



**Connecting
Merchants & Consumers
with Blockchain**

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1. Executive Summary

Carry is a platform that connects offline merchants and consumers using blockchain.

Despite the rapid growth of online and mobile commerce, consumption mostly still takes place offline. But the offline commerce market, even with its staggering market size of \$25 trillion, still lags behind in technology due to the time and energy it takes to introduce and spread new technology.

Offline commerce has three major issues. First, merchants have little understanding of their customers because customer data is fragmented and incomplete. Second, consumers have no control over their data while corporations use and monetize this information. Third, offline advertising is outdated, lacking in transparency and effectiveness.

Carry Protocol aims to resolve these problems with three objectives: 1) provide a platform for merchants to understand their customers and communicate with them, 2) enable consumers to control their own transaction data and monetize the information, and 3) offer a new advertising channel that is effective and transparent.

The most crucial component to realizing these objectives is the team behind Carry Protocol, comprised of the founding members of Spoqa. Over the past 7 years, they have grown Dodo Point into the number one tablet-based loyalty platform in Korea and Japan, securing 10,000 partner merchants with 15 million customers and tracking over \$2 billion worth of offline payment data annually. Such accomplishments were achieved in a challenging offline environment, and the offline execution experience will be one of most valuable drivers of success for the Carry Protocol.

As Carry's flagship partner, Spoqa will leverage its existing merchant and consumer base to scale Carry Protocol into the market. This will give Carry Protocol a competitive edge in the market and help achieve faster application in the real world.

Carry will also encourage participation of various partners and offer fair rewards to anyone who contributes to the growth of Carry in the earlier stage, including Spoqa, thereby creating a healthy ecosystem for merchants, partner companies, contributors and most importantly, everyday consumers.

2. Introduction

2.1. Offline Commerce Market

Online and mobile commerce markets have grown rapidly in the recent years, but overall commerce remains dominated by the \$25 trillion offline market¹. According to a study by AT Kearney, 90% of all retail spending by American consumers took place in offline stores, illustrating that people still spend most of their money in real brick-and-mortar stores².

Unsurprisingly, major online giants are making significant investments into offline businesses. Amazon's \$14 billion acquisition of Whole Foods reflects the strategic importance of linking online with offline. This is not just an American phenomenon, with Asian companies like Alibaba and Tencent also moving into offline with multibillion dollar purchases of shopping centers and hypermarkets.

Every business has a data silo problem

It is relatively easy to identify consumer data in the online domain to execute and track the effectiveness of advertising. However, this is more difficult in the offline market because consumer data is split between different players and cannot be consolidated.

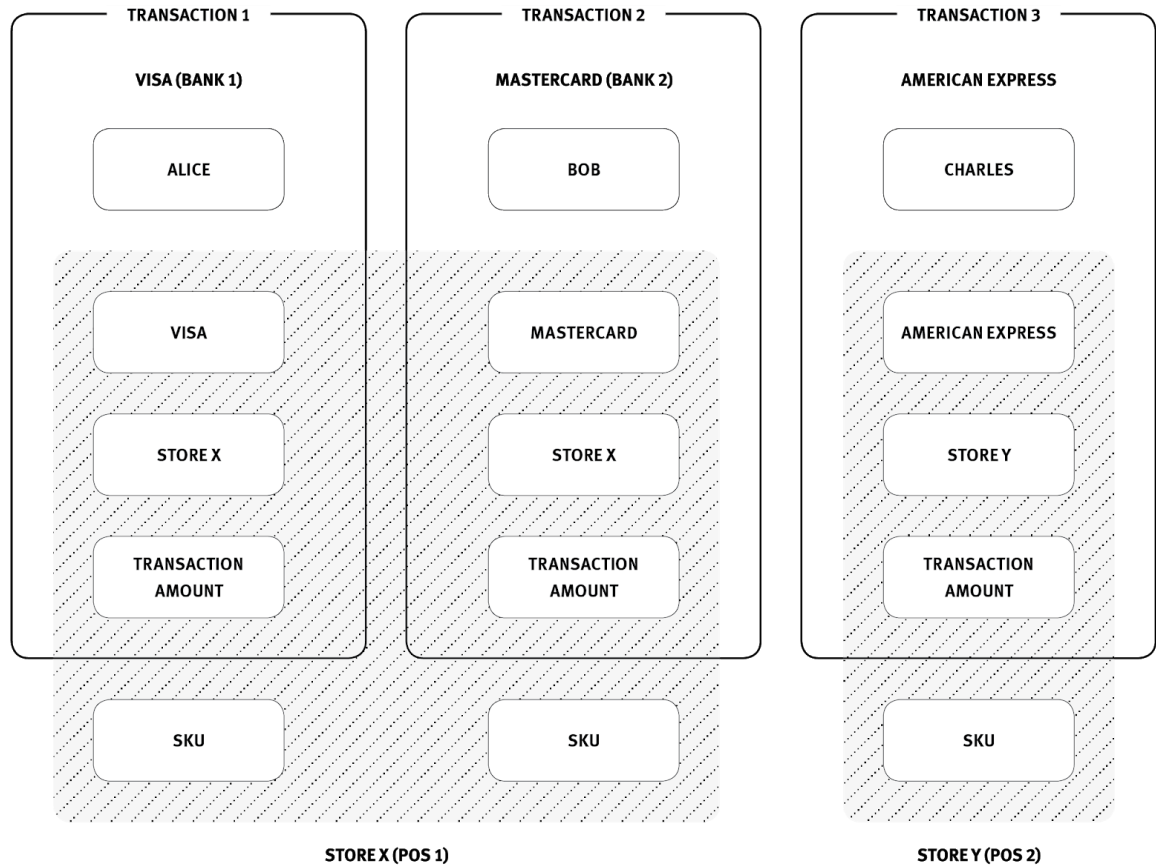
Figure 1 illustrates instances of how credit card transactions made in a store is split between credit card companies (Visa, Mastercard, American Express, etc.), merchants (X and Y), and point-of-sales software companies (1 and 2). Credit card companies know the customer, location, and transaction amount but do not know what the customer purchased. On the other hand, the merchants and point-of-sales software companies know what the customer purchased, location, and transaction amount but not the identities of the customer.

In other words, each player can only access a limited set of data with none of them having the complete picture. Unless all of these entities merge their split data, it is impossible to have a truly consolidated view of offline transactions. It seems unlikely for these players to consolidate their data due to competitive interests and antitrust and privacy regulations. Thus, it will be difficult to see a completely comprehensive set of data tracking offline purchasing behavior.

¹ <https://www.statista.com/statistics/443522/global-retail-sales/>

² AT Kearney, "On Solid Ground: Brick-and-Mortar Is the Foundation of Omnichannel Retailing"

