balehu

Powering Commerce

White Paper v2
Summary

Overview

SMBs (small to medium-sized businesses) are the foundation of every local economy. In the U.S. alone, they account for 46% of GDP. Yet due to major changes in the economic landscape over the last few decades (including and especially the rise of chain and online retailers), those businesses are struggling. It's no wonder that 50% of businesses fail in their first five years.

We already know cash flow is at the heart of this problem for SMBs. Improved cash flow would better equip businesses to meet many of the most significant challenges they face in today's market, from hiring and retaining employees, to managing healthcare costs, to growing their customer base. The problem, however, is that the economic incentives of consumers, SMBs and other actors in towns and cities around the world simply aren't aligned. Let's unpack the individual challenges inside this misalignment:

- Local consumer spending fuels infrastructure improvements, which in turn generate a 300% return on consumer spending.
- Consumers are unaware that transacting with chains, franchises, and online retailers cuts funding for local infrastructure by 50%. Without local consumer spending, economies shrink.
- SMBs know what goods and services consumers want and what price to charge for them, but they're unable to deliver a comparable shopping experience to chains and franchises.
- SMBs struggle to drive repeat business at scale.
- Technologies exist to help SMBs modernize and improve consumer experiences. However, SMBs cannot invest in switching solutions and training.
- The largest generation in U.S. history has as many as 30 loyalty programs at their disposal to incentivize spending; yet consumers are unable to use those programs with the more than half of U.S. small businesses that do not accept credit cards - a $100 billion missed opportunity[1].
- Without automation, SMBs are unable to scale customer service, resulting in negative consumer experiences (e.g. missed sales, customer education, etc.)

But what if it didn't have to be this way? What if we could create a new growth engine for these businesses? What would sustainable SMBs mean for economic growth? How would local communities benefit? Clearly, a new method of commerce is needed. That method is Balehu.

Balehu aligns consumers, SMBs, and other actors to realize shared benefits for local communities. How do we create this alignment?

---

[1] GoPayment Survey Estimates $100 Billion in Missed Sales for Small Businesses that Deny Plastic: https://investors.intuit.com/press-releases/press-release-details/2012/GoPayment-Survey-Estimates-100-Billion-in-Missed-Sales-for-Small-Businesses-that-Deny-Plastic/default.aspx

- Remove the middlemen in commerce and advertising. Allow network members to maintain privacy while transacting, and incentivize them to remain good actors.
- Create usage ubiquity by enabling various peer-to-peer transaction use cases.
- Give reputation a financial impact: the higher the score, the lower the transaction fees.
- Drive cash flow for merchants, so they can invest in growth.
- Give merchants control over consumer incentives: i.e., incentivize consumers to consume locally.
- Provide the same growth tools that chains and franchises use, including the ability to geo-target consumers based on behavior.
- Make growth marketing effective by targeting consumers on their mobile devices using their anonymized shared preferences and purchase history.
- Help SMBs provide mobile shopping experiences that consumers expect.
- Bring blockchain and cryptocurrency to consumer mobile devices using DAG.
- Let the most active users of a cryptocurrency determine its future utility.
- Incentivize consumers to invite friends and family to the network.
- Provide real-time feedback to consumers on their individual and collective impact on local communities.
- Provide a wallet with fiat and cryptocurrency, along with our own exchange to drive them.
- Create shared accountability for key existing commerce functions — reviews, reputation, notaries, escrow, etc. — through a protocol designed for ease of use and incentivized with rewards.

Individually, each of these challenges represents a billion-dollar opportunity in the U.S. alone. But the future of how commerce is done isn't about shifting individual behaviors, which won't address the root cause of SMBs' problems. Instead, it depends on overhauling the entire experience to correct the alignment between businesses and consumers. Balehu will accomplish this goal through distributed app experiences, powered via our new protocol and cryptocurrency incentives secured through blockchain technology.

How will we deliver a protocol that scales to take on a multi-trillion-dollar opportunity?

- Leverage consumer mobile devices via DAG to shard network transactions.
- Provide our own Wallet and Exchange, which allow for the use of both fiat currency and cryptocurrency.
- Open the protocol for innovation by third-party developers.
- Leverage existing infrastructure and projects while focusing on research and development of our future protocol.
- Ensure consumers have confidence in the buying power of the currency by creating a network model that exhibits low volatility without compromising the motivations of investors.

