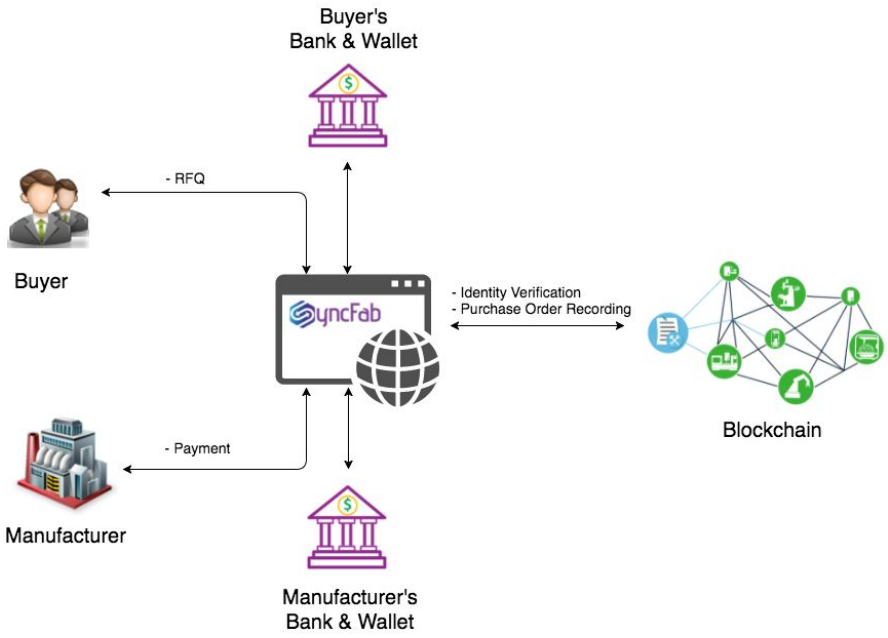


Figure 9: Procurement transaction with blockchain

4.3 The Smart Manufacturing Blockchain

4.3.1 Decentralized Procurement Transaction Workflow

The following is a high level overview of how parts production will be procured on the decentralized system.

1. Purchaser creates an Identity Contract, which holds contact information, wallet, past order history, and purchaser ratings.
2. Manufacturer creates an Account Contract containing contact information, wallet, manufacturer rating and current machine capabilities that can be regularly updated with usage of MFG token.
3. Purchaser creates a Purchase Order Contract on the ledger, which contains the RFQ, manufacturer requirements, and all associated agreement documents.
4. The ledger will filter manufacturer matching machine capabilities to RFQ and best location fit.
5. Matching manufacturer will receive the RFQ to bid on the project.

6. The bid and associated agreement documents are then sent to the purchaser for approval.
7. Upon approval, and agreement of terms, the Purchase Order Contract will be updated to “In Production.”
8. The Purchase Order Contract will then be used to update production status and store machine data.
9. Upon completion of the production, the manufacturer will issue an inspection report to the purchaser.
10. Upon purchaser’s approval, a Payment Contract is created between the purchaser and manufacturer.
11. Manufacturer will review the Payment Contract.
12. Upon approval of the Payment Contract from the manufacturer, a Purchase Order Contract will be created between the purchaser and logistic company for the shipment of the product.
13. Upon the completion of this contract, the original Purchase Order will update its status to “Completed” and recorded to the ledger. All previous processes continue at Step 3.
14. Upon arrival of the product, the Purchase Order Contract with the logistic company will update its status to “Completed” and updated to the ledger.
15. Upon complete payment from the purchaser to the manufacturer, the original Purchase Order Contract will update its status to “Completed” and recorded to the ledger.

4.4 Premium Features to SyncFab DApp

These are the additional features built to further assist purchasers and manufacturers streamline their procurement process to easily manage their end-to-end supply chain production.

4.4.1 API

We will be creating a public API in which companies, vendors and other blockchains can interact and transact with the Smart Manufacturing Blockchain,

furthering our goal of standardizing it within the industrial manufacturing industry.