Figure 1. Typical transaction data ownership split

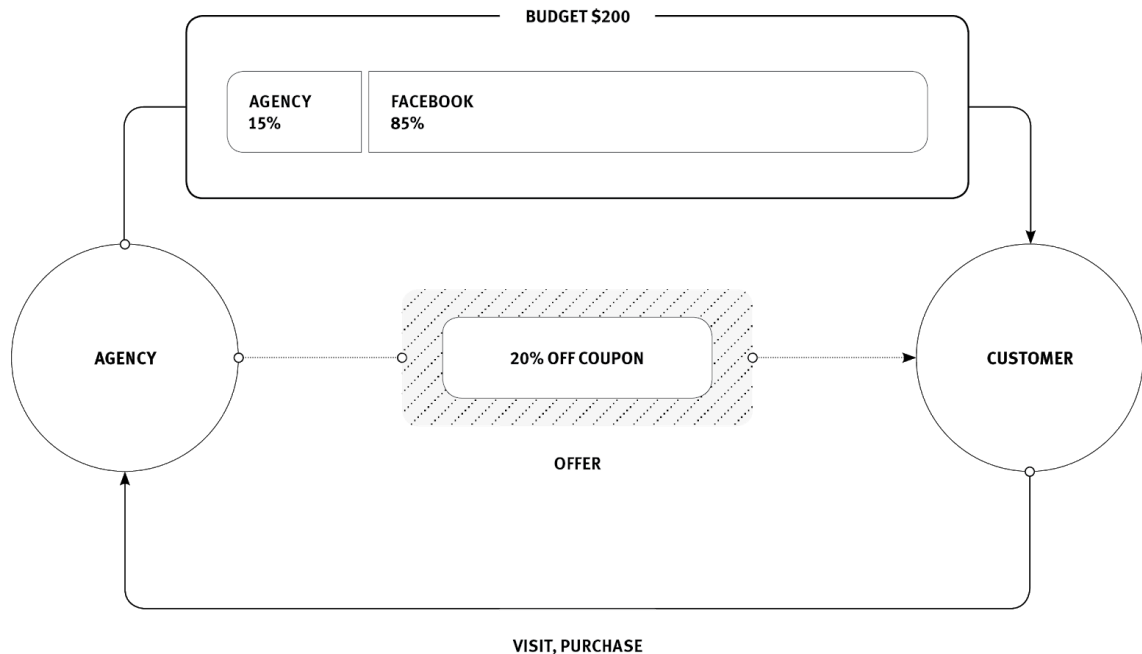


Marketing is inefficient and lacks transparency

Marketing campaigns are usually conducted on channels with a large number of consumers, allowing them to charge a massive fee based on the sheer size of their viewer base. But despite the high marketing costs, there is no way of truly knowing how many people were exposed to the ad or how effective it was. Advertisers have no choice but to trust the results provided by the channel. There are also very few channels with a large consumer base, so advertisers end up relying on a few channel owners like Facebook and Google.

Offline merchants desiring a different form of marketing are left handing out flyers on the streets. This form of advertising lacks efficiency and has a major disadvantage of being untrackable. Merchants pay hundreds or thousands of dollars to distribute flyers on the streets but have no way of knowing if the campaign was effective at driving real traffic and revenue.

Figure 2. Typical ad campaign on Facebook



Consumers have no control of data

Consumers have no ownership or control over their data. Millions of accounts on Equifax were exposed in the 2017 hack, but consumers were left at the mercy of the data holding entities. Beyond security, data is often monetized without the knowledge or consent of the very people generating this data. When signing up for new services, consumers typically pay no attention to terms that allow corporations to use and monetize data, and agree to these terms. For example, Apple's iTunes Terms & Conditions is nearly 7,000 words long, or the approximate length of this paper, and the document renders users' data rights to Apple's discretion. The very consumers enabling data monetization are left out of profits generated from their activities.

Coupon and point management is a hassle

From a consumer's standpoint, there are too many coupons to manage offline. A large number of stores still use paper coupons, and many of them end up in a drawer somewhere beyond their expiration dates. Even electronic coupons are managed separately on different apps by different stores and brands. Although there are apps that consolidate coupons and points to resolve this issue, it is still inconvenient for consumers to use.

The offline retail market is subject to the largest technological disruption. The Carry Team believes that the introduction of blockchain technology and its innovative ecosystem in the offline market will help overcome the above challenges and offer more benefits to all participants.

2.2. Carry Team's Mission

The Carry Team aspires to innovate the offline commerce market by using blockchain technology to solve the aforementioned issues. Based on its experience conducting business in the offline market and securing 10,000 partner merchants with 15 million consumers, the team wishes to resolve the inefficiencies of the offline domain through the following:

1. Provide a platform for merchants to understand their customers and communicate with them
2. Enable consumers to control their own payment data and monetize the information
3. Offer a new advertising channel that is effective and transparent

The Carry Team is launching Carry Protocol to successfully realize the three objectives defined above. The team will spare no time to build the Carry Protocol and begin spreading it to the existing merchant and customer base. The team will then build the Carry ecosystem where it can prosper together with its contributing participants.

3. Carry Protocol

3.1. Carry Protocol

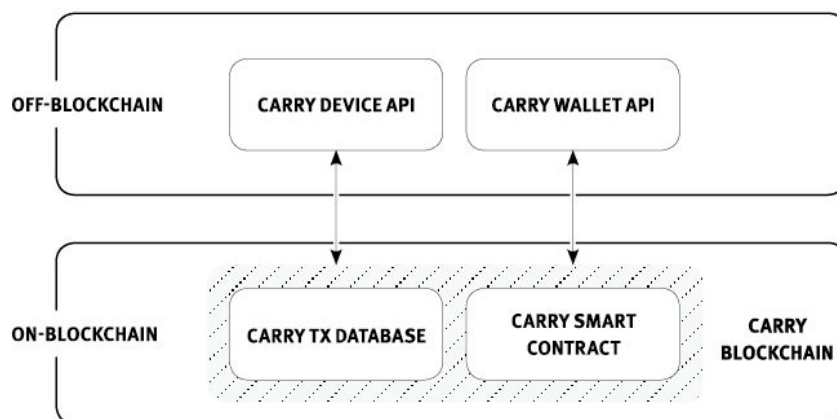
In simple terms, Carry is **a platform that connects merchants and consumers using blockchain.**

Merchants and consumers are the most important participants of the system and use Carry Protocol to communicate and interact in various ways. Another participant in the Carry Protocol is advertisers, many of whom are expected initially to be merchants in the system.

Carry Protocol comprises of two major parts, each with two components : First is the blockchain itself that houses **1) Carry transaction database,** and **2) Carry smart contracts,** and second is a set of APIs that connect the blockchain to third party software, including **3) Carry wallet API** and **4) Carry device API.**

1) Carry transaction database refers to the virtual database on the blockchain where the transaction data is generated and uploaded by consumers. 2) Carry smart contract supports the issuance and use of tokens (CRE and BT) on the Carry Protocol. 3) Carry wallet API enables wallet apps to support Carry Protocol and lets consumers manage their cryptocurrency, control their transaction data & privacy settings. 4) Carry device API is an API that allows devices at the stores to support Carry Protocol, and provides the function to pay with cryptocurrency and sends payment data to consumer's wallet. Each of the above will be explained in further detail.

Figure 3. Components of Carry Protocol



3.2. User Scenario

Before providing a detailed explanation of the token mechanism for Carry Protocol, we will share three general user scenarios that will aid in understanding the Carry Protocol.

Table 1. Key definitions in the scenario

CRE	Carry Token (main token of Carry Protocol)
Bryan's Sandwich	a hypothetical restaurant, merchant user of the Carry platform
BST	Bryan's Sandwich Branded Tokens (a type of BT created on the Carry platform)
Bird Coffee	a hypothetical coffee shop
Bird Coffee Tokens	Bird Coffee's Branded Tokens (a type of BT created on the Carry platform)
DewDrop Beauty	a hypothetical large cosmetics company, an advertiser in the scenario

Scenario #1: Fiat payment and rewards

Customer View	Merchant View
<p>Carol is an office worker and visits Bryan's Sandwich for lunch. After ordering her sandwich and fries, she gets ready to pay.</p> <p>She decides to pay in fiat with her credit card, instead of using cryptocurrency like BTC or ETH.</p>	<p>Bryan is a merchant in the Carry Protocol that owns a Sandwich store.</p>
<p>Carol says "yes" and notices that the tablet facing her is already awaiting for her phone number with the following message:</p> <p>"Collect \$1 worth of BST tokens!"</p> <p>Carol inputs her phone number on the tablet and collects the tokens. It was very convenient because she didn't even have to take out her phone from her pocket and open a wallet app.</p>	<p>Bryan processes the \$10 transaction and asks Carol,</p> <p>"Would you like to collect some points? We give 10% of the money back in the form of our store's tokens (BST)."</p>
	<p>Bryan receives a message on his POS that confirms that \$1 worth of BST has been sent.</p> <p>Even though Bryan offered points, he is happy because there is a higher chance that the customer will come back. The point he just gave out actually has a one-month expiration.</p>

As she walks out, Carol checks her wallet app and sees that her transaction data from Bryan's Sandwich is there. Transaction data consists of the store's location, store type, anonymized store ID, price, SKU# and etc. Carol decides to share her transaction data on Carry blockchain, and opts-in to receive ads.