- Provide unified marketing templates and reporting to help SMBs across markets and industries understand opportunities for improvements.
- Reduce overhead for merchants by lowering transaction fees and making growth tools affordable.
- Provide our own distributed exchange, with greater security for the consumer.
- Give the most active token users the ability to prioritize the capabilities of the protocol.
- Ensure the network organically prevents bad actors.
- Implement viral and multiple network affects that draw actors to the network and make leaving undesirable.
- Ensure fast transaction speeds by leveraging and incentivizing a consumer's social graph to process them.
- Allow any actor to activate any other actor in real time.
- Integrate and partner with existing technology providers.

Balehu will create revenue by enabling commerce in order to drive transaction fees:

- Monetize premium software features based on tiered usage.
- Charge third-party developers based on tiered usage.
- Charge peer-to-peer and business-to-consumer transaction fees.
- Charge brokerage fees for moving in and out of network.

Overview **2**

Protocol **6**

Why Blockchain? 9

Use Cases 10

Functionality 12

Wallet 12

Marketplace 14

Growth 19

Token (BAL) **21**

Utility 22

Protocol

Most protocols rely primarily on decentralization to provide benefits like transparency and availability to their networks, but they miss opportunities for shared transactions based on locale and social graph. The ultimate goal is to originate new scalable infrastructure, using mobile devices as the hardware wallet and method of transaction validation within the local social graph of token holders. This approach is not without trade-offs, but with the proper incentives, it does provide a natural means to scale based on usage. Furthermore, this model is aligned with the hyper-local vision of the protocol.

Nevertheless, our stakeholders require a practical approach in the interim. For this reason, we will initially launch the protocol using existing infrastructure, including an ERC20 token on the Ethereum blockchain. The following components of the protocol play a role in leveraging proof of stake consensus, once generally available:

1. Reputation as a proxy for stake
2. Social graph based validation sets

Aligning incentives among actors in the network requires trust. To that end, all actors can build a reputation in our network. Initially, our token will play a role in contributing stake during the cold start period of the network. Payouts on stakes would return to Balehu. In the future, network members will stake themselves using fiat currency until their reputation score reaches a level where transaction fees are low enough, or their social graph of validators is large enough (or both).

Reputation will be driven by transaction history and reviews that live in the blockchain. Network members may optionally share their reputation score and other data about their profile with whomever they choose. Access to a reputation score may or may not be required in order to complete a transaction. In the case where reputation score is not shared, Balehu may not stake the transaction on behalf of the network member. Reputation can be grown over time for any actor in the network. The higher the reputation score, the more Balehu will be willing to stake on a member’s behalf.

The transactions themselves can be witnessed by a third party: a network member outside of the social graph of either party in a transaction. Witnessing a transaction is similar to the function of a notary in the U.S.: when a notary witnesses a transaction, he or she is compensated with a transaction fee paid by both parties in using a smart contract. The transaction then serves as an opportunity for two reviews of the witnessing party by the transacting parties. The presence of a witness in a transaction may significantly lower the stake of a transaction. Similarly, a high reputation score on either side of a transaction may also significantly lower the stake of a transaction, even without a witness.

As previously stated, our protocol relies heavily on social graph. Initially, the protocol will be unable to shard itself based on social graph; however, our long-term intent is for transaction validators to exist inside the social graph of a network member. This means that we will be able to:

- Economically incentivize network members to invite and activate new network members from their social graph;
- Shard validation activity by constraining the validation set to the social graph of the "consumer side" (demand side) of a transaction in the best case, or the merchant (supply side) in the worst case;
- Perform validations on mobile devices in near real-time; and
- Benefit from the security features of modern mobile devices to authenticate transactions and increase reputation score in real-time.

These optimizations will enable us to organically grow a validator set to match the transaction volume in a given market. Where edge cases appear (for example, the set size of a given social graph is not large enough to meet the transaction volume), the set of validators will be modified to include merchants involved in the transactions or capacity outside the social graph of the set of pending transactions. In these edge cases, validators are incentivized as if they were a member of the social graph set.

Initially, we will follow the proof of stake model provided in the Ethereum blockchain. However, our goal is to modify that model to better align actor incentives in local economies as discussed above. Other consensus algorithms and infrastructure (e.g. Eos) that support our requirements may emerge by the time we implement this portion of the protocol.