4.4.2 Machine Data Feed

Along with the Smart Manufacturing Blockchain, we will continue with our long-term investment by creating additional SyncFab features allowing direct and live data feeds from machines that connect directly to the Smart Manufacturing Blockchain. This will allow purchasers and manufacturers to track their parts production in real-time, directly from machine status updates. The preliminary concept is inclusive of an insertable hardware connecting to nearby equipment and the internet creating a network of smart machines communicating with the Smart Manufacturing Blockchain in real time.

4.4.3 Public Data Feed

Real-time feed from public databases will be critical in optimizing and lowering costs while sourcing production requirements. We plan to integrate feeds to provide insights into real-time commodity cost, private and public machine capabilities, news RSS by keyword and other related data. Manufacturers can in turn use these data to better price their quotes based on real-time material costs. Purchasers will have a broader visibility into machine capabilities outside of the Smart Manufacturing Blockchain.

4.4.4 Connection to Logistics Providers

Oftentimes delivery requires more than one logistic company—products are shipped and transferred to regional and local distributors for final delivery. We want to provide advanced, real-time tracking capabilities to our customers to manage their entire supply chain production from concept to delivery. The connection with multiple logistics provides will allow the purchasers to track the location of their product from the moment it leaves the manufacturer's factory to its current location on the road.

5.0 Roadmap

The following roadmap is dependent on the soft cap raised during the initial token issuance to early adopters and any regulatory changes to the utility token economies. Also, the roadmap is subject to re-prioritization due to unforeseen circumstances or complications during development stages or through customer feedback of real life use cases. As previously stated, SyncFab is committed to the long-term success of the platform and the standardization of the Smart Manufacturing Blockchain. Successful companies have a customer first philosophy ingrained into their foundation; as an established company, this is our approach to exponentially grow our customer base by building a product of high value that will save time or reduce overhead.

5.1 Milestones

Development of the SyncFab Platform Web 3.0 begun on August 28, 2017 to reach the Milestone 1 Goal - MFG Token Distribution Event (information below).

SyncFab Platform Web 3.0 will include the below:

1. Creation of the smart contracts to generate and distribute the 1,000,000,000 supply of MFG to the allotment stipulated in the Token Distribution Plan (Section 6.2).

2. Creation of five (5) wallets to each store its individually distributed MFG amount in the above mentioned allotment. The wallet is an encrypted digital wallet used to store its encoded MFG or ETH, whereas it can be decoded to validate its actual amount on the Ethereum Network.

3. Creation of the crowdsale smart contract to distribute the MFG tokens in the amount relative to the ETH contributed from the Token Distribution Sale (Section 6.1).

4. Creation of the Ethereum Virtual Machine (EVM) to secure, execute and validate the previously mentioned smart contracts, future smart contracts, and

the transfer and conversion of MFG to ETH, and vice versa? on the Ethereum Network.

5. Integration of the EVM into the current SyncFab platform and technology stack.

Below is an overview of the roadmap milestones.

**The roadmap is subject to changes during development and regulations affecting the blockchain technology and utility token economics.*

Milestone 1 - Q4 2017	MFG Token Distribution Event *Presale begins November 15 for the MFG Token generation and distribution.*
Milestone 2 - Q1 2018	MFG Token Acceptance Integration *Integration of the MFG token for acceptance into existing SyncFab RFQ Web 2.0 Sourcing (Pre-Blockchain) platform*
Milestone 3 - Q2 2018	Format Purchaser Blockchain Smart Contracts *Amend Ethereum Smart Contract conditions for Supply Chain Purchaser Requirements*
Milestone 4 - Q3 2018	Format Manufacturer Blockchain Smart Contracts *Amend Ethereum Smart Contract conditions* for existing Machine Shop Capabilities
Milestone 5 - Q1 2019	Implement Web 3.0 MFG Blockchain Smart Contract *Implement MFG tailored Ethereum Smart Contract into upgraded SyncFab Web 3.0 platform*