Shortly after, Carol is rewarded 5 CRE for uploading her transaction data.

Scene #2: Targeted coupons and crypto payments

Customer view

In her wallet app, Carol had previously agreed to receive relevant ads from nearby coffee and dessert shops.

Carol receives an alert in her wallet app:

"Bird Coffee Grand Opening, 1 free cup of Americano!"

Carol decides to use the free coupon. She follows the Google Maps link on the wallet app to find Bird Coffee, and orders a pretzel and her free coffee.

Carol likes this idea and agrees to pay in CRE, since she has recently collected a lot of CRE. The tablet facing her generates a unique QR, and Carol scans it using the wallet app on her phone.

Just like before, Carol receives Bird Coffee tokens for her purchase at the store, and additional CRE for sharing transaction data on Carry blockchain.

Merchant view

Bird Coffee is a new coffee shop that has opened nearby Carol's office. They are willing to pay for advertisement to attract new customers.

Having limited success with flyers, Bird Coffee decides to join the Carry Protocol for advertisement.

Bird Coffee signed with an ad-company for its advertisement, and uses them to send CRE and Bird Coffee Branded Tokens to the users who agreed to receiving coupons.

They tell the customer that crypto payment is also accepted, and that an additional discount is offered for CRE payments.

CRE is deposited into the Bird Coffee's wallet. They can use this CRE for more targeted marketing in the Carry System in the future.

? Scene #3: Targeted marketing by a third party

Customer view

Carol has previously agreed to receive ads and even received some useful coupons.

Carol is about to leave work when she receives a message from DewDrop Beauty:

“Come check out our pop-up store!”

More importantly, she receives \$5 worth of CRE along with the ad message.

Carol decides not to go tonight, but considers checking it out over the weekend with her friends.

Merchant view

DewDrop Beauty is a global cosmetics company. Although their primary target is women in their 20s, they recently launched a new cosmetics line for women in their 30s.

DewDrop decides not to spend a lot of money advertising on channels like Facebook, and wants to instead give the value directly to the consumers.

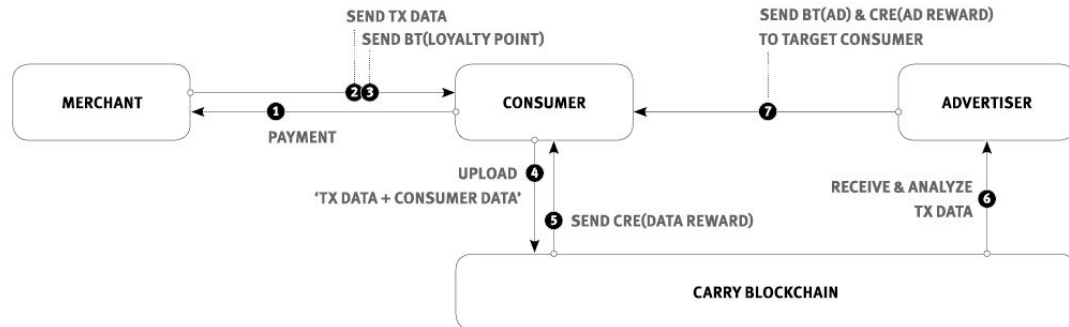
DewDrop buys \$50,000 worth of CRE to advertise on the Carry System.

Based on purchase behavior, they are able to target middle to high income women working in Seoul.

DewDrop is happy because they were able to identify their target consumers, and also save money on keyword ads or sponsored ads to instead give that value directly to the consumers.

3.3. Business Flow

Figure 4. Business Flow



3.3.1. Payment

Carry Protocol’s service begins when a consumer buys goods or services at a store and completes a transaction, just as Carol did in Scene #1. Carry Protocol **supports fiat payments such as credit card and cash, as well as cryptocurrencies**, making it easy to use for anyone.

Means of payment	Description
1) Cryptocurrency	<p>In addition to CRE and BT, Carry Protocol will also accept payments in other cryptocurrencies such as BTC and ETH.</p> <p>Many merchants may be reluctant to accept cryptocurrencies over fiat money, creating the need for a “settlement service provider” to convert the cryptocurrency into fiat money for the merchant. Anyone can become a settlement service provider in the Carry Protocol, and merchants can work with the settlement service provider of their choice. Merchants can also choose to receive the cryptocurrency directly, in which case they can collect the amount without the help of a settlement service provider.</p>
2) Fiat (cash, credit card)	<p>For the time being, most consumers will likely pay in fiat. These transactions undergo the same processes as existing transactions, and therefore does not require any additional action by the merchants.</p>

Merchants must be equipped with an interactive device like a tablet to use Carry Protocol. Most merchants already have a POS (point-of-sales) device, which could itself function as a Carry Protocol device or require a separate device like the tablet. The device will send the transaction data from the POS to the customer, and help the customer upload this data on the blockchain.

3.3.2. Branded Tokens, BT - Loyalty Point

Merchants often provide loyalty points or coupons to customers as a way to encourage return visits. Carry Protocol helps merchants to this end by providing tokens branded for each merchant.

In the above scene #1, the \$1 worth of BST that Carol receives is a type of BT in the form of loyalty points. The BT is issued by merchants and provided to customers, regardless of whether or not the customer chooses to upload the payment data on the blockchain.

The Branded Tokens act as a receivable issued to the consumer by the merchant, and thereby imposes an obligation on the merchant to provide goods, services, or other benefits accordingly. BTs have a number of other properties and uses, which we will be detailed later.

3.3.3. Transaction data monetization

After completing the transaction at the store, consumers will receive the transaction data on their wallet app. There are multiple ways of receiving transaction data: one example is by entering their phone number on the device as was done in Scene #1, or another is by scanning the QR code from the device using the wallet app like in Scene #2.

The consumer can then decide whether or not they upload the transaction data on the blockchain. It is entirely up to the consumer whether to upload the data or not, in part or in whole.

Carry Protocol gives full authority of the data to the consumers to realize its mission of “consumer data ownership.” Even when the consumer chooses to upload the transaction data, whether in part or in whole, their privacy will be protected through anonymity shield and data encryption.

Carry Protocol gives consumers CRE (pronounced “carry”) as a reward for uploading their transaction data on the blockchain, thereby encouraging more uploads. The CRE given to consumers will be taken from the Carry Token Pool built from the inflation of the blockchain itself, to be elaborated later.

3.3.4. Branded Tokens - Advertisement

In addition to using BT as a loyalty system, as described above in 3.3.2, BT can also be used for advertisement. The Bird Coffee coupon that was given to Carol in Scene #2 and the message from DewDrop Beauty in Scene #3 are all examples of Branded Tokens used for advertisements.

Transaction data that is stored on the blockchain will likely be used mostly for targeted advertisements. Advertisers can process available data and narrow down consumers suitable to their marketing needs to target ads on the Carry Protocol. If the advertisers find it difficult to process the transaction data themselves, the “advertising service provider” can help them identify the right targets for their ads.

Advertisements are sent in the form of BT on the Carry Protocol. Based on its property, the BT could be a coupon to be used on the next visit or a simple ad display. On the receiving end, consumers see the ad on their wallet app in the form of BT. Consumers can choose whether or not they want to receive ads by configuring the setting, and even choose specific areas of interest for ads (F&B, cosmetics, etc.).