Our protocol includes the following actors and components:

Consumers
Any token holder may play this role. The consumer is the party in a transaction that is trading currency for goods and services - representing the demand side of the market.

Merchants
Merchants are small businesses providing goods and services to consumers, whether digital or traditional, retail or otherwise. Merchants represent the supply side of the market.

Notaries
Notaries are trusted third parties hired by any two parties wishing to certify that a transaction took place. Benefits of requesting a notary to witness a transaction include reduced transaction stake and the prevention of disputes.

Developers
A skilled professional capable of either contributing improvements and new functionality to the protocol itself, or creating their own applications powered by the protocol.

Skilled Professionals
Skilled professionals may be technically considered small businesses; however, in our network, these individuals or small teams provide services to merchants or consumers.

Smart Contracts
For many common use cases like crowdfunding, professional services agreements, etc., we provide starting points that consumers can use with any two network members.

Reputation
Each actor in the network develops a reputation. This score forms an index used to determine transaction fees as well as the need for escrow or a notary in a transaction.

Reviews
A key components of the platform, reviews are associated with both transactions and members. Reviews are used to help determine reputation, which affects stake required for transactions in the network.

Oracles
While not part of the protocol itself, Oracles information and utility services will be made available for Developers to simplify the development of decentralized applications.

Why Blockchain?

We feel strongly that no mechanism that facilitates the alignment of economic incentives in local economies currently exists. In the case of commerce, we know that small businesses are the foundation of our economies; yet we have no means to support them because there is no way to align economic incentives among stakeholders that can impact the status quo. As a result, there is no consumer loyalty program, new marketing process or technology, or social awareness campaign that can affect the change we feel is necessary.

The path of least resistance is often the best approach. Blockchain technology allows us to create a network with incentives that require no change in an actor's behavior. Instead, a blockchain and token shift current actor behavior into outcomes that are sustainable and add value to the network's members.

Nevertheless, blockchain in and of itself is not enough, which is why we plan to implement additional functionality which securely and scalably operates on personal mobile devices. The security and computational power of today's mobile devices complement both the needs of our network and the experience of today's consumers[2]. A transparent, decentralized, verifiable transaction history provides security, privacy, and high availability.

The creation of a single token for commerce (BAL) will enable us to economically incentivize actors toward actions that sustain and grow the network. By creating incentives that support small businesses (merchants), we can positively impact our communities in numerous ways, all of which grow the network and add value for its members.

All Balehu token holders must have a unique wallet that is created during onboarding. Only the token holder has access to their wallet, and therefore no other party may perform financial transactions on their behalf. A Balehu token holder may wish to keep their tokens in their Balehu Wallet, or store them off-network and manage their public and private keys. Transactions made by token holders are encrypted and recorded in the blockchain. User wallets are also encrypted, and their association with user profiles is minimized for privacy. Only the developers of the Balehu can identify wallets connected to the network in cases of troubleshooting. All personal user data, including passwords, emails, and wallet IDs, is encrypted. This protects token holders from security issues. Balehu respects privacy, and does not sell any information to third parties (including advertising companies). In an effort to protect user accounts, Balehu strongly encourages the use of two-factor authentication for account access.

[2] The 4 Best Phones for Privacy & Security:
https://smartphones.gadgethacks.com/how-to/4-best-phones-for-privacy-security-0176106/

Use Cases

Currency for Daily Use
Token holders may redeem tokens for goods and services at participating Balehu merchants, as well as exchange them with other members. Additionally, token holders will be able to trade them externally on cryptocurrency exchanges.

Reduced Transaction Fees
With the flexibility to pay for a purchase in part or whole with Balehu tokens, merchants enjoy a reduction in credit card processing fees. Merchants are encouraged to recommend the use of Balehu tokens as the exclusive method of payment.

Transition from Cash-only
Nearly 55% of the 27 million small business owners in the U.S. do not accept credit cards as a form of payment[3]. For merchants that do not accept digital currencies as a form of payment, Balehu provides a significant growth opportunity.

Consumer Loyalty & Rewards
Balehu tokens encourage impulse purchases, which account for 30-70% of sales[4]. With 2017 consumer spending in the U.S. at over $47.5 trillion, and using the conservative figure of 30%, approximately $14.2 trillion was spent on impulse purchases in 2017[5]. 90% of consumers will purchase an item they did not initially plan to purchase. In the case of Balehu merchants, a a customer who has Balehu tokens has a 40-70% chance of using their available tokens to make a purchase[6].