Milestone 6 - Q2 2019	Survey Machine Shop Upgrade Requirements *Survey machine Shop upgrades to meet more Supply Chain Purchaser automated requirements on end to end Blockchain Smart Contract*

6.0 Token Distribution Launch

6.1 Token Distribution Event

1. Token Name: Smart Manufacturing Token
2. Token Symbol: MFG
3. Total Supply: 1,000,000,000 MFG
4. Allocated market (public) supply: 300,000,000 MFG (30%)
5. What is the timeline for token sales?
6. Public Pre-Sale Start Date: November 15, 2017
7. Pre-Sale will conclude when the Soft Cap is reached or on January 15, 2018.
8. Public Sale Date: January 15, 2018
9. We will be accepting ether (ETH) as the form of payment.
10. 1 ETH = 1,000 MFG
11. Soft Cap = 18,000 ETH. The Soft Cap is the minimum amount of MFG tokens we are looking to sell off in the distribution event.
12. Hard Cap = 180,000 ETH. The hard cap is the maximum amount of MFG Tokens we are looking to sell in the distribution event.
13. Any unsold MFG allocated to the public market supply will be destroyed after the distribution event.

6.1.1 Bonus Incentive

1. Bonus incentives will be first come, first serve. The earliest purchasers will be rewarded additional MFG tokens.
2. Bonus Structure based on the order of Ethereum (ETH) executed on the crowdsale contract:
    a. Soft Cap Goal (15,000 ETH)
        i. The first 2,250 ETH = +25% Bonus
            1. +250 MFG bonus per 1 ETH

2. Equivalent: 1 ETH = 1,250 MFG

ii. The following 2,250 ETH = +20% Bonus

1. +200 MFG bonus per 1 ETH
2. Equivalent: 1 ETH = 1,200 MFG

iii. The following 10,500 ETH = +15% Bonus

1. +150 MFG bonus per 1 ETH
2. Equivalent: 1 ETH = 1,150 MFG

b. After Soft Cap (250,000 ETH Hard Cap Goal)

i. The first 70,500 ETH = +10% Bonus

ii. Equivalent: 1 ETH = 1,100 MFG

c. The remaining tokens will be regularly priced at 1 ETH = 1,000 MFG.

3. Any unsold MFG will be destroyed after the distribution event.

6.2 Token Distribution Plan

1. Prior to the token distribution event, Smart MFG Tech LTD will generate a supply of one billion (1,000,000,000) MFG tokens.
2. Each MFG wallet account will store MFG tokens on the blockchain to the unit of 18 decimal places - the smallest unit of an MFG token being 0.000000000000000001 MFG .
3. There will be no inflating of the MFG. The distribution smart contract does not permit any new tokens to be created or destroyed after the token distribution event.
4. There will be a total of three hundred million (300,000,000) MFG offered to the public (current SyncFab users and the Smart Manufacturing Blockchain early adopters).
5. At the conclusion of the distribution, the token distribution smart contract will destroy any MFG allocated to the public that is not bought by the public during the distribution event.

6. The total supply of MFG is dependent on how many MFG's are sold during the distribution; thus the final supply has yet to be determined.