Consumers that opt to receive ads will also receive CRE on top of the BT as a reward for ad exposure. Consumers can set the minimum threshold for the level of CRE rewards, so that BT (ads) is

only sent when a certain number of CRE has been received as a mechanism to protect themselves from indiscriminate ads or spam. Consumers are rewarded CRE by the advertiser for opting to receive ads, which is an incentive that has been proven to be effective through a number of reward apps. From the advertiser's point of view, the cost of advertising has been minimized and instead given directly to consumers for a more effective form of advertising at a lower cost.

Carry Protocol also allows advertisers to track the effectiveness of their ads, as is typically done in online advertisements. Both the issuance and use of Branded Tokens are traceable, making it possible to measure ROAS (return on ad spend) and distinguishing it from the traditional method of handing out flyers. If professional advertising businesses (DMP, etc.) combine existing data with Carry Protocol data, we can expect to see highly effective advertisements in the offline market.

Most of the advertisers will likely be merchants on Carry Protocol, but we also expect to see non-profit, government or public enterprises, companies seeking to improve their corporate image, and other advertisers who are not necessarily aiming to sell products. Media and researchers could also analyze Carry Protocol data for media coverage or academic papers. Carry Protocol's data will have a broad use in a wide range of areas.

3.4. Token Model

3.4.1. Smart contract

The numerous features of Carry Protocol can be accessed through Smart Contract. BT is the most basic and important function of Carry Protocol, and merchants can issue BT of various types through Smart Contract. Carry will continue to add more features, including store reviews, through Smart Contract.

The entities using Smart Contract (mostly merchants) must 1) stake a certain amount of CRE on Carry Protocol or 2) pay-as-you-go (in CRE) for each use of Smart Contract. Staking a fixed amount of CRE allows a specified usage level for Smart Contract (i.e. number of BT transactions per day). If the daily usage exceeds the set level, the user must pay a fee for each use in CRE. This is because executing Smart Contract requires Carry Protocol's resources, which incurs cost. This also protects the system from attacks (abusing, DoS attack, etc.) against the blockchain.

The per-use fee for Smart Contract can be set at a higher price point than the opportunity cost for CRE stake, encouraging merchants and advertisers to stake more CRE. If a merchant wishes to conduct more transactions than provided by their CRE stake, they can also offer perks and benefits to other participants such as their customers and have them deposit CRE on their behalf.

3.4.2. Carry Token: CRE

CRE is the main token of Carry Protocol. Its various uses can be summarized as follows:

Uses	Description
1) Stake to execute Smart Contract	A fixed amount of CRE stake or a per-use fee is required to use Smart Contract to access various features of Carry Protocol.
2) Reward in exchange for advertisement	CRE must be provided to consumer, advertising service provider, or wallet (app) service provider as a reward to conduct ads on Carry Protocol using its transaction data.
3) Means of payment	CRE is in itself a means of payment and an asset that can be traded at exchanges, and thus can be used at stores like any other cryptocurrency.

Inflation and Carry Token Pool

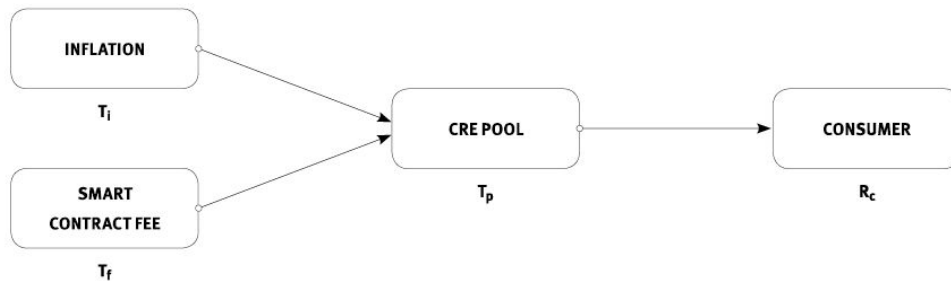
CRE will be subject to inflation with the growth of Carry Protocol, and such inflation will be used to reward consumers for uploading transaction data on the blockchain as mentioned above. Since the growth of Carry Protocol is linked closely with the accumulation of transaction data on the blockchain, it only makes sense for consumers to reap some of the benefits as the very entity

uploading the data. The inflation rate will also be adjusted based on assessment of the value of new transaction data compared to the value of accumulated transaction data.

The value of data is calculated based not only on the number of transactions but also the detailed information within the transaction such as date, SKU# and more.

As mentioned above, CRE stake or per-use fee must be made to execute Smart Contract. The per-use fee, paid in CRE, is accumulated in the central CRE Pool of the Carry Protocol. The CRE Pool is where the CRE from the per-use fee and the CRE from inflation are located. When CRE is rewarded to consumers for uploading transaction data, it does not come directly from inflation but via the CRE Pool.

Figure 5. Carry Token Pool



T : Total CRE issued

T_i : CRE issued by inflation

T_p : CRE amount in CRE pool

T_f : Tokens staked to execute smart contracts over specific time

V_a : Absolute value of transaction data uploaded by individual customer

V_r : Relative value of transaction data uploaded by individual customer

i : Inflation Rate

R_c : Reward for each customer

$$V_a = f(\text{Content of uploaded transaction data})$$

$$V_r = V_a / \Sigma(V_a \text{ over specific time period})$$

$$i = \min(f(\text{Specific time period}, \Sigma(V_a \text{ over time}), \Sigma(V_a \text{ over specific time period})), \text{Max inflation rate})$$

* Inflation rate can be set over specific time period (not necessarily annually)