Research conducted over a three-year period shows that 80% of millennials participate in loyalty reward programs. Among millennials, 45% will utilize coupons and loyalty points when available, which represents a meaningful growth opportunity for Balehu merchants. Furthermore, nearly 52% of millennials prefer to use their mobile devices to take advantage of loyalty rewards applications[7]. Millennials represent the largest generation in U.S. history at 92 million, and they are in their peak purchasing years. Balehu is uniquely positioned to provide the purchase experiences millennials expect. The total estimated spend by U.S. merchants on

---

[3] McCue, T. (August 16, 2013). Forbes.com - Why Don't More Small merchant Accept Credit Cards: https://www.forbes.com/sites/tjmccue/2013/08/16/why-dont-more-small-merchants-accept-credit-cards/
[4] Gaille, B. (May 22, 2017). 19 Dramatic Impulse Buying Statistics: https://brandongaille.com/18-dramatic-impulse-buying-statistics/
[5] United States Consumer Spending 1950-2018: https://tradingeconomics.com/united-states/consumer-spending
[6] Customer Loyalty: The Ultimate Guide by Sophia Bernazzani
[7] Carter, B. (June 19, 2017). Millennial Loyalty Statistics: The Ultimate Collection: http://blog.accessdevelopment.com/millennials-loyalty-statistics

customer loyalty rewards as of 2015 stands at $16.1 billion[8], but those programs have failed to deliver for small businesses. In fact, the average consumer today joins up to 30 loyalty programs on average, yet 76% of them do not use their incentives[9]. That represents billions of dollars that merchants invest without a return. To make matters worse, there's no easy way for consumers to keep track of the benefits that they're missing.

Marketing

Consumers in the Balehu network can be surveyed to provide information merchants can use in targeting and personalization for activities like advertising campaigns. Consumer reviews, demographic information, purchase history, etc. can be purchased directly by the merchant, rather than a third party. Consumers are more likely to trust local brands with personal information that improves their experiences.

[8] Intellective Group, St. Louis, Missouri (July 2016). Incentive Marketplace Estimate Research Study: http://www.incentivefederation.org/wp-content/uploads/2016/07/Incentive-Marketplace-Estimate-Research-Study-2015-16-White-Paper.pdf

[9] Code Broker, The Nielsen Company

Functionality

Applications powered by the protocol have a decentralized foundation and enjoy the benefits that foundation brings. As an operating system for local commerce, we allow third parties to create innovations beyond our core suite of functionality.

Wallet

Today, most smartphones are equipped with personalized security, cryptographic technologies, [10][11] and enough processing power to rival laptop computers. Now is the time to leverage the accessibility and capability of these devices as the foundation for a shift in commerce. Balehu will be available on smartphones and will take advantage of features like Face ID (available on Apple's iOS) to help secure a network member's wallet. Along with the hardware that our target consumers already have in their wallets will be methods of backup, e.g. offline codes that can be documented on paper or the like, so that their data and token can be recovered or migrated to a new device.

By default, personal information is not available to other network members. All technology on the platform functions with complete anonymity of the network members. Network members may choose to share information in their profile in order to improve the experience and the protocol. Balehu cannot sell any information to third parties because there is no individually identifiable information.

Because applications are dependent on a unique device and its native functionality (e.g. Face ID) for security purposes, the existence of fake users on the network is very unlikely. In order to take action in the network, a bad actor must not only pass a secure setup and onboarding process, but also steal the identity of an actual person. While this scenario is not impossible, it is far less likely than identity theft scenarios common today. Every wallet requires the setup of a paper recovery system, such that in the event of the loss of a device, a new device can be set up, new recovery codes created, identity verified, and wallet restored.

The Marketplace app will provide point-of-sale and peer-to-peer transaction functionality using QR codes and a seamless integration with the Wallet. In the future, a debit card will complement the protocol, providing an alternative to a mobile device at point of sale.

Other key app features and functionality include:

---

[10] About Cryptographic Services: https://developer.apple.com/library/content/documentation/Security/Conceptual/cryptoservices/Introduction/Introduction.html

[11] Encryption: https://source.android.com/security/encryption/

Currency Balance
The wallet will initially focus on two currencies: Balehu Coin and the local fiat currency. Once the Balehu Exchange is generally available, the balance of either currency can also be managed directly in the wallet.

