



Dashing

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Abstract.

The US home services market is estimated to be worth more than \$400 billion annually and is highly fragmented with tens of thousands of small, local, and regional companies competing for customers. Existing technological solutions match customers with service providers through a combination of competitive bidding platforms and a matchmaking process based on screening and reviews.

The existing marketplace is plagued by the following challenges:

- **Lack** of trust due to misalignment of incentives and imperfect disclosure by companies when matching customers and vendors
- **Reviews** that are often manipulated, fake, inaccurate, or incomplete
- **Zero** information on transactions where reviews are not left, which could be as high as 90% of all transactions
- **Consumers** currently have two primary options: the increased costs of highly centralized platforms with some ability to protect from negative outcomes, or the lower-cost and limited recourse offered by decentralized platforms
- **The** inability of existing solutions to support ongoing, multi-vendor, multi-touch, or complex transactions.

The Dashing ecosystem was specifically designed to address these issues and consists of the the Dashing Platform (Dashing) and the GetDashing Application (GetDashing). The Dashing Platform uses blockchain technology to automate user verification, reputation management, payment processing, contract life-cycle management, and dispute arbitration. Blockchain technology enables automation, which increases efficiency, transparency, and trust while reducing costs.

The GetDashing Application (iOS, Android, Web app) will be the first service built on the Dashing Platform and will offer a full-service experience for the home services market. GetDashing will manage all aspects of projects that need to be done around the home and will benefit from the automation provided by the Dashing Platform.

This white paper details the approach the Dashing Platform and GetDashing application will use to address current market challenges as well as the the structure of the token offering, the proposed use of funds, and an estimated timeline for completion.



Background

Blockchain and Ethereum
US Home Services

Dashing is a revolutionary new platform at the intersection of blockchain technology and the highly fragmented US home services market.

Blockchain and Ethereum

Blockchain technology is sweeping the planet, with Bitcoin and Ethereum becoming household names. Yet current applications are merely scratching the surface of the technology's many possibilities. Blockchains (also called public ledgers or distributed ledgers) are databases of cryptographically verified entries that are validated, stored, bought, sold, and traded in a distributed fashion across a network of computers running compatible nodes. Some of these entries can represent the ownership of digital assets and real-world objects.

Modern blockchains are based on Merkle trees (also known as hash trees) and are a structure for encoding data and facilitating validation of data entries in large, distributed, networks where entries are both verifiable and immutable (unchangeable). Bitcoin (BTC, XBT) and Ethereum (ETH) are the best-known examples of modern blockchains. Ethereum allows for the creation of smart contracts (scripting) directly on the blockchain and the creation of Ethereum tokens, which is a ledger of Ethereum addresses and corresponding balances. Ethereum tokens most often adhere to the ERC20 standard, which guides token interactions with other Decentralized Applications (dAPPS) in a predictable manner. The tokens are used to implement rules around distribution and value without being subject to the limitations or price of Ethereum. Tokens can represent an almost limitless array of things, from digital assets such as cryptocurrencies to energy, identities, DNA, social media interactions, and even physical items.

Two key advantages of blockchain entries are that they are cryptographically verified. That means they can be mathematically proved to be authentic, and they are immutable, which means they can never be changed. The ability to authenticate and permanently store data in a public and decentralized manner offers numerous opportunities for blockchain technology to positively disrupt many aspects of our daily lives. One area we believe is ripe for change is the home services market.

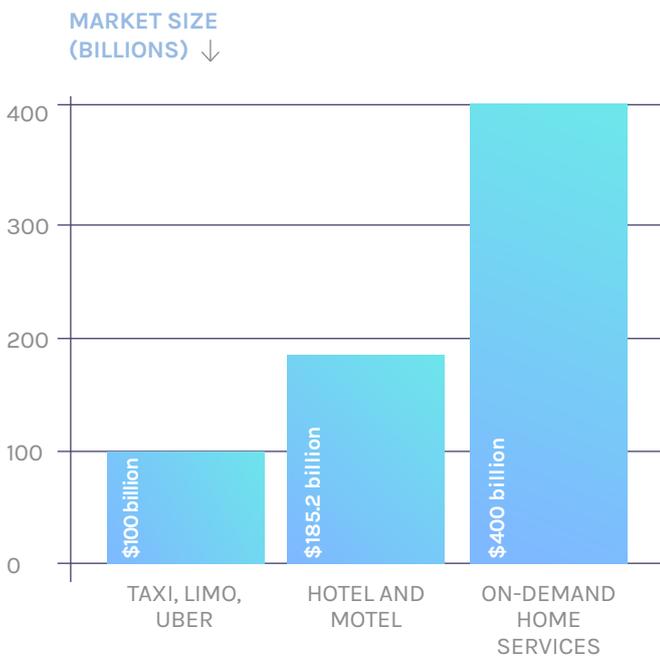
US Home Services

The US home services market is estimated to be worth more than \$400 billion annually and is generally defined as services provided in and around a home, excluding the initial construction of the home, including cleaning, maintenance, landscaping, roofing, and similar services. This market is highly fragmented across tens of

thousands of small companies that primarily serve local or regional markets with very few large, national players. Given the need to physically send service providers to each home, centralization and consolidation by larger competitors is difficult. Most market participants face competition from other small, local companies, not large regional and national competitors.

At the same time, the highly fragmented market presents a tremendous opportunity for disruption. Smaller, fragmented service providers lack the financial backing and technical expertise necessary to innovate, leaving fertile ground for technological innovators to step in. For example, look no further than the local taxi market, where localization and high fragmentation allowed companies such as Uber and Lyft to disrupt the status quo, forcing consolidation, innovation, and greater competition among the traditional taxi service providers in order to compete.

The market size comparison chart illustrates several localized, fragmented markets that have experienced significant disruption from technological innovations.¹²³ We believe the US home services market is ripe for a similar disruption, and Dashing is ideally positioned to take full advantage of the opportunity.