* Max inflation rate is not determined yet

$$T_i = T \cdot i$$

$$T_p = T_i + T_f$$

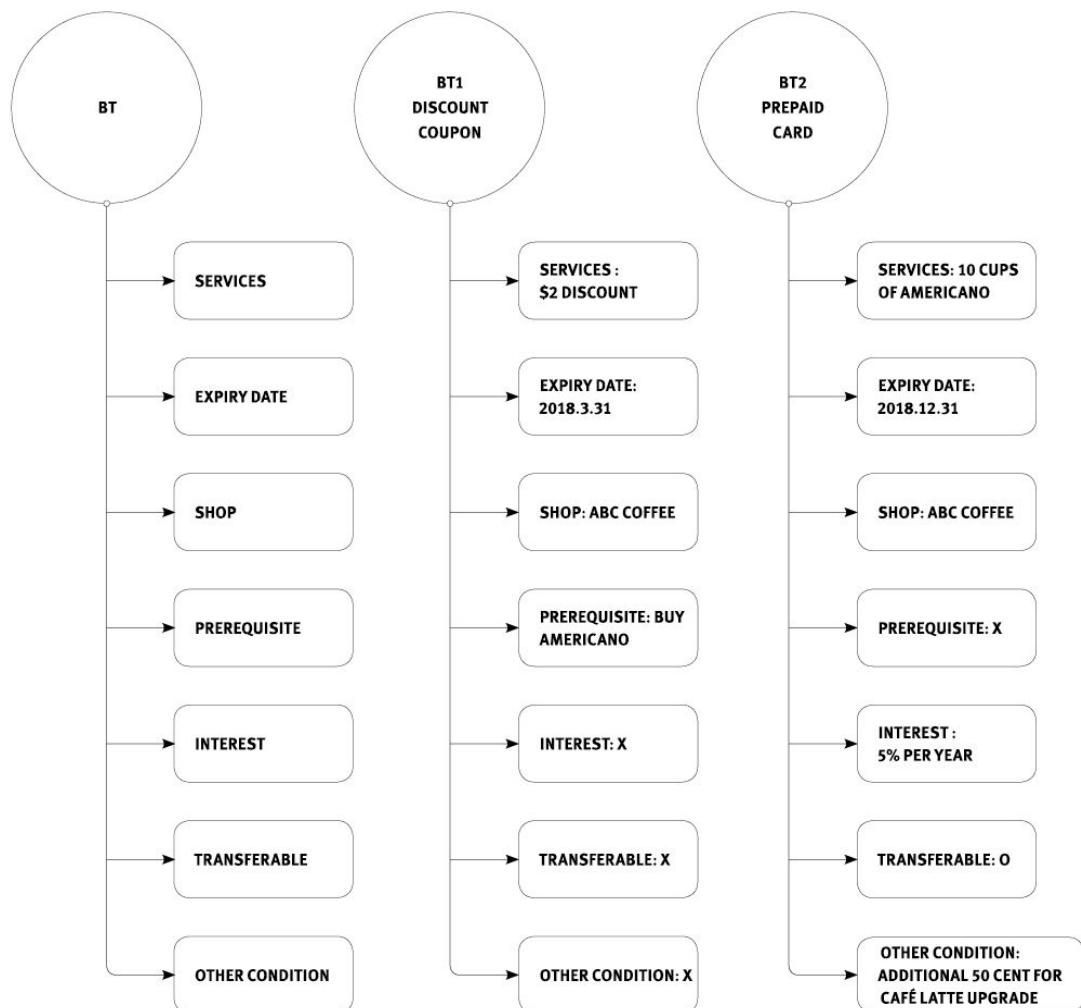
$$R_c = V_r \cdot T_p$$

3.4.3. Branded Tokens (BT)

BT is a token on the blockchain that is generated and issued through Smart Contract by merchants or advertisers on the Carry Protocol. It is a key element connecting merchants (advertisers) and consumers.

BT can be defined in a variety of ways by configuring its properties. For example, 1BT could be given a monetary value of \$1 or the equivalent of a cup of coffee. It could be given an expiration date so that it is only valid for 30 days, or have an interest rate. For the sake of operational security, Carry Team will define the initial BT properties and protocol users will not be able to generate or change them. The Carry Team will continue to take into account the needs of users and add new types of properties, and hopefully allow the community to define its own properties in the long run.

Figure 6. Examples of BT properties



3.5. Value-added Service Provider

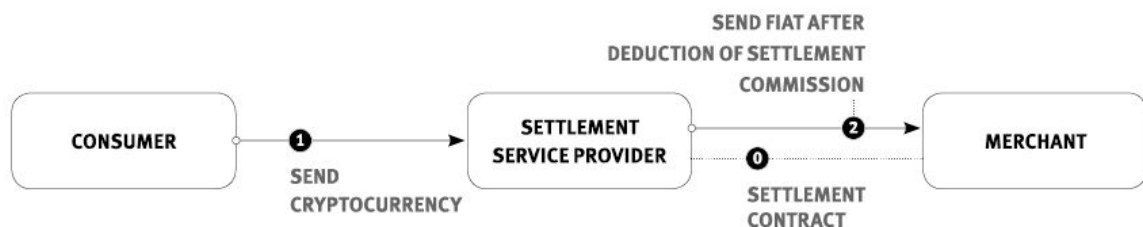
In addition to the key participants mentioned above, Carry Protocol also has value-added service providers that support the seamless operation of its service. These value-added service providers do not operate within the blockchain but use the blockchain-provided API to interact with other key participants as an important player in the Carry Protocol. There are four main groups of value-added service providers: settlement service provider, wallet service provider, device provider, and advertising service provider. Other value-added service providers could be added with the growth of Carry Protocol.

3.5.1. Settlement service provider

Settlement service providers are required in the transaction phase of the Carry Protocol. Merchants that wish to convert cryptocurrency into fiat money could select among the settlement service providers to achieve this. For example, when a customer wants to pay with BTC, the merchant asks the customer to send BTC to the address of a pre-determined settlement service provider. The settlement service provider converts this cryptocurrency into fiat money based on an agreed (either by the user or the market) exchange rate and sends it to the merchant. Although the transaction does not take place on the Carry blockchain, recommendation will be made to build the system with Carry Protocol within the method of payment and transfer, thereby making settlement service providers an important partner for Carry Protocol.

Most of the revenue for the settlement service providers will come from settlement fees, but the service providers are free to offer other services as part of its revenue model. Anyone can become a settlement service provider, but we expect cryptocurrency exchanges to be the biggest participants in the earlier stage with their existing technologies. In the long run, we also expect to see other players from the payment process or the financial market to take an interest in this service.

Figure 7. Settlement service provider



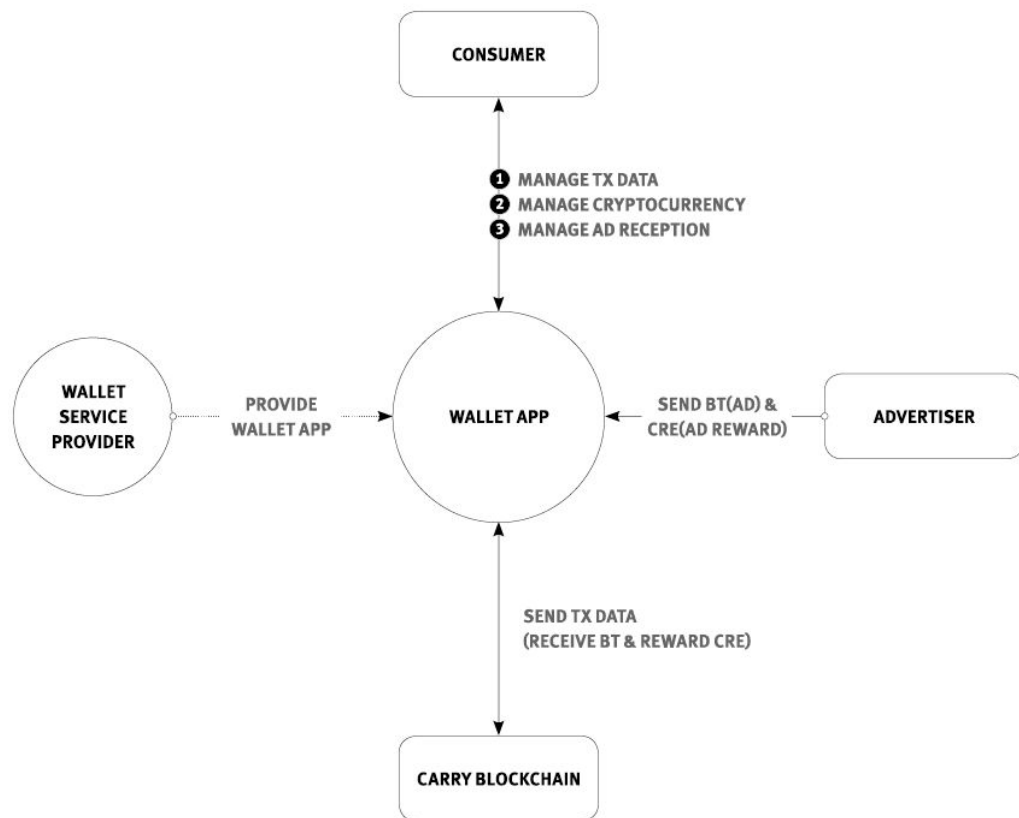
3.5.2. Wallet service provider

Of all the participants in Carry Protocol, wallet service providers have the biggest influence over consumers. They create and distribute wallets to consumers in the form of mobile apps. Three key functions of the wallet include: 1) helping consumers manage their transaction data and upload it on

blockchain for a reward, 2) allowing consumers to keep and use Carry Protocol cryptocurrencies (CRE and BT) and other forms of cryptocurrencies (BTC, ETH, etc.), and 3) functioning as an advertisement channel.