Additionally, the wallet will show the estimated amount of currency that has been redirected back into the local community by the token holder and their social graph.

Exchange Rates
Even if the buying power of the token should suffer from enjoys low volatility, network members' ability to see the average exchange rate in real-time will help them understand the value of the token vs. their local fiat currency.

Transaction History
All attributes of a transaction are available to the user for review, including amount, transaction status, merchant, data / time stamp, etc.

Receipts
Receipts are one of the ways that high quality goods and services can be reviewed and shared with others inside a token holder's social graph. Receipts contain an itemized list of purchased items, as well as personalized offers from merchants.

Sharing of offers or experiences with a consumer's social graph increases reputation score when token holders in their social graphs make subsequent purchases.

Reputation
Token holders can leave reviews for merchant goods and services, or review any other in-network transaction. Any posted reviews can also be viewed along with their reputation score.

Reputation can also be improved by increasing spending with local merchants, developers, or skilled professionals.

Taxes
The network's exchange rate at the time of transaction, as well as the public key of the actors in a transaction, are logged for the benefit of the transaction. The token holder can submit any tax documents to the relevant authorities with ease so as to remain compliant with local or national regulations.

The remittance of applicable local taxes also contributes to reputation score.

Multi-factor Security
Most mobile devices include proprietary security features. The wallet will support these, along with device-agnostic security methods, to ensure that the actual owner of

the device is in possession of the currency and personal data.

Marketplace

The marketplace app is designed to be the destination for merchants and consumers to perform the use cases the protocol supports. Merchants will integrate their existing business systems with Balehu in order to benefit from the marketing and sales functionality that Marketplace provides. Consumers, meanwhile, will enjoy personalized incentives and experiences from local merchants. The Marketplace app seamlessly integrates into the token holder's Wallet.

Discover
Consumers can use a map and current location, or perform a criteria-based search to identify new merchants, special offers, etc. Consumers can also follow friends in their social graph, merchants, industries, or even neighborhoods to further personalize their experience. Based on behavior and any data a consumer is willing to share, the app will make recommendations about offers and experiences they may enjoy. Additionally, offers or experiences that other token holders (in or outside of their social graph) chose to share may be reviewed.

To further personalize a member's experience and grow economic incentives, the Marketplace will suggest fellow consumers you may know who are not yet activated.

Example:
Marie, a consumer, makes several purchases in her neighborhood. The following week, Marketplace sends a push notification suggesting various relevant experiences another consumer, Karen, has enjoyed. Marketplace then personalizes an offer for Marie. After Marie purchases the recommended offer, her social graph is notified about her review of the experience.

Account Management
Consumers can manage which personal data from their profile is shared with merchants during point of sale or in order to take advantage of promotional offers.

Example(s):

1. A merchant may incentivize past customers to share their purchase history in order for the merchant to make special offers to drive repeat purchases.

2. A merchant may incentivize consumers to share their reviews, so that merchants can better understand personal preferences and tailor offers for the consumers.

Group Shopping
The combination of delivery from local merchants and the ability to order using a group of friends is a novel experience not otherwise available to consumers.

Example:
Joe's Grill, a merchant, can offer a special discount to token holders within a square kilometer of their restaurant if and only if more than twenty consumers claim the offer and patronize the restaurant by a certain time of day. This group purchase would fill the Joe's restaurant, with each token holder placing their respective order and receiving the promised discount.

Inventory Management
Merchants can enable e-commerce functionality in the Marketplace app using supported integrations with inventory management systems. Additionally, inventory can be created using the app in order to benefit from the other Marketplace functionality.

Example(s):

1. Marketplace recommends a liquidation sale based on the age and amount of a good currently on hand. A template campaign is also included in the recommendation. The merchant (or a skilled professional engaged to manage the campaign) may then customize and launch that campaign.

2. A local farmer prepares promotions for the week by taking videos of her fresh produce using the Marketplace app. In a few minutes, the inventory can be added via the app, and the Merchant is ready to use Growth to promote the video and offer to new and repeat customers.

Customer Service
Merchants can engage customer questions and, optionally, enable an artificial intelligence-powered customer service bot to provide recommendation and transaction support if the merchant has the relevant integrations. Consumers can interact with bots using Facebook Messenger, SMS, and other apps they already use.

Example:
Late one night, Ryan, a consumer, wants to know whether his local convenience store

Reporting
Merchants will be able to review, analyze, and export a sales history to generate insights about consumer purchase behavior for their business.