¹ <https://www.ibisworld.com/industry-trends/market-research-reports/accommodation-food-services/hotels-motels.html>
² <http://abovethecrowd.com/2014/07/11/how-to-miss-by-a-mile-an-alternative-look-at-ubers-potential-market-size/>
³ <http://iac.com/media-room/press-releases/iac-s-homeadvisor-combine-angle-s-list>



Market Participants: Technological Solutions in the US Home Services Market

Competitive Strategy

Curated Database of Service Providers

Competitive Bidding Platforms

Competitive Differentiators

Misaligned Incentives: Platform vs. Users

Competitive Strategy

Technological players in the US home services market have primarily adopted a combination of two strategies to connect buyers and sellers: providing a curated database of service providers or providing a competitive bidding platform.

Curated Database of Service Providers

Thumbtack, Angie's List, HomeAdvisor, Porch, TaskRabbit, and others all provide access to a database of approved vendors that have been approved and verified. Google Reviews, Yelp, Facebook Ads and similar companies provide lists of verified reviews and depend more on advertising revenue and less on formalized agreements with the vendors. Both groups essentially provide a matchmaking service, connecting homeowners with service providers. Services will vary by company, but most include at least some safeguards such as red flags for bad actors and fraud protection, and some also offer dispute resolution services. The business model relies on consumers' willingness to pay, even if indirectly, for verification and contact information, and vendors' willingness to pay for access to potential customers.

A small subset of these companies also create vendors through a process called latent capacity conversion that allows disorganized, structureless providers to compete with established providers. For example, Uber provides the structure for car owners to compete with taxi companies, and Airbnb allows people with spare rooms to compete with hotels.

Competitive Bidding Platforms

TaskRabbit, Plowz & Mowz, Amazon Home Services, and many new companies that call themselves the Uber of [anything related to home services] are essentially mechanisms for competitive bidding. They appeal to homeowners' desire to reduce costs by creating a platform for receiving bids on a specific project or task at the lowest possible price, at the fastest possible speed, or in some combination of both. Like the companies providing curated databases of service providers, these competitive bidding platforms include a rating system or some type of verification, as well as limited safeguards such as dispute resolution.

Competitive Differentiators

Existing companies fall roughly into three categories, as shown in the following table.

Category	Credentialing	Review Process	Recourse for Neg. Outcomes	Examples
Platforms	Variable	Variable	Little or None	TaskRabbit, Amazon Home Services, Plowz & Mowz, Handy
High-Touch Matchmakers	High	Strong	Variable	Thumbtack, Angie's List, HomeAdvisor, Porch
Low-Touch Matchmakers	Limited to None	None	Little or None	Craigslist, Facebook, Nextdoor, Yelp, Google Reviews

These companies compete on some combination of price, speed, and trustworthiness (of the company and of the represented vendors). Users' overall costs correlate with the relative strength of the company for each category in the above table. To cite an example from another industry, Uber has a high degree of control over trust, price, and speed, and therefore has higher costs—not necessarily reflected in costs for the end user but rather in the increased costs and lower pay borne by the drivers and the company's operating losses. In the home services market, Thumbtack charges a fee for vendors to bid on a job, regardless of whether or not they get the job, and that fee serves as a subsidy that allows Thumbtack to maintain the platform without charging the customer who is requesting the bid. However, vendors must account for these additional costs and must increase their prices to cover what is essentially a marketing expense associated with participating on these types of platforms.

Companies that are able to avoid the increased costs associated with trust management (e.g., credentialing, review management, negative outcome recourse) usually compete on a perception of price superiority. These companies include Craigslist, Backpage, Facebook ads, Google Reviews, Yelp, and Nextdoor. These companies are

low-touch, low-recourse matchmakers with weak, few, or no mechanisms for credentialing; review management; and recourse for negative outcomes. Companies in this category engage mostly in advertising as opposed to true transaction management. They have lower costs due to their lack of involvement, but trust is also low among consumers who must make decisions without viewing vendors' performance records other than the reviews the platform allows to be posted. Consumers who use these companies also lack adequate safeguards against negative outcomes should something go wrong.

Misaligned Incentives: Platform vs. Users

The US home services market and other markets with related structures are rife with allegations of less-than-transparent dealings, review manipulation, and legal challenges.

- **Thumbtack** and HomeAdvisor: inadequately screened requests for quotes, fake quote requests, and unfair business practices
- **Uber:** driver lawsuits over compensation, labor code violations
- **Airbnb:** review manipulation
- **Yelp:** review manipulation and fees for review removal
- **Angie's List:** pay for play, review manipulation
- **TaskRabbit:** inadequate screening, review manipulation, labor code violations
- **Handy:** labor code violations, review manipulation



The Opportunity: Problems in the US Home Services Market

Market Opportunity #1: Address the Lack of Trust.

Market Opportunity #2: Provide Verifiable, Agnostic Reviews.

Market Opportunity #3: Balance the Cost and Benefits of Highly Centralized Platforms.

Market Opportunity #4: Present Verifiable, Objective Data for Independent Analysis.

Market Opportunity #5: Adopt a Flexible Framework for More Lucrative Interactions.

Market Opportunity #6: Move Beyond a Digital Rolodex to Multi-touch Relationships.

Six key challenges in the US home services market offer an unprecedented opportunity for disruption.

Market Opportunity #1: Address the Lack of Trust

Trust is a key commodity in the US home services market. Consumers must trust that the purchased product, service, or experience will meet their expectations. They seek high-quality products and services offered at a reasonable price that protects their investment, and they want a recourse if their expectations are not met.

As described in the previous section, technology companies have attempted to address the lack of trust in the home services market in one of two ways: by providing a curated database of service providers or by establishing competitive bidding to help consumers identify the fastest, lowest-cost service provider. However, each of these approaches has numerous problems and fails to fully overcome the lack of trust inherent in the home services market.

Both curated databases of service providers and competitive bidding platforms typically find that incentives for clear disclosure of a vendor's actual behavior are at odds with their business model, which charges these same vendors for preferred placement or to bid on jobs. They have a vested interest in making their platform appear as trustworthy as possible, but they have little incentive and possibly a disincentive to take actions that would actually make it more trustworthy.