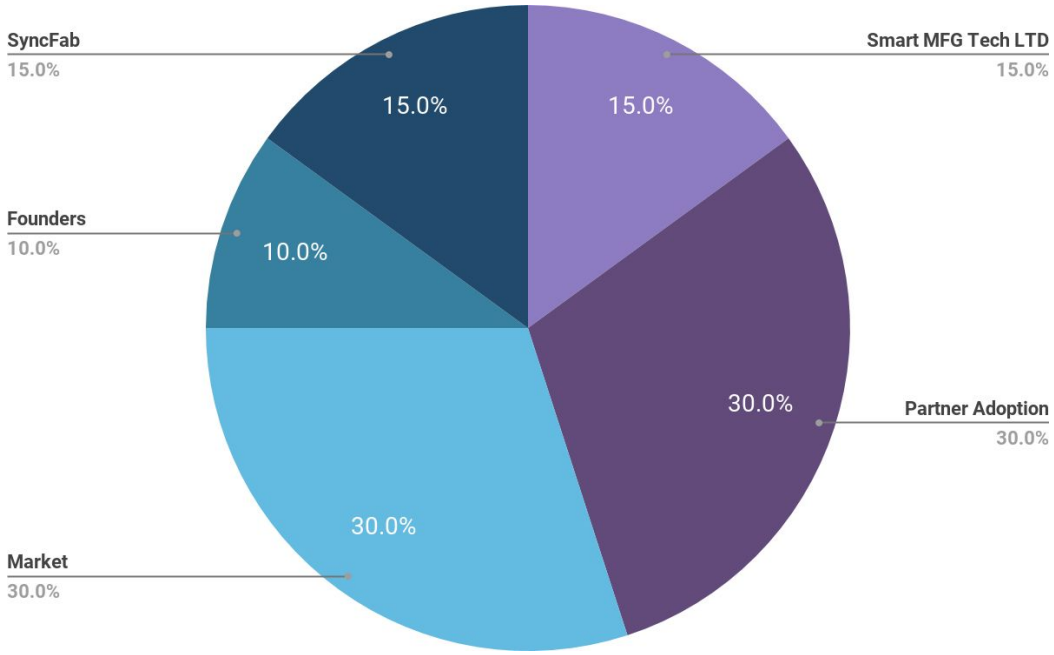


Figure 10: MFG Token distribution chart

1. 15% to Smart MFG Tech LTD (refer to Section 7.1 for details) for long-term foundation promotional budget, and network governance
2. 30% to Partnership Adoption Pool - for long-term community building and adoption of the Smart Manufacturing Blockchain through partnerships. The MFG within this pool will be allocated to potential Smart Manufacturing Blockchain partners who will adopt and implement the usage of said blockchain to their network of users. Additional information is provided in Section 6.2.1.
3. 15% to SyncFab for research, engineering, deployment, business development, and marketing
4. 10% to Founders—Team, Advisors and Early Contributors

5. 30% to Market offered to the public (current SyncFab users and early adopters of the Smart Manufacturing Blockchain)

6.1.2 Partnership Adoption Pool

The Partnership Adoption Pool will contain a pre-allocated amount of three hundred million (300,000,000) MFG tokens from the initial token generation. The goal of the pool is for continued community growth and Smart Manufacturing Blockchain adoption through strategic partnerships incentivisation. The MFG tokens will be distributed to potential partners who will commit to implementing the Smart Manufacturing Blockchain into their current systems. The MFG tokens will be distributed by the Smart Manufacturing Blockchain partners to their current user base to promote adoption and engagement within their own ecosystem. For example, to ease the barrier of entry of adopting a new ordering system, the partner can allocate their current users with 1,000 MFG tokens to start using within the ecosystem and the Smart Manufacturing Blockchain to procure parts production. Theoretically, the users will use this allocated amount to start using, which prevents any loss of business in having to educate and promote user adoption.

6.3 Funding Breakdown

Figure 11 summarizes Smart MFG Tech LTD expected use of proceeds. The breakdown is dependent on the soft-cap of Ethereum (ETH) raised during our token distribution event.