Example:
Anna, a merchant, has been experimenting with some Growth campaigns for her restaurant. The advertising report helps her understand (anonymously) where her customers live and what their demographics are. Based on this information, the report

has cereal in stock. He opens Marketplace, selects the nearest convenience store, and is able to initiate an on-demand chat with a customer service bot, which has access to inventory. He then purchases the cereal in advance. Later, bot confirms that the cereal is in stock, and when Ryan is walking by the store, a push notification reminds him to pick up his order.

Reviews

Only a token holder can review another actor in the network. While reviews themselves cannot be sponsored, validators are compensated for validating (signing) reviews. As in any network, all token holders have a reputation. Those with poor reputations may incentivize others to transact with them and deliver value in order to improve their reputation. As with networks like LinkedIn, those who unfairly review others can be conspicuously observed because reviews given and received, along with number of transactions witnessed, are available in profiles. Reviews may also be signed by third parties. In this way, reputation behaves similar to stake, representing an actor's future behavior. Networks like Yelp and TripAdvisor struggle to generate consumer reviews; Balehu, on the other hand, is able to incentivize them.

Example:
A consumer visits a local restaurant and enjoys a meal with family. Once the consumer leaves the restaurant and isn't driving, Marketplace sends a push notification asking the consumer for the review. The restaurant has a special offers for reviewers, so the consumer is excited to have a discount off a future meal. The consumer submits a review, and a family member notarizes that

suggests tactics for incentivizing customers to return, surveying past customers for more personal information to improve her offers, and attracting new customers.

Promotions

Consumers can discover special offers using the promotions feature. Merchants may take advantage of email, push notifications, or text messages in order to reach a consumer on their preferred medium. Various programs and offers are available for merchants to choose from using the Growth app.

Example:
A merchant may choose to implement a referral program. Consumers can share an offer with their social graph and earn a transaction (referral) fee when their friends purchase.

review. The merchant has incentivized both of these actions, and the participants have staked their reputations on these actions.

Point of Sale & Wallet Integration
The hardware wallet is seamlessly integrated into Marketplace, enabling consumers to transact using their currencies at point of sale or via e-commerce, if supported.

Example:
Marketplace can be used on a mobile device at point of sale to capture transactions and either educate the consumer on the product being purchased, or incentivize them to make a repeat purchase with a personalized offer that's transmitted to the consumer's app. Once a transaction is complete, Marketplace may also incentivize a consumer review and update the inventory on hand to support supply chain management and ensure consumer experience.

Cart Abandonment
For supported merchant services platforms, Growth can create personalized offers for items that were browsed, but not purchased.

Example:
A consumer visits a merchant website or their Marketplace store. Items that were saved for later or added to cart can become the subject of a personalized promotion. In the near future, the consumer receives a personalized offer in the Marketplace app which drives the consumer to transact at point of sale or have the item delivered to their home.

Developer
Third party apps created by developers may be made available for use either inside the marketplace app. or as a standalone native app on Android or iOS operating systems.

Example:
A developer creates an app for consumers that identifies reviews on the Balehu network that enhance discovery for other consumers. Balehu would leverage the usage and reviews data of that app to determine which were featured in the Marketplace app as useful experiences for token holders.

Subscriptions
To generate predictable cash flow and convenience for the consumer, merchants can offer to subscribe consumers to goods and services (powered by smart contracts). Consumers can manage their subscriptions in the marketplace app. Consumers may choose to collect their goods, have them delivered using Gig, have the merchant ship them.

Example:
A consumer can subscribe to eggs from a local farmers market, and a Gig professional can deliver them on a weekly basis (with preferences managed by the consumer in the marketplace app). In a single transaction, the consumer can pay both the farmer and the delivery person, or the farmer can hire the

delivery person and directly offer a subscription to consumers.

Offline-to-Online Buying
To grow cash flow and offer convenience to consumers, merchants can offer to ship previously purchased items to consumers.

Example:
Similar to subscriptions, a consumer can take one step short of this commitment and simply add convenience to shopping for items they already enjoy. Using Marketplace, past purchases spanning multiple merchants are available for purchase and scheduled delivery.

Upsell / Cross-sell
Special offers can be made in real-time or in the future to consumers based on recent purchase history. Merchants can create bundles that enable personalized recommendations of related goods and services consumers should buy based on past purchases.