Market Opportunity #2: Provide Verifiable, Agnostic Reviews

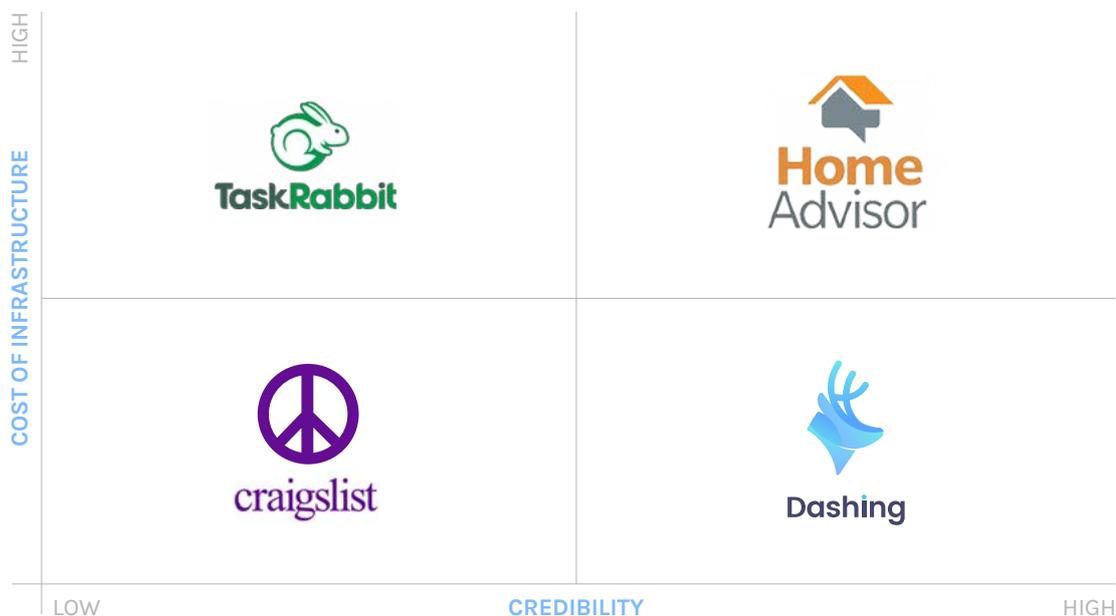
Existing platforms claim to offer verification and reviews of service providers, but they have an inherent bias that limits the value of that information. The centrally controlled review process and limited public access to the databases lead to an unavoidable bias that protects bad actors from the most honest reviews of their work and leaves consumers vulnerable to subpar service providers. Customers need to have access to a true account of all service providers and their work—not just reviews of the transactions that the platforms choose to share.

When acting in their best interest, existing platforms have a tremendous incentive to de-emphasize users' negative service experiences. Some of them even reap financial benefits from consumers' negative experiences by charging poor-performing service providers for additional options or services that limit the visibility and impact of negative reviews, as evidenced by allegations of review manipulation by Yelp, Angie's List, Handy, and other platforms.

Additional concerns are the prevalence of fake reviews and that reviews are typically left on only a small percentage of transactions. Companies can easily pay for fake positive reviews for themselves and fake negative reviews for their competitors. Fake followers (social media) and fake reviews are easy to create and cheap to purchase, thus further undermining the credibility of the reviews on existing platforms. Even authentic, verified reviews do not solve the entire problem since they represent only a subset of all transactions as the majority of customers do not leave reviews at all. If we believe the often-cited 90-9-1 rule, then only 1% of users will actively create reviews, 9% will participate by commenting, rating, or sharing the review, and 90% will read without engaging.

Market Opportunity #3: Balance the Cost and Benefits of Highly Centralized Platforms.

The competitive strategies of the current market players illustrate the challenge of developing a centralized platform in a highly fragmented market. Competitors must make a trade-off between (1) the high infrastructure costs and the high credibility of centralized platforms and (2) the low cost and low credibility of decentralized platforms that lack adequate safeguards for developing trust and providing a recourse for negative outcomes.



Market Opportunity #4: Present Verifiable, Objective Data for Independent Analysis

Objective trust analysis requires a transparent and immutable record of all actual transactions. Without readily available, verifiable, objective data for independent

analysis, the market suffers from misinformation since market participants maximize their financial and reputational outcomes rather than the transparency of platform transactions, both positive and negative.

Currently, competitors provide subjective summaries of transactions that are distilled to maximize the platform's objectives. In essence, the platforms are asking consumers to trust their service even though it is based on criteria that they control, knowing they have a strong incentive to exclude or minimize negative experiences.

Market Opportunity #5:

Adopt a Flexible Framework for More Lucrative Interactions

Competitors are focusing almost entirely on matchmaking, trust brokering, and price/value positioning. More complex interactions and value-add opportunities are overlooked if they cannot be distilled to some variation of trust, price, or speed. The rigid structures of the current platforms leave more complex and possibly more lucrative interactions on the table, while a more flexible framework would allow monetization of such interactions and relationships.

Market Opportunity #6:

Move Beyond a Digital Rolodex to Multi-touch Relationships

In many ways, existing platforms are solving non-problems due to business model inertia. The leading market competitors have created a digital version of what the phone book first did with its Yellow Pages more than seventy-five years ago: a centralized directory of contact information sorted by type of service provider. They have simply added some reviews and outcome management mechanisms.

This approach is a fundamental misunderstanding of what a large, growing group of consumers need and desire. They do not lack the ability to use what is essentially a digital rolodex. Instead, they want turnkey services in lifestyle management. The desired product is no longer the provision of the underlying service, but rather the knowledge of what to do, when to do it, and how to do it. Consumers want help managing the entire process: identifying what needs to be done (project-specific knowledge), knowing how best to complete it, scheduling appointments, managing the project, verifying the completed work, processing payments, reviewing the vendor, resolving disputes, and anticipating future projects. Companies that succeed in providing these services will be building more complex, multi-touch relationships rather than merely providing transactional referrals and a fancier version of the Yellow Pages.