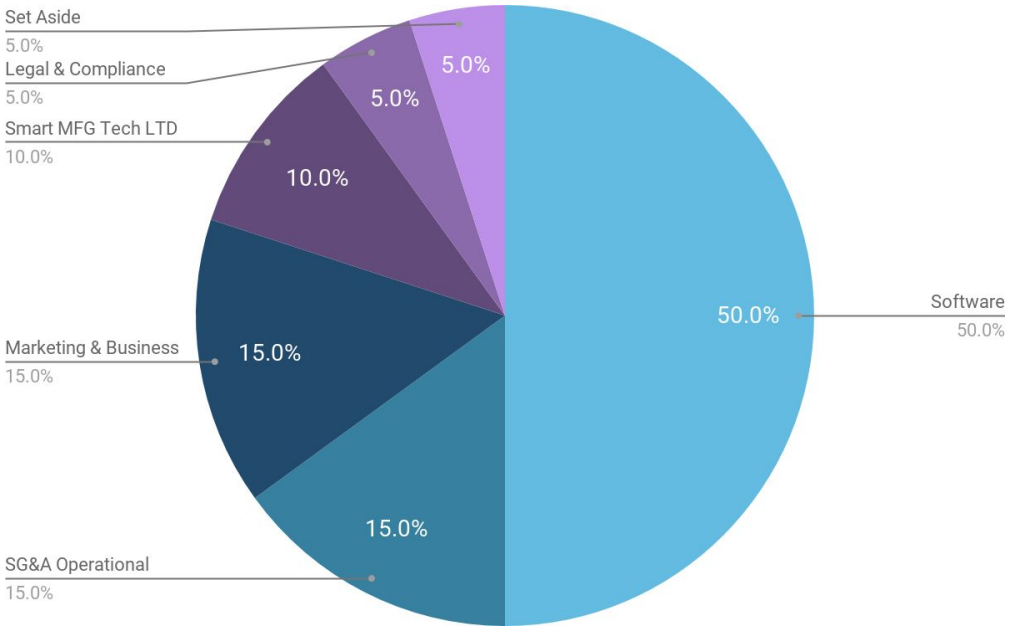


Figure 11: Smart MFG Tech LTD Expected Use of Proceeds

1. Software Development - Create the Supply Chain Blockchain Smart Contract
2. MFG Reserve - Allocated to Smart MFG Tech LTD budget to foster stability and demand for the MFG Token
3. Administration and Operational Expenses - Consists of security, accounting and other associated administration costs
4. Marketing and Business Development - Our marketing efforts include expanding awareness and adoption of the platform while enhancing engagement with current users. These funds will be directed at third-party providers offering marketing, PR, partnerships, and affiliates
5. Legal & Compliance - Legal efforts include among others incorporation, regulation, compliance and ongoing operation
6. Reserved - This is a set aside for unforeseen costs

6.4 MFG Token Distribution Smart Contract

View our Github repository for latest code updates: https://github.com/syncfab

6.5 Reference: Ethereum Smart Contract Standard

View our Github repository for latest code updates: https://github.com/syncfab

7.0 Risk Factors

There are many challenges that can potentially serve as a barrier of entry for mass adoption of the Smart Manufacturing Blockchain in the manufacturing industry, including widespread acceptance of the proposed economic model.

The additional following risk factors apply to SyncFab's business in general and the MFG Token Sale event in particular, and failure of widespread adoption of the Smart Manufacturing Blockchain:

- SyncFab may not reach the target sale amount and may not have the sufficient funds to execute on its business plan.
- The MFG token may be significantly influenced by digital currency market trends and MFG value may be severely depreciated due to non-MFG related events in the digital currency markets.
- Areas of the manufacturing supply chain industry may fall under global or local regulation that may limit the use of tokens for supply chain procurement.
- SyncFab Web 3.0 is a complex software platform, and its launch may be significantly delayed due to unforeseen development barriers.
- Competition may introduce same or better manufacturing supply chain smart contract solutions and cause SyncFab to lose market share and eventually fail to deliver on its business goals.
- The use of MFG tokens may come under the scrutiny of governmental institutions.
- The ownership of MFG tokens may fall under new and unpredicted taxation laws that will erode MFG benefits.
- Smart MFG Tech LTD may not succeed in creating the necessary momentum and acceptance for the MFG token, which may result in low liquidity and depletion of trades.
- The positions and plans outlined in this white paper may be altered as the project progresses.

8.0 Team

8.1 Smart MFG Tech LTD

The Smart MFG Tech LTD promotes new technologies and applications for use within the Industrial Manufacturing industry. A dominating, but not exclusive focus is the promotion of the Smart Manufacturing Blockchain and its related technologies, as well as its promotion of technologies and applications supporting said blockchain. It will work to add partners such as private and public companies, along with government entities to adopt and standardize the Smart Manufacturing Blockchain as a system of records for all manufacturing procurement within the industrial supply chain. For new partnerships, Smart MFG Tech LTD will allocate from their pool of MFG tokens, to be given to new users to source and procure parts production through the usage of the Smart Manufacturing Blockchain.