Example:
Andy, a consumer, buys toothpaste every three weeks for a nearby convenience store powered by Balehu. After six months, Marketplace suggests 20% off of a selection of toothbrushes and an alternative organic toothpaste that is slightly more expensive than the brand Andy normally buys.

Notary
For a fee (shared by both parties in a transaction), notaries can be requested to witness a transaction. Notaries can be any network member outside of the immediate social graph of any two transacting parties.

Example:
A merchant hires a professional developer to build an e-commerce website her retail store. The developer would create a smart contract for an agreed-upon statement of work. Upon delivery of the website, the notary would confirm completion of deliverables and sign the smart contract, releasing tokens held in escrow.

Taxes
Following local regulations, merchants can collect sales tax and other taxes automatically using Marketplace. Taxes can be collected in either fiat currency or tokens, which can be converted for free for this purpose. Merchants can specify the business rules in their markets.

Example(s):

1. An office manager joins Balehu following an invitation from friends. She frequently makes personal and business purchases using the promotions available to the network, including deliveries. At the end of the month, Marketplace sends her a push notification asking her to confirm the categorization of her purchases (business or personal), so that she can ensure that her annual tax documents accurately reflect business

and personal expenses.

2. In a hypothetical market, a consumer makes a food purchase at a local store. Later, the consumer decides to have the same meal delivered one Saturday for lunch. In the first transaction, a sales tax is collected based on the subtotal of the transaction. However, in the second transaction, no sales tax is legally required because the transaction occurred via the internet.

Growth

Merchants spend the majority of their day serving consumers or preparing to serve consumers. Any free time they have available is never enough to focus on growth activities for their small businesses. Typically, the skill sets and experience needed to perform those activities at scale is not the passion of the owner / operator.

Equally important, consumers are always ahead of merchants in adopting new ways of interacting with their world, which includes shopping experiences. The Growth app exists to bridge the gap between the strengths of the merchant and the desired experiences of the consumer. Skilled professionals and developers add additional value to this opportunity as well.

The Growth app focuses on several aspects of revenue generation:

Marketing

- Brand Awareness
- Customer Acquisition
- Consumer Education
- Customer Loyalty (Repeat Purchases)
- Social Media
    - Word of Mouth Referral

Sales

- Salesperson Enablement (Pre-Sales)
- Inventory Management

Growth contains several key capabilities. Either the merchant or a skilled professional can action these capabilities as needed to drive outcomes.

Campaigns
Campaigns are targeted marketing activities that can be manually or automatically performed on behalf of a merchant to drive growth. Campaigns can be performed on the web using email, SMS, push notifications, social media, and display advertising.

Merchants can use Templates to determine which outcome they desire from a campaign. Campaign targeting can be performed with numerous consumer behavior criteria including, but not limited to:

- Location (current, past, predicted, proximity to a point of interest)
- Reputation
- Purchase History
- Preferences
- Social Graph
- Demographics

Using campaigns, merchants can incentivize consumers to transact using a variety of tactics. For example:

- Sending tokens (similar to gift cards) to prospective consumers, which can only be collected at point of sale or with other restrictions (e.g. reputation score);
- Offering discounts for a limited time;
- Personalizing pricing for consumers based on specific criteria like purchase history;
- Using web advertising to drive brand awareness within a specific demographic or other target criteria;
- Geo-fencing offers to create scarcity;
- Limiting the number of token holders that can claim an offer;
- Referring a token holder's social graph network;
- Dynamically lowering pricing when groups of consumers purchase within a given time window;
- Surveying token holders for (anonymized) demographic information (used to improve relevance offers).

Campaign content can include live streams of information about available products and services. Our goal is for merchants to be able to use their mobile devices to build relationships with local consumers to drive new and repeat business.

Templates
Growth templates are similar to recipes that can be followed by merchants themselves, skilled professionals from the Gig network, or Balehu's Merchant Success team. Balehu will originate

new templates over time, following its go to market strategy, which calls for a focus on individual industries and markets in a stepwise fashion.

Insights

Business reporting and analysis are exactly what merchants need to understand the drivers of growth. The Balehu Merchant Success team and / or skilled professionals from the Gig network will work with merchants interested in converting insights into action. The reports available will vary by industry, and include marketing, sales, supply chain, and employee performance. Integrations with popular software tools mean that we do not need to recreate adopted solutions; instead, we intend to leverage data provided by those solutions to make action possible.