The Solution: The Dashing Platform and GetDashing Application

Increase Trust and Credibility.

Automate Peer Dispute Resolution.

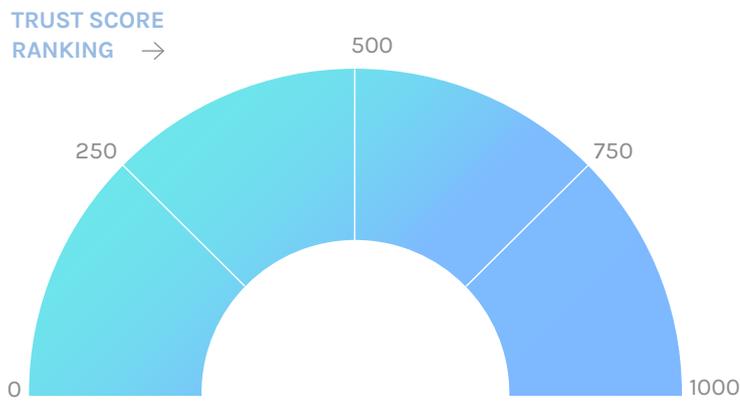
Facilitate Complex, Non-Commoditized Interactions.

Decrease Costs and Reduce Transactional Friction.

Recommendation Staking.

GetDashing Application.

The Dashing Platform uses blockchain technology to automate user verification, contract life-cycle management, payment processing, and dispute arbitration. The Dashing Platform will support any industry in which such automation is vital and is not limited to the home services or local services markets. The GetDashing Application (iOS, Android, Web) will be the first service to be built on the Dashing platform and offers a full-service experience where consumers can find, book, and manage appointments for what needs to be done around the home.



Increase Trust and Credibility

The Dashing Platform will increase trust and credibility through open, verifiable credentialing and performance tracking. For each user, Dashing will calculate a Trust Score based on a combination of interactions on the platform (as a client, vendor, or dispute mechanism participant) and validation algorithms (including identity validation, social interaction validation, location verification, and extensive anti-fraud screening).

Current market solutions present summaries developed by biased third parties about alleged behavior and project outcomes. In contrast, the Dashing Trust Score will facilitate decision-making based on real information about the identity of companies and individuals and their actual past behavior as vendors and clients.

Interactions with the platform and the impact on the Trust Score will be maintained off-chain, and a hash of the activity will be entered into the public ledger. The use of off-chain analysis and storage with on-chain hash archiving minimizes network costs and ensures the immutability of transaction information to permit independent

validation. That solves a fundamental problem within the existing market in which companies have full discretion to manipulate data to maximize their outcomes by omitting, deleting, or suppressing data about real interactions.

The Dashing Platform's Trust Scores will be a numeric value between 0 and 1,000, where a higher number represents a higher level of trust. This scoring model will allow market participants to make better decisions and facilitate platform-wide structural incentives, restrictions, and requirements to encourage good behavior and discourage bad behavior. For example, Dashing might require higher token staking (a performance bond) for vendors or clients with lower Trust Scores while offering incentives for progress toward a higher Trust Score and successful contract completions.

Automate Peer Dispute Resolution

For existing market participants, dispute resolution and review management are not only labor- and cost-intensive, but also biased toward the best interest of the platform—not the vendors or their clients. The Dashing Platform will use blockchain technology to automate this process, which will, in turn, dramatically reduce costs and create outcomes that are objectively fair and verifiable.

Dashing will allow any party to a transaction to request a dispute within the framework of its smart contract. At the start of each transaction, the smart contract lays out the terms to which each party must adhere, including timelines, milestones, requirements for completion, payments, and dispute options.

Dashing will handle dispute resolution through a peer-review process. Each disputed transaction will be assigned to a group of arbiters, who will stake Dashing tokens in order to vote on the dispute. Their votes will be weighted algorithmically to account for the number of tokens staked, their Trust Score, and their record of performance in arbitration. The dispute resolution process will include rewards for voting correctly (defined as voting with the weighted majority) as well as disincentives for voting incorrectly (defined as voting against the weighted majority).

Additional safeguards will prevent manipulation. For example, Dashing will limit the percentage of the dispute pool that any one arbiter can control. By creating a framework in which the self-interests of all actors are aligned, the automated dispute resolution system will achieve objectively fair outcomes in a trustless environment through the use of economic motivation and self-interest.

A secondary dispute tier (appeal) will be available with proportionally increased stakes that will serve to limit unnecessary appeals. The Trust Score for market participants will reflect the winning percentages of appeals. The Trust Score for arbiters will reflect the accuracy of their voting in dispute outcomes.

Facilitate Complex, Non-Commoditized Interactions

Existing players in the US home services market lack the structural flexibility to offer non-transactional items since they primarily act as a matchmaker or competitive bidding platform. Complex interactions offer opportunities for increased revenue as well as stickier client relationships. Dashing and GetDashing will encourage ongoing, non-commoditized interactions with increased pricing variability and multiple interactions between clients and vendors.

Existing platforms also lack the structure for outcome management in non-binary interactions in which dispute resolution and payment cycles are more complex. GetDashing is able to expand current offerings by including value-added services for complex, ongoing client-vendor interactions. Dashing will automate the labor- and cost-intensive review and arbitration process, allowing the GetDashing application to support more complex interactions and at the same time lowering the costs associated with them.

How would this work in practice? Consider a busy professional who awakens one morning to the sound of water pouring down through the ceiling, thanks to a leaky toilet upstairs. Aside from shutting off the water, he has no idea whom to call, much less spare time to select a provider and monitor the progress. That is where the GetDashing Application steps in, providing a one-stop service that will seamlessly coordinate a series of highly reliable service providers to bring the house back to normal. Dashing can identify the necessary tasks, request price quotes, schedule appointments, and supervise the work, interacting with the plumber, drywall contractor, painter, and others. The client (homeowner) rests assured that only the highest-quality, most reliable service providers are performing the work, and is confident that he has a recourse (through the Dashing arbitration process and review process) if the project goes sour.