Carsten Vestergren - Council Member

Carsten Vestergren is an experienced business development/management specialist with clear strategic focus and strong sales skills. He is currently performing as Executive Director at BOS1964 in charge of Corporate Strategy / Branding / Corporate Clients Worldwide from Moscow to Dubai and Cairo. He has more than 15 years strong worldwide professional track record within fields of strategy / marketing and sales.

Carsten is a goal-oriented/result driven manager with an open mind with a passion for my work and a well-rounded background in supporting a progressive organization in optimizing performance and growth, talented within business development, competitive market share expansion, and customer relationship development.

Connect: https://www.linkedin.com/in/vestergren

Ayako Nozaki - Council Member

Ayako Nozaki is a successful international business woman and entrepreneur passionate about manufacturing. Originally from Japan, Ayako has successfully created large scale manufacturing facilities in China/Japan helping large global commercial garments industry clients, such as Hanes, source contract manufacturing services.

Connect: https://www.linkedin.com/in/ayako-nozaki-a08792a

8.2 SyncFab Team

Jeremy Goodwin - Chief Executive Officer

Jeremy is CEO of SyncFab, an IIoT Industry 4.0 Blockchain Manufacturing Industry, partner to the $140MM US D.O.E. & D.O.C. Clean Energy Smart Manufacturing Innovation Initiative (CESMII) appointed by the White House and US Departments of Energy and Commerce National Network for Manufacturing Innovation (NNMI). SyncFab is also the San Francisco Mayor's Office of Civic Innovation - 2016 Startup in Residence (STIR) in partnership with the Cities of San Leandro, Oakland and West Sacramento.

From 2008 - 2012, Jeremy served as Executive President and CFO of China Advanced Construction Materials Company, leading it to peak performance of 2,000 employees and NASDAQ IPO. As the only bilingual member of the company board of directors, he was responsible for negotiating large international contracts, implementing SOX 404 compliance, and managing international accounting audits, SEC and shareholder communications. Jeremy

successfully closed a $100M Private Equity investment offer in support of company expansion plans and NASDAQ listing before board decision to privatize.

From 2002 - 2008, Jeremy was Managing Director of 3G Capital Partners and Global Capital Group - Trans-Pacific merchant banking firms with more than $250M in transactions.

From 1996 - 2002, Jeremy worked as a financial executive at ING Barings, Baring Capital Partners, ABN Amro, Mees Pierson in New York, London, Amsterdam, Geneva, Beijing, and Hong Kong including Carlyle Partners first $1BN Fund.

Jeremy is fluent in Chinese and French and as a social impact entrepreneur, is passionate about technologies improving the human condition.

Connect: https://www.linkedin.com/in/jeremygoodwin

Andy Tong - Chief Strategy Officer

Andy Tong is a entrepreneur well known for his success in the video game industry as CEO and Founder of top online game portal MMOABC, which at its peak garnered millions of monthly MMO gaming visitors from North America with zero spent on advertising before the proliferation of social media. Andy's current role as Chief Strategy Officer involves influencing, maintaining, and fostering relationships with strategic partnerships, investors, and customers. In addition, he achieved great success in the eCommerce referral industry by securing thousands of advertiser partnerships through his portfolio of web portals that leveraged state of the art search engine marketing and deployed browser based advertising technologies with online retail sales totaling over $50 million USD in the last decade.

Andy also serves as President of IVP Investment Group an angel investor in startups and serves on the advisory board for Senhoa. He earned his bachelor's degree in business administration (CIS) from the California State Polytechnic

University in Pomona, California. For over 18 years he has been an avid practitioner of health and fitness. Andy is a supporter of the 2nd amendment and currently resides in Frisco, Texas, with his daughter, wife and pet dog.