Token (BAL)

BAL is a new cryptographic token initially being issued on the Ethereum blockchain following the ERC20 token standard. The Ethereum blockchain is currently the industry standard for issuing custom digital assets and smart contracts. The ERC20 token interface allows for the deployment of a standard token that is compatible with the existing infrastructure of the Ethereum ecosystem, which includes development tools, wallets, and exchanges.

Blockchain alone has many benefits; however, our network includes a token because we believe that a protocol with a decentralized currency component enables us to align incentives around shared benefits for local communities. This alignment is the remedy for the challenges of small businesses and the poor experiences consumers have in local marketplaces today. Our network's growth is not determined by the volume of transactions or transaction velocity. Instead, it's determined by the number of merchants that have joined the network. The inflationary model of our network would otherwise be highly susceptible to volatility if, for instance, speculators liquidate large amounts of tokens, or the metric that determines network health were in any way tied transaction-based metrics. To avoid this, we focus our accountability on the number of merchants who have joined the network, slowly inflating the currency as more merchants benefit from functionality of the protocol.

Given our thesis, the number of activated merchants metric is the best index for network growth. Transaction volume will vary based on industry, market, season, strategy of the merchants, and behavior of consumers in a market. As a result of this complexity, we focus instead on growing the number of active merchants in a market using the Balehu protocol. We are comfortable with this assumption because merchants that add value will remain in business over time (generating transactions all the while). Transaction volume varies for numerous reasons, and is not a healthy metric for the network. If Balehu saturates a market, region, or country, the appreciation of the token will plateau during those periods. As we enter new markets, there will be a positive shift in token value. In this way, the merchants activated metric behaves like an index independent of practical matters like seasonality, which would otherwise negatively impact consumer buying power in certain locations and at certain times of year.

Directly tying the token value to goods and services means that consumers always understand the practical utility of the token for daily use (and therefore do not perceive it as primarily a store of value). Similar to fiat currency, spam is unlikely because no token holder would intentionally waste their currency due to its value. Furthermore, the use of a single token for the entire network, rather than dynamically creating tokens on a per-merchant or per-initiative basis, simplifies the interaction model for all use cases. For example, loyalty and rewards systems today lack portability, practical utility, transparency, and merchant control. Using a single token for other use cases including cash, discounts, gift, travel and entertainment, etc. means that consumers do not have to worry about exchange rates, which is currently a problem across consumer loyalty rewards networks today. Merchants, rather than third parties, can determine

the price of goods and services, along with economic incentives available in promotions. Merchants can also drive demand by creating scarcity through promotional offers with a currency that is easy for consumers to use.

Because voting utility of the token is tied to transaction volume, investors cannot manipulate the protocol's roadmap, nor can they manipulate the value of the token without becoming consumers (transacting). As a result, investors are left with the same incentive as any other token holder to activate more merchants and drive more consumers to transact with them. This novel approach aligns all actors in the network. Furthermore, a key result of this model is that large shifts in token custody (i.e. mass liquidation of the token) cannot affect the index metric (merchants activated). As such, investors would have little to no practical impact on the purchasing power of other token holders if they were to liquidate tokens.

Tokens may change custody in the following scenarios:

- Consumers purchase tokens with fiat currency
- Consumers gift tokens to one another
- Skilled professionals render services
- Notaries witness transactions
- Validating transactions or reviews
- Posting new reviews
- Transactions including smart contracts and escrow
- App usage (Balehu or Third Party)
- Marketing campaigns
- Inviting members of one's social graph to the network

Utility

Voting

The role of voting in the protocol is used to prioritize functionality improvements to the platform. The weight of a token holder's votes is determined by the number of transactions made in a period of time. The roadmap will be available, and authenticated token holders may use their votes to demonstrate their support of or contribute new ideas to the roadmap. The weight of votes cast for tasks in the roadmap may vary by period of time, allowing for the period of time to be adjusted to offset the effect of early adopters on voting at any given time. Tasks will be organized by application and actor. We assume that most token holders play multiple roles in the network; as such, their allotted votes may be used in each area of the roadmap. Time windows for casting votes will be communicated to all token holders, and the results will be public. This approach to voting ensures that cryptocurrency speculators, who may own many tokens, cannot influence the roadmap of the protocol, nor the value of the token at liquidation events.