Wallet service providers will likely generate revenue in a number of ways, since they interact directly with consumers. In the earlier stage, major app services with an existing user base are expected to add Carry Protocol on top of their businesses to create a profitable synergy effects, rather than brand new businesses joining the ecosystem. It is also possible for ad channel owners to take an interest in this role in the future.

Figure 8. Wallet service provider

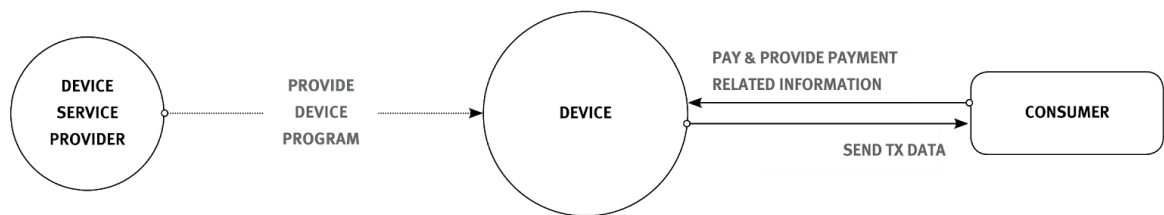


3.5.3. Device provider

Merchants must be equipped with devices to use the Carry Protocol in the store. Devices are an important point of contact with consumers, sending the transaction data to consumers so they can upload it on the Carry blockchain and linking merchants to settlement service providers. Device providers install devices at the stores and provide the software for the device, with Spoqa being a prime example.

Device providers generate revenue from the use fee that merchants pay for building the system for their use of the Carry Protocol. Merchants are required to make a CRE deposit to use Carry Protocol, but device providers could also make this deposit on their behalf and receive a usage fee from them. Device providers could also receive a commission for introducing merchants to advertising service providers for consumer ads. However, these are mere examples and device providers should build their own business models. Since device providers have a great influence over their large merchant base, we expect them to come up with a variety of revenue models.

Figure 9. Device Provider



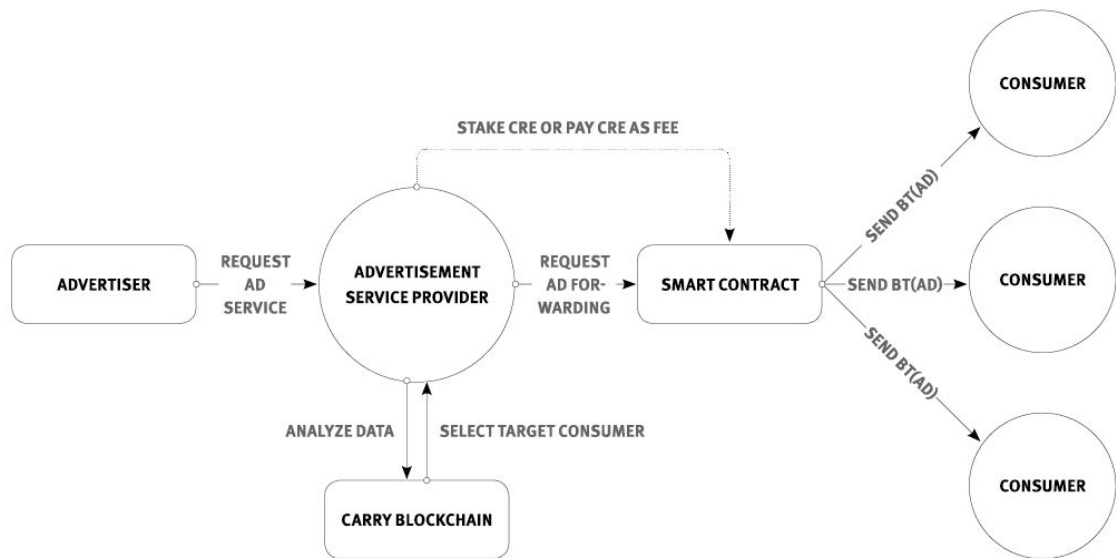
3.5.4. Advertising service provider

Advertising service providers analyze transaction data on behalf of advertisers to narrow down target consumers and conduct ad campaigns. Merchants will make up most of the advertisers on Carry Protocol in the earlier stage, but it will be difficult for them to access blockchain and extract target consumers on their own. Therefore, advertising service providers can play an important role in conducting the right ad campaigns for advertisers.

Advertising service providers will likely be businesses currently active in the online ad market who are also interested in offline data and wish to find a point of contact on the offline domain. If these players enter Carry Protocol and demonstrate the profitability of ads on the platform, more advertising service providers are expected to follow. Large participation of advertising service providers and competition among them will inevitably enhance the efficiency of advertisements, which will attract advertisers to partake in the Carry ecosystem.

Advertising service providers are required to stake or pay a fee in CRE, as are merchants. This is because advertising service providers will receive BT (ads) and CRE from advertisers to pass onto target consumers, and they must go through Smart Contract during this process to deliver the BT. Greater profitability for advertising service providers will lead to higher growth of CRE deposits by advertising service providers relative to deposits made by merchants themselves.

Figure 10. Advertising service provider



3.6. Value Proposition

3.6.1. Consumer

The consumers purchasing goods or services at the stores will take away the following benefits as a key participant in Carry Protocol:

First, customers will be rewarded BT for buying from merchants that support Carry Protocol. After the usual transaction is complete, customers will receive loyalty points or coupons in the form of a BT that they can use on their next visit.

Second, consumers will be rewarded CRE for uploading transaction data. After the purchase, they can selectively share their transaction data on Carry Protocol and receive a reward from Carry Protocol for sharing this information.

Third, consumers will be rewarded CRE for accepting advertisements. Carry Protocol eliminates the middle players like the existing marketing channels, so these fees go directly to the consumers.

Fourth, consumers can manage the points and coupons for various stores in one app. Small and medium businesses usually issue points and coupons in different ways, making it difficult for customers to manage them together. The Carry Wallet app will enable everyday consumers to use one app for simple management of points and coupons.

3.6.2. Merchant

Merchants are defined as businesses that provide goods or services to consumers in exchange for cryptocurrency or fiat. As a key participant in Carry Protocol, merchants will take away the following benefits:

First, the benefits mentioned in the previous section will encourage consumers to opt for merchants that support Carry Protocol. Therefore, merchants will be able to attract more customers by supporting Carry Protocol, which will lead to more sales.

Second, Carry Protocol will make it easier for merchants to manage their customers. The interface provided by Carry Protocol will be easy to use, despite the complexity of the protocol or blockchain technology behind it. Merchants can use the interface to learn more about their customers and use BT for various forms of interaction with their customers. For instance, merchants can use BT to conduct a customer satisfaction survey, or offer a special BT (coupon) to first-time customers to encourage return.

3.6.3. Advertiser

Advertisers are participants who wish to advertise to consumers on Carry Protocol, and can take away the following benefits:

First, advertisers can put out an ad very efficiently in the offline market. Unlike passing out flyers, Carry Protocol will allow advertisers to track the effectiveness of the ad, which will enable them to narrow down specific targets of their ads over time.

Second, advertisers can release the ad on Carry Protocol via easy-to-use interface so that they can focus on other aspects of their business.

4. Partner company

4.1. Spoqa: Flagship Partner Company

Spoqa will join Carry Protocol as its first key partner company. Early members of the Carry Team will comprise of founding members of Spoqa, guaranteeing full support from Spoqa for Carry Protocol. However, this does not mean that Carry Protocol will give any preferential treatment to Spoqa or operate solely for Spoqa. Carry’s partner program demonstrates our commitment to fair treatment to all partners, which will be further discussed later.

Spoqa operates Dodo Point, a customer-facing tablet based loyalty platform for SMB merchants. Over the past 7 years, Spoqa has interacted closely with merchants in the offline market to build a service that suits their needs, and has achieved remarkable accomplishments. Dodo Point currently has 15 million consumers and 10,000 merchants, and is being widely used in a variety of sectors as shown in Figure 13.