Connect: https://www.linkedin.com/in/andyletong

Jay Ligda - Chief Technology Officer

Jay is currently the Chief Technology Office of SyncFab. Jay's responsibilities involves managing a team of developers to maintain, and develop the SyncFab application. Jay is a self-educated technologist who's been in the development community for the last 20 years. For 19 of those years, he owned and managed Synergetic Web Creations Website, which provides consultation for small to medium businesses developing solutions in HTML, Dynamic HTML, Custom Graphics and Animation, Style Sheets (CSS), JavaScripting for Dynamic Content, CGI Script Integration, ASP, SQL Server, PHP, and MySQL.

Connect: https://www.linkedin.com/in/jligda

Dennis Delgado - Chief Design Officer

Dennis Delgado has over 10 years in the art and design world. He has played many roles from gallery director to UI/UX designer. He has curated numerous Art & Design shows with artists whose works are in the collections of SFMoMA, MoMa, Mint Museum, Pompidou, and The Art Institute of Chicago. More recently, he co-founded SyncFab.com, an online platform matching businesses to local manufacturers to help bring ease and accessibility to the product design & production process. Currently, Dennis resides in San Leandro, CA, working with the city to create the first ever Smart Manufacturing grid.

Connect: https://www.linkedin.com/in/dennis-delgado-888b1913

Victor Nguyen - VP Product & Operations

Victor Nguyen is a driven self-starter and professional with a vast skillset and experiences in the startup, public, and private sector, both nationally and internationally. His entrepreneurial mindset and expertise are driven by an obsession to “do what it takes” to be successful and streamlining processes to be as efficient as possible.

Victor graduated with a degree in Civil Engineering and spent eight years designing highways and pipelines while working for the City of Arcadia and Psomas, a private company. His entrepreneur nature then took him into a different direction, away from Civil Engineering and into events, marketing and development. Relocated in Vietnam, he created and operated two companies: I AM Group, an events and marketing company, and Adventuity, a development consultant company. Victor is now back in the United States and a part of the SyncFab team after a two-year tenure at a SaaS startup, SalesHood, where he was responsible for customer success, product management, and operations.

Connect: https://www.linkedin.com/in/victorquocnguyen

Ben Gerstein - VP Marketing

Ben Gerstein has over 12 years’ experience in digital marketing, during which he’s advised fast growing venture-funded SaaS startups and Fortune 50 global consumer product companies in their digital marketing strategy. Ben has helped companies accelerate growth and optimize the customer journey through SEM, PPC, SEO, display / retargeting campaigns, email marketing, social media ads, content marketing, conversion rate optimization, account based marketing and growth hacking.

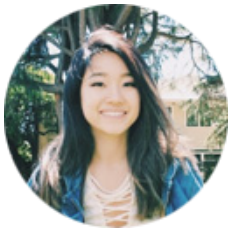
Connect: https://www.linkedin.com/in/bengerstein

Michael Santore - Head of Community Relations

Michael Santore has a decade of experience marketing and developing digital properties. He has a passion for creating positive social impact through the evolution of technology.

Connect: https://www.linkedin.com/in/msantore/

Sharon Wang - UX Designer



Sharon Wang is a UX/UI and graphic designer based in the Bay Area but originally from Los Angeles. She has a passion for human-centered design as a way to help others.

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Tam Du - Blockchain Engineer

With a strong sense of responsibility, without fear of difficulties, and with a passion for IT, Tam has embraced hands-on experience in a wide number of fields including IT consulting, team management, programming, server administration, User Interface and User Experiences design. He desires to take up a challenging career with honesty, loyalty, good relationships and excellent performance. Tam wants to translate his experience, knowledge, skills, abilities into values for a team to help deliver a number of quality products and obtain a position of responsibility, using his skills to

efficiently communicate efficiency his ideas and views and commit himself to achieving organizational objectives through team effort and a positive attitude.

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Ali Zain - Blockchain Developer

Ali Zain has over a decade of experience in Full-Stack application development. He is an expert in blockchain, cryptocurrency & ICO development. He also co-founded Ideofuzion.