GetDashing can provide similar services related to ongoing service contracts such as landscaping or pool cleaning, or complex projects involving many service providers. For example, imagine a home remodeling expert managing a project involving multiple specialists, or home relocation specialists helping the client move out of an old home, move into a new home, make logistical arrangements, hire cleaning help, and so on.

Decrease Costs and Reduce Transactional Friction

The use of Dashing Trust Scores for all market participants creates a community in which general trust levels will increase since the Trust Scores cannot be manipulated by bad or indifferent actors, including the platforms themselves. Those heightened levels of trust, combined with automated dispute resolution, will reduce the friction of transactions and obviate the large cost centers of competing platforms such as review moderation, fraud prevention, and dispute resolution departments.

These costs reductions will yield operational efficiencies and pricing advantages since Dashing and GetDashing will provide a superior experience at a lower cost for both vendors and clients. Many platforms charge vendors a fee for participation (e.g., a listing fee or bidding fee), but the vendor bears all the risk with no guarantee that the fee payment will result in solid leads or even leads from actual real clients.⁴ Ultimately, vendors must raise the price of their service to cover the costs associated with using these online platforms, which means that clients end up paying more.

Recommendation Staking

Dashing will allow participants who have completed a transaction to recommend another participant for a related transaction only if they stake tokens on the recommendation. This Recommendation Staking facilitates chained contracts through which participants with a history of successful interactions are able to recommend others, stake tokens as proof of their trust in the recommended party, and receive a payout (a percentage of the contract) if the referral results in project completion. Recommendation staking is especially important in complex, ongoing interactions in which the original vendor might need to involve additional vendors whom they trust, and it provides an incentive for all participants.

The direct incentivization of referrals combined with performance bonds in the form of staked tokens aligns the incentives of all parties while creating further operational efficiencies. Existing platforms simply cannot support such complex, ongoing, multi-vendor, multi-client interactions due to their limited focus on transactional interactions. Dashing's Recommendation Staking will yield greater trust, greater returns, and lower transactional friction. In addition, it will organically grow the platform as new vendors and clients are introduced.

⁴ <https://www.prnewswire.com/news-releases/class-action-lawsuit-alleges-rico-violations-by-iacinteractivecorp-nasdaq-iac-and-homeadvisor-300365169.html>

GetDashing Application

The GetDashing Application will be the first user of the Dashing platform. It will be an early driver of platform adoption as well as a key revenue generator by charging a markup on the value-added services it provides while benefiting from the reduced operational costs provided by the Dashing infrastructure.

GetDashing offers a full-service experience where consumers will find, book, and manage appointments for things that need done around the home. The original design for GetDashing was in recognition of the systemic issues with existing companies in the broader home services industry. As we saw earlier, existing market participants focus on matchmaking and trust brokering in a transactional environment. Due to their limited scope, they fail to effectively capture ongoing, complex opportunities and are plagued by high customer service and dispute resolution costs and low faith in the veracity of their review and user moderation process.

GetDashing recognizes that the fundamental problem that customers are trying to solve is not their inability to locate a vendor. The problems customers face are knowing what needs to be done, finding and booking trustworthy vendors to handle it, and outsourcing the hassle of the entire process. For vendors, the problems they want to solve are finding real customers, completing the job in the most efficient manner possible, having a guarantee that they will be paid, and knowing that any disputes will be handled in a fair manner. GetDashing seeks to solve these problems for both customers and vendors.



Token Ecosystem Structure (Framework/ Protocols)

Trust Arbitration and Scoring

Trust Score Incentivization

Arbitration Automation and Arbitration Staking

Payment Automation

Token Rationale

Revenue Model

Technical Implementation Details

Peer-to-Peer Arbitration

Dashing Trust Score

Technical Challenges

Timeline

Token Sale

Anticipated Use of Funds

Team

Advisors

The Dashing Token ecosystem includes trust attribution, trust scoring, incentivization, payment automation, arbitration automation, and arbitration staking

Trust Attribution and Scoring

The starting point of all interactions is the allocation of a Trust Score for each participant (buyers, sellers, vendors, agents, dispute arbiters). The calculated Trust Score will reflect all the information that is available for each user.

For new users, the initial Trust Score algorithm publishes a hash of the calculation factors and resulting score in the public ledger. Subsequently, Trust Scores are updated based on additional information provided by the user or by the user's behavior and participation in the ecosystem. Examples include:

- **KYC information** (i.e., ID validation, banking validation, address validation, etc.)
- **Reputation Scoring** based on the analysis of social media (Facebook, LinkedIn, Twitter, Instagram, etc.)
- **Phone**, email, and location verifications (could include mobile device confirmation, anti-fraud analysis of the device, and IP location information)
- **Payment** ability validation (examples include holds or collection of funds from credit cards, validation of cryptocurrency holdings, etc.)
- **Staking** Tokens as a performance bond, which would allow for a higher Trust Score
- **New** vendors will be required to post a bond that will decrease in percentage as their Trust Score increases
- **Performance** as a vendor (number of completed transactions, frequency of arbitration, percentage of arbitrations won, appeal percentage, percentages of appeals won, reviews as a vendor)
- **Performance** as a customer (number of completed transactions, frequency of arbitration, percentage of arbitrations won, appeal percentage, percentages of appeals won, reviews as a customer)
- **Performance** as an arbiter (participation, performance defined as voting correctly with the winning party, percentage of arbitrations that are appealed, and speed of voting)
- **Performance** of associated users and referred users

Trust Score Incentivization

Participants will have a vested interest in improving and protecting their Trust Scores due to Dashing's built-in incentivization. Vendors with higher Trust Scores will appear higher in search listings, have lower bond requirements, and be subject to lower payment holds and reserves. Arbiters with higher Trust Scores could receive higher payouts when voting or may have a better chance of selection for an arbitration pool.