Figure 11. Dodo accumulated user base

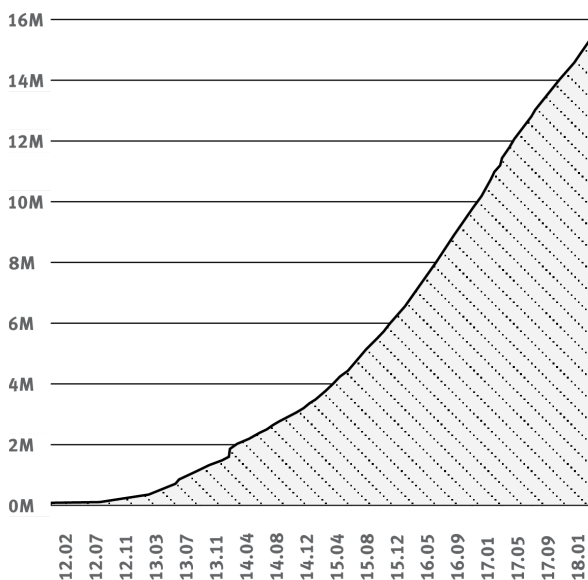


Figure 12. Dodo Point check-ins per day

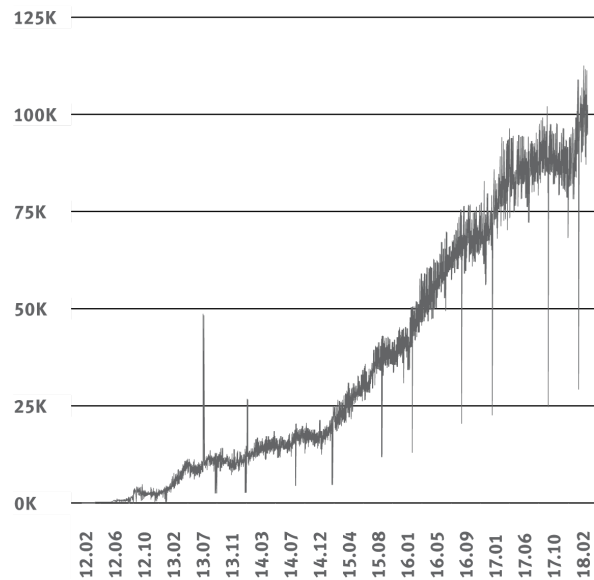
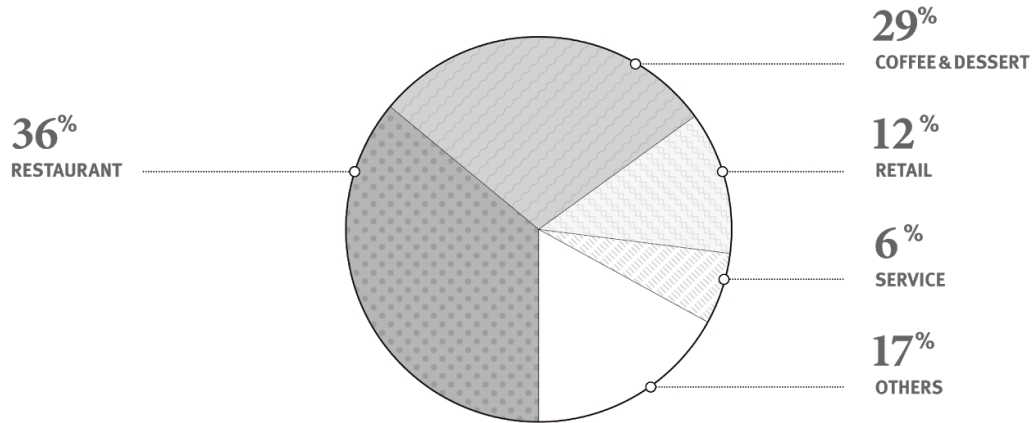


Figure 13. Dodo point by sectors



During its operation of Dodo Point, Spoqa has developed various services to meet the needs of merchants (shown in Table 2), all of which are underlying foundations for Carry Protocol. In particular, the tablet devices installed at each store are wirelessly connected to the merchant’s point-of-sale (POS) device, enabling it to support Carry Protocol with a simple software update. By leveraging Spoqa’s assets, Carry Protocol will be able to penetrate the offline commerce market and connect to merchants and consumers effectively and professionally.

Table 2. Dodo Point services

Service	Description
Dodo Point	Tablet-based loyalty service for offline stores Customers can receive loyalty points by entering their phone numbers into the Dodo tablet.
Dodo Message	Coupon automation via messaging apps Dodo Message automates coupon-sending to customers whose contact information is collected with Dodo Point. Spoqa's automated coupons have a redemption rate of 6-7%, twice as effective as merchant-sent coupons with an average redemption rate of 3%.
Dodo Ads	Targeted advertising with customer purchase data Merchants can target their advertisements on social media like Facebook or Instagram based on the offline purchase patterns of consumers.
Dodo Manager	Admin and control panel with one-click payment for Dodo services Merchants can customize Dodo services via Dodo Manager, the control panel for Spoqa's services. Merchant's credit card information is linked to Dodo Manager for easy payments.

Spoqa has many strategic partners and clients, and have been acknowledged in various media coverage and awards.

Table 3. Spoqa's key partners, clients, and media coverage

Strategic partners

kakao **LINE** facebook

Major clients

GRAND | HYATT®   JW MARRIOTT.

Media coverage

 
Forbes FINANCIAL TIMES

Awards

4.2. Strategy to Encourage Participation by Partner Companies

Although Spoqa could initially help secure merchants and consumers as Carry Protocol's first key partner, it is important for other key players to participate to form a healthy ecosystem. It is therefore crucial to secure as many partners as possible early on for the successful launch of the service and for the continued growth of Carry Protocol.

In the initial phase, Carry Protocol aims to partner with businesses that have relevance to Carry Protocol. These businesses will be similar to the value-added service providers. For example, exchanges could function as settlement service providers and businesses that manage points for consumers through apps or that run cryptocurrency wallets could take part as wallet service providers. Companies like Spoqa, as well as franchise businesses, could become device providers, and ad-tech companies that develop DMP (data management platforms) could become advertising service providers.

Carry Protocol benefits many different partners, and offers the following rewards for our partners:

4.2.1. Rewards for device providers

Device providers are crucial partners for the successful launch of Carry Protocol. One of the reasons that Spoqa is such an important partner to Carry Protocol is because it has 10,000 merchants and can function as a device provider to Carry. Companies like Spoqa will be able to take part in Carry Protocol as device providers, and partnering with large franchises as device providers could help Carry Protocol achieve rapid growth.

The rewards program for device providers is defined as a function of two parameters: number of partner merchants device provider brings into Carry ecosystem, and relative timing. If a merchant that the partner is managing joins Carry Protocol and builds a system, Carry Protocol will send CRE to the partner. Merchants can designate their partners at the time they join Carry, similar to writing down the friend who recommended you to a website when signing up for an online service. An important point here is that the number of CRE's that a partner receives is reduced as the number of merchants grows, rewarding partners more in the earlier stage for bringing in merchants since this will have a bigger impact on overall network effect. Carry Protocol's first key partner, Spoqa, will also be rewarded accordingly.

Rewards must be given not only to the device providers but also the merchants for the service to spread faster. Therefore, merchants will also be rewarded with a fixed amount of CRE's following the "recommend a friend" concept. Partners could also offer the merchant a portion of their own CRE as incentive for the merchant to join, and this would be entirely up to the partner.