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8.3 Advisory Board

Mike Jones - Science Inc.

Mike Jones is an internet executive, investor and strategic advisor and CEO of Science, Inc. He is Los Angeles's most active angel investor with more than $2.5B in exits. His exits in 2016 alone included Science portfolio companies HelloSociety (acquired by New York Times), FameBit (acquired by Google) and Dollar Shave Club (acquired by Unilever). He is also a long-time entrepreneur. He started his first company in college, and he was previously the CEO of Userplane (acquired by AOL), Tsavo (acquired by Cybermedia), PBJ (acquired by JB), MySpace (acquired by Specific Media), Myspace Japan (acquired by Softbank), and FIM (acquired by Rubicon Project).

Connect: https://www.linkedin.com/in/mjones

Gil Penchina - Ridge Ventures

Gil Penchina is a serial entrepreneur, super angel and Partner at Ridge Ventures. He's an investor in Brave, Ripple, Filecoin, Civic, EOS and was actually an angel investor in the first cryptocurrency startup, PayPal in 1999. Previously he was the founder of Flight.vc which manages over 25 investment syndicates with over 3,000 angel investors, a co-founder of Fastly, CEO of Wikia, now a top 50 website and was a member of the pre-IPO team at eBay. Before eBay, Gil worked at General Electric, Bain & Co. and started two small technology companies. In addition, Gil has been an active angel investor in over 300 companies including firms such as Dollar Shave Club, Cruise Automotive, LinkedIn, PayPal, AngelList, AltSchool, eShares, Wealthfront, Indiegogo, and many others.

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Alan Safahi - ZipZap

Alan Safahi is the Founder and CEO of ZipZap, Inc., a payment platform for moving money around the world. Alan is a serial entrepreneur with nearly 30 years of hands-on experience in the information technology, telecommunications, financial services/Fintech industries and the first advisor to the CEO at Ripple Labs. Alan has successfully created and managed numerous high technology and payment processing startups.

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Mark Crone - CLG LAW

Mr. Crone is the Managing Partner of Crone Law Group, specializing in the corporate, securities and other regulatory aspects of global business ventures across a diverse array of industries between companies in the U.S. with Asia, Central and South America, Russia, Africa, Australia and the Middle East.

With almost twenty-five years of global legal, corporate and investment banking experience, Mr. Crone represents both U.S. and foreign corporations across a wide range of industries. His broad experience includes public and private equity and debt security financings, international mergers and acquisitions, angel, venture capital and private equity financings, project finance, banking and financial instruments, secured debt transactions, going private transactions, foreign direct investment and corporate law and governance.

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Michael Wong - MUFG

Michael Wong is an experienced cyber security expert and leader in the financial services industry, working with teams to balance security and business objectives. As VP at MUFG he led the development of the cybersecurity program for System & Endpoints and was instrumental in the creation of the Cyber Security Operations Center (CSOC). Prior to MUFG, Michael has consulted for Fortune 100 companies while at KPMG and data analytics with the Walt Disney Company.

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Chris Cheng - Apple

Chris Cheng is a senior mechanical product designer with expertise in consumer electronics and medical devices. He values a detail- oriented and user-centered approach to design with an eye for aesthetics. He is comfortable working with senior management and cross-functional teams. He worked in startup garage to Fortune 500 company and was a co-inventor on 6 issued patents.

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9.0 Changelog - White Paper Versions & Edits

1. 09/18/2017 - V1 Public Release
2. 09/19/2017 - V2 Expanded on Sections 1.2.4, 2.1.3, 6.1, and 6.2
3. 09/20/2017 - V2 Expanded on Section 3.6, Added Mark Crone to Section 7.3
4. 09/21/2017 - Added Michael Santore to Section 7.2
5. 09/29/2017 - Added Mike Jones to Section 7.3
6. 10/09/2017 - Added Gil Penchina to Section 7.3
7. 10/11/2017 - Clarification of terminology per lawyer's comments (numerous sections)