Dashing's incentivization includes framework controls that use monetary incentives to encourage positive behaviors (e.g., providing high-quality service or providing honest reviews) and penalize negative behaviors (e.g., failing to uphold a contract or providing biased input into arbitration cases). These are all ways in which Dashing uses platform design, token staking, and rewards to encourage positive behaviors in a trustless environment.

Arbitration Automation & Arbitration Staking

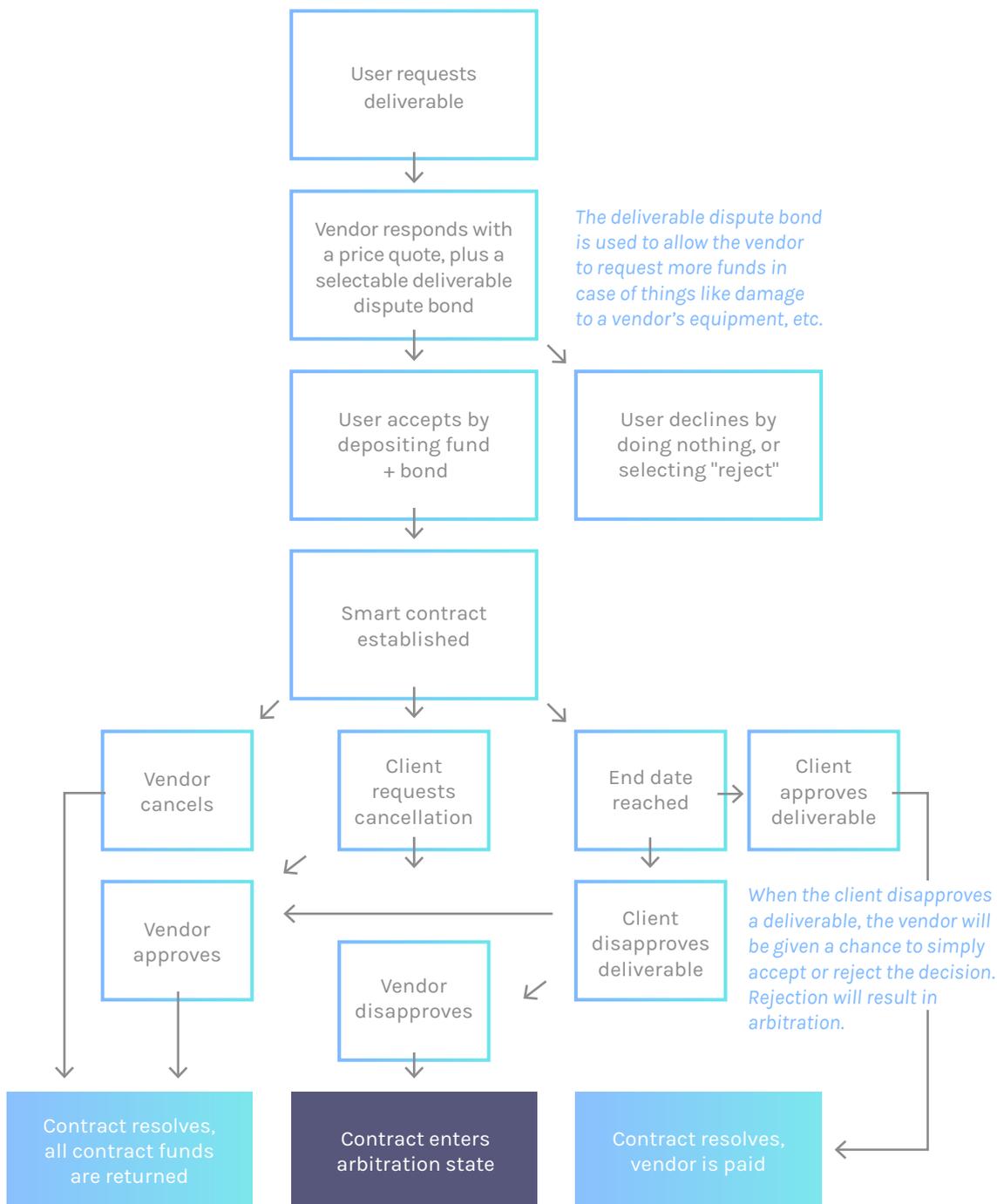
Arbiters are Dashing Token holders who have staked tokens per arbitration pool guidelines.

- **Selection** for participation in an arbitration pool will be algorithmically determined.
- **Incentives** will be provided for correct verdicts and for speed of delivery.
- **Disincentives** for incorrect verdicts (defined as voting for the losing side in the outcome) and delayed or no verdict given.
- **Rewards** for correct arbitration, defined as increased benefits based on correctly voting with the winning side for future arbitrations (e.g., higher percentage payouts, higher likelihood of inclusion in arbitration case, etc.).
- **Appeal** process (including disincentive or larger stake to appeal where appealing party will incur a larger appeal fee to provide disincentive to appeal cases without merit).

Payment Automation

Dashing Tokens will be used to complete all transactions on the platform, but customers may pay in whatever method they choose, including cryptocurrencies, fiat, and credit cards. Since all payments are triggered by milestones in the smart contracts, payments are automated, reducing delays for payment disbursement to vendors. We will support the conversion of Dashing Tokens, cryptocurrencies, and fiat for customers and vendors, subject to relevant AML/MSB (anti-money laundering/money service business) laws and any other relevant restrictions and regulations.

During the course of a project, the scope, budget, or time frame may change. In such cases, the client or vendor may request a change. If one or both parties are unresponsive after the contract deadline has passed, either party may request arbitration.



Token Rationale

- **Using** tokens gives Dashing the ability to implement rules around distribution (vendor bonds, dispute resolution, payment flow) without being subject to the limitations or price of Ethereum).
- **Increased** options for management of on-chain and off-chain transactions
- **Token** supply advantages of not being subject to token supply limitations and external pricing pressures
- **Insulate** against price shocks due to sudden change in ETH prices caused by external forces
- **Cross-service** options for future platforms that want to utilize the underlying infrastructures related to Trust Scoring, transaction processing, contract creation, payment settlement, and dispute management
- **Increased** flexibility for future design
- **Limiting** reliance on third-party implementations and execution. Companies that seek to build on platforms they do not control add additional variables and risk should the third party fail to execute, change directions, or encounter unforeseen issues.

Revenue Model

Infrastructural cost reductions created through automation create lower transaction costs and allow for the implementation of several revenue generation strategies in the platform.

Dashing Token Ecosystem

- **Fee** to cover GAS and related network fees for transaction processing plus small margin
- **Conversion** fees to and from fiat
- **Fiat deposit/payout fee** (tiered based on deposit or payout method similar to merchant processing fees)
- **Arbitration** pool staking (use of Dashing-controlled tokens in the arbitration pool to generate rewards)
- **Platform** licensing fees
- **Value** added services built on Dashing platform (GetDashing will be the first of these)

GetDashing Application

- **Service** fees generated through completion of contracts (percentage charged for management of the transaction)
- **Negotiated** discounts from vendors based on volume

Vendor Services

Leveraging trusted connection to vendors that develop and offer additional services that build on GetDashing Application for vendors.

- **Payment** processing.
- **Chargeback** mitigation.
- **Time-sheet** management and workforce analytics.
- **Job** scheduling automation.
- **Bid** automation and analytics.

Technical Implementation Details

The Dashing Token is an ERC20 compatible token based on the audited source of OpenZeppelin's BasicToken implementation and will function with any ERC20 compatible wallet.

The Dashing Token will be used to facilitate the automation of smart contracts in the Dashing ecosystem.

Arbitration

If a contract enters the dispute stage, arbitration will begin. During the initial phase, both the vendor and the consumer will be allowed to make their arguments by providing case data.

If initial privacy is desired, a hash of the case data may be uploaded instead and be replaced by the actual data once the interval closes and the contract validates the hash. That will prevent the parties from reading the other sides' cases before dispute resolution starts.

Once either the time limit for statements passes or both parties have provided their information, the contract will be open for voting.

Peer to Peer Arbitration

Users will be able to cast votes in arbitration using their wallet client, using Dashing Tokens as a stake to both validate the vote and prevent fraud and abuse.

The smart contract that is being disputed will accept vote deposits from voters and will record the voter's wallet address, how many tokens they voted with, and which direction they voted.

Votes may be cast by eligible members of the community (eligibility will be determined by the contract). Votes are cast by making deposits to the contract and specifying whether the deposit is in favor of the consumer or the vendor. The contract must specify a minimum stake.

When the voting window closes, the outcome is determined by a simple majority, with the tokens of the voters in favor of the losing side automatically becoming available to

the voters of the winning side. Winners will be allowed to withdraw their own funds plus a portion of the losing voters' funds as an incentive for correctly reviewing the case.

Arbitration Platforms

Since arbitration data (messages, proof, claims) cannot (and should not) be stored on the blockchain, the dispute will have to be facilitated by an arbitration platform. The Dashing arbitration platform provides a few capabilities, mainly:

- Ability to upload and display evidence
- Ability for both consumer and vendor to make their claims
- Dispute discovery
- Dispute outcomes (e.g., what resolution would the client like, what resolution would the vendor like)
 - Example: The client underwent a bathroom remodel, and the vendor ended up causing damage to the house. The client requests the initial contract payment back, as well as a portion of the bond to cover damages.
 - Example: The vendor performed a service that the client is disputing. The vendor would like to receive all of the contract's funds back.

All arbitration platform data will be stored in a versioned, standardized format in a distributed manner (using technology such as IPFS). The platform will be able to collect a small fee from the voting pool as payment for providing dispute services.

Dispute outcomes

There are several possible outcomes for any dispute (in no particular order):

- **No** dispute: contract resolves normally
- **Vendor** dispute: no consumer acknowledgment, dispute automatically resolves in favor of the vendor
- **Consumer** dispute: no vendor acknowledgment, dispute automatically resolves in favor of the client
- **Mutual** dispute: arbitration platforms take over

Dashing Trust Score

Dashing will take two approaches to scoring trust: trust platforms and peer trust.

Trust platforms

Trust platforms will provide all the information that can't be obtained through a direct blockchain approach: KYC/AML, ID validation, behavioral analysis, and so on. That allows Dashing to bootstrap the trust score of a user or vendor when there is no or limited on-chain performance data available and allow the platform to preserve the user's privacy while providing confidence in their trustability.

Most trust platform transactions will take place off-chain due to the private nature of most of the information used to calculate trust. It is important to note that Trust Scores will be computed independently by the platforms, allowing end users to pick and choose which model they'd like to use. That also allows platforms to share as much or as little as they like about their validations.

A more private platform allows for more user privacy but also allows for less independent validation, and vice versa.

Example factors of a trust score calculation

AML/KYC validation, ID validation, banking validation. Consumers and vendors will need to provide identifying documents to the trust platform. The platform will be responsible for verifying these documents and storing this information.

Social media based reputation analysis. Using automation tools to scrape social data feeds, mild machine learning can be used to detect activities of interest, and a reputation score can be adjusted accordingly and automatically by the platform.

Location verification. Using the IP address and other data about the user as they interact with the trust platform, identify characteristic details of higher-than-normal fraudulent activity can be used to update the Trust Score provided by the platform.

Payment ability validation. Platform consumers can post a bond (using whatever payment method the platform supports) into a smart contract bond controlled by the platform. This bond will allow the platform to automatically resolve disputes based on peer trust outcomes and will automatically increase the user's trust platform score.

Peer trust

Peer trust is the actual ratings of interactions and the resolutions of disputes. The data will be directly on the public ledger and can be verified by anyone.

These details will be published directly to the blockchain and as such can be used to calculate trust:

- **Number** of completed transactions
- **Frequency** of arbitrations
- **Ratio** of arbitrations won and lost
- **Ratio** of appeals
- **Reviews**

Technical Challenges

There are a few implementation details that we have not yet clarified and we are in the process of evaluating options.

Voter pool selection

Any valid Ethereum address with Dashing Tokens would ideally be allowed to vote on arbitration outcomes. However, we must prevent attacks where owners of a large amount of Dashing-compatible addresses are able to make votes, thus swaying the vote for personal gain.

The current proposal for this mechanism is to specify eligibility in the form of identity requirements, either to be implemented with our token or to tie in to a project such as Civic. That will make it harder for one individual or organization to cast many votes, especially when used in conjunction with compatible trust platforms.

Arbitration proof and cases

Since the cost of storing arbitrary data on the Ethereum blockchain is quite high, an alternative format for including proof in a P2P distributed manner is necessary. The current proposal is to utilize a standard format (to be defined) and a technology such as IPFS, which will allow for the peer-to-peer distribution and validation of case data and allow for virtually unlimited storage.

Timeline

Dashing and GetDashing were first conceived in Q1 2017, and development began shortly thereafter. We anticipate the initial launch in Q4 of 2018.

Q1-Q4
2017

- **Initial** conception of Dashing platform and GetDashing Home Services
- **R&D**
- **Research** for underlying public ledger application (trust, dispute resolution, smart contract management)
- **Conceptual** development of token platform (waves, ERC20, Bitcoin RSK analysis and selection)
- **Initial** token architecture development

Q2
2018

- **White** paper release
- **Token** infrastructure development
- **Smart** Contract development and testing

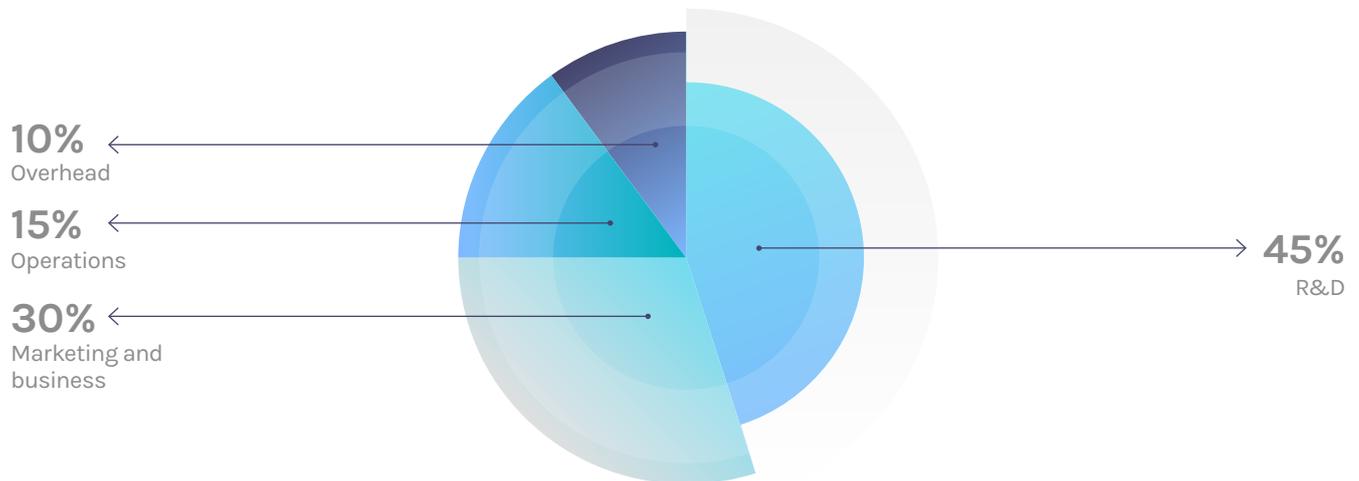
Q3-Q4
2018

- **Contract** audit and platform Audit
- **Beta** release of GetDashing (application for iOS and backend transaction management)
- **Initial** Launch of GetDashing platform. Top 150 cities by population in the United States.
- **Smart** contract Beta with Audited code

Token Sale

Dashing is registered in the United States as a Delaware C corporation. Token pre-sales will provide initial funding to expand the scale of R&D and marketing of the Dashing platform.

Anticipated Use of Funds



[Dashing Team](#)

Alexander Villmann | Co-Founder, CEO

Alexander studied computer science at Portland State University before founding his first company. Initially focused on software development, he expanded to provide solutions in many spaces catering to large enterprises. Skilled in cryptography and machine learning, he has deployed code at scale to achieve some of the lowest fraud rates in the industry for payment processing and customer verification in high-risk transactions. His client base includes two Fortune 500 companies, with battle-tested and secure software and solutions deployed worldwide

Richard Sherman | Co-Founder, COO

Richard has more than 15 years of experience in enterprise contract negotiation and sales with clients including Nike, Microsoft, Amazon, Expedia, Honeywell, HTC, Weyerhaeuser, Russell Investments, and Starbucks. Richard is an expert in large-scale contract negotiations with complex and long-term sales processes. He has extensive operational and management experience, and as co-founder of his last company, he was instrumental to each year's revenue growth. Richard is a graduate of Dartmouth College with a double major and a minor and was awarded the Mellon Undergraduate Fellowship and the Dickey Foundation fellowship.

Ashleigh Maxfield | Marketing Director, Head of Customer Experience

Ashleigh is an expert in UI/UX design and has a strong background in SEO and social media marketing. Ashleigh graduated from Portland State University with a major in marketing and has more than four years experience in a marketing director role. Her previous company's clients included Microsoft, Amazon, America West Airlines, Skype, and LinkedIn.

Andrew Wozniak | Technical Account Manager

Andrew has more than 10 years experience working with a wide range of clients in fast-paced, high-pressure environments. He is a specialist in rapid procurement of tailored hardware and software solutions, including R&D support in the mobility and security spaces. Two of his key clients rank in the top 50 largest companies in the United States.

Ryan Ahern | Director of Business Development

Ryan has more than 13 years experience selling complex solutions in the mobility space to government and enterprise clients, including Microsoft, Boeing, HTC, Adidas, Columbia Sportswear, the City of San Diego, San Diego County, and the State of California.

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