4.2.2. Rewards for wallet service providers

Wallet service providers are just as crucial as device providers. They have similar relationships with consumers as device providers have with merchants. Therefore, a fixed amount of CRE will be given to a wallet service provider when a consumer uses the protocol more than once. Similarly to device providers, the number of CRE's will decline as the number of consumers increase.

4.2.3. Rewards for other partners

Settlement and advertising service providers are partners that will become more meaningful as Carry Protocol grows. Therefore, they are not included in the initial token distribution plan. Once Carry Protocol launches and their services gain importance, these partners will be rewarded via Carry Pool or other means as necessary.

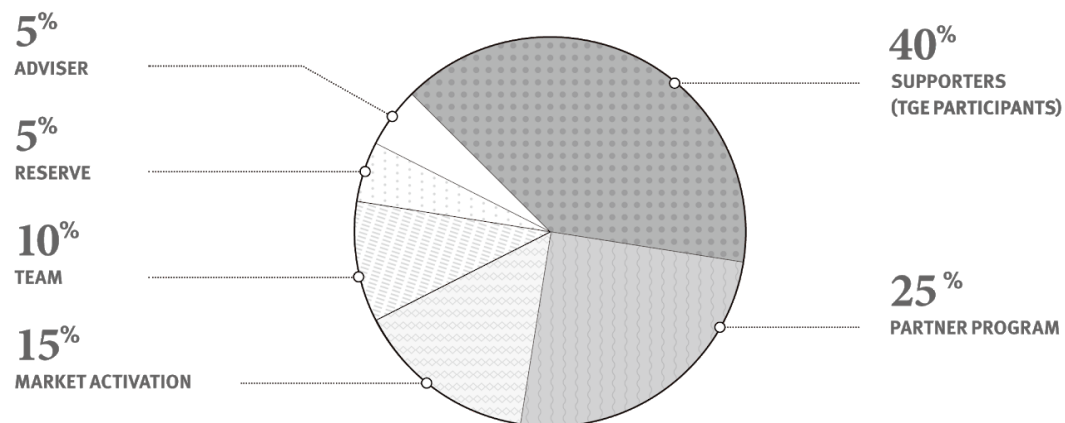
5. Token Generation Event (TGE)

5.1. Token Distribution

Carry Tokens (CRE) are issued to develop Carry Protocol and build its ecosystem. Supporters can take part in the token generation event by sending cryptocurrency. The exchange rate of tokens to be given to participants will be defined via an announcement on Carry Protocol communication channels (website, Facebook, Twitter, etc.) prior to the TGE.

10 billion tokens will be issued, 40% of which will be made available to TGE participants. About 25% of the tokens will be for the partner program mentioned above (4.2), 15% for market activation such as airdrop for merchants and consumers, 10% for the Carry Team that is working to build the ecosystem, 5% for advisors helping to launch Carry Protocol, and 5% as reserve.

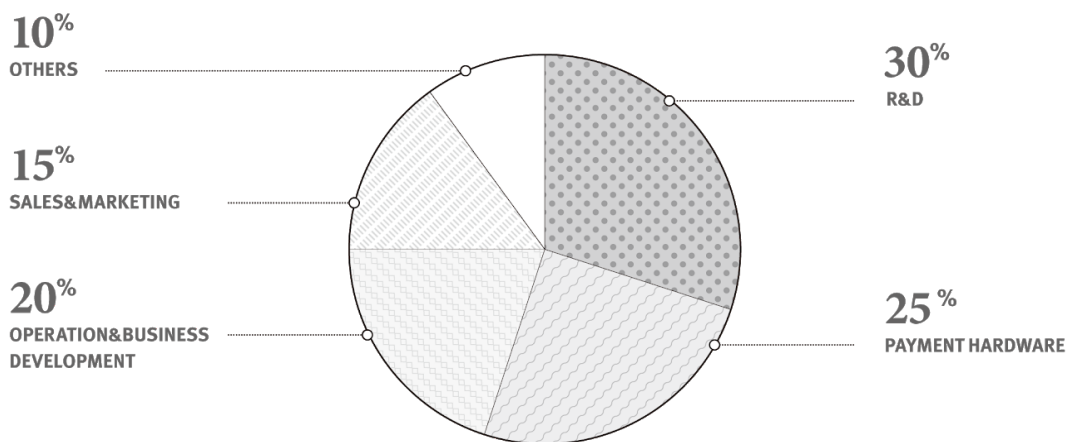
Figure 14. Token Distribution



5.2. Use of Funds

The funds raised through TGE will be used to develop Carry Protocol and build its ecosystem. About 30% of the funds will be used on the core research and development (R&D), 25% to provide the necessary devices to merchants (payment hardware), 20% for overall business operation to operate Carry Protocol and help the business gain stability (operation & business development), 15% to promote awareness and actual usage of Carry Protocol in the real world (sales & marketing), and 10% will be reserved for other uses. The distribution of funds is only an estimate, and is subject to change in the future if deemed necessary to promote Carry Protocol.

Figure 16. Use of Funds



5.3. Roadmap

Based on the current timeline, we expect to complete TGE by the third quarter of 2018 and to develop basic components to launch Testnet by fourth quarter of 2018. The goal is to have the system up and running in the market sometime in the second half of 2019, with the launch of Mainnet and basic API for 3rd Party participation available in the first half of 2019.

2018 H2	2019 H1	2019 H2	2020 H1
Protocol Building		Application Building	
Smart Contract	Reference Wallet	Production Wallet	Ad Management System
Protocol API	Reference Point-of-Sale	Production Point-of-Sale	

6. Legal disclaimers

Please read this entire section carefully. If you are in any doubt as to the action you should take, please consult your legal, financial, tax or other professional advisor(s).

6.1. Legal Statement

(a) This whitepaper (“Whitepaper”), in its current form, is circulated for general information purposes only in relation to the Carry Protocol project as presently conceived and is subject to review and revision. Please note that this Whitepaper is a work in progress and the information in this Whitepaper is current only as of the date on the cover hereof. Thereafter, the information, including information concerning their Carry Protocol business operations and financial conditions, may have changed. We reserve the right to update the Whitepaper from time to time.

(b) No person is bound to enter into any contract or binding legal commitment in relation to the sale and purchase of Carry Tokens (“CRE”) and no payment is to be accepted on the basis of this Whitepaper. Any sale and purchase of CRE will be governed by a legally binding agreement, the details of which will be made available separately from this Whitepaper. In the event of any inconsistencies between the abovementioned agreement and this Whitepaper, the former shall prevail.

(c) This Whitepaper does not constitute or form part of any opinion on any advice to sell, or any solicitation of any offer by the issuer/distributor/vendor of CRE to purchase any CRE nor shall it or any part of it nor the fact of its presentation form the basis of, or be relied upon in connection with, any contract or investment decision.

(d) CRE is not intended to constitute securities, units in a business trust, or units in a collective investment scheme, each as defined under the Securities and Futures Act (Cap. 289) of Singapore, or its equivalent in any other jurisdiction. Accordingly, this Whitepaper therefore, does not, and is not intended to, constitute a prospectus, profile statement, or offer document of any sort, and should not be construed as an offer of securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment, or a solicitation for any form of investment in any jurisdiction.

(e) No CRE should be construed, interpreted, classified or treated as enabling, or according any opportunity to, purchasers to participate in or receive profits, income, or other payments or

returns arising from or in connection with the Carry Protocol platform, CRE, or products, or to receive sums paid out of such profits, income, or other payments or returns.

(f) This Whitepaper or any part hereof may not be reproduced, distributed or otherwise disseminated in any jurisdiction where offering coins/tokens in the manner set out this Whitepaper is regulated or prohibited.

(g) No regulatory authority has reviewed, examined or approved of any of the information set out in this Whitepaper. No such action has been or will be taken in any jurisdiction.

(h) Where you wish to purchase any CRE, the CRE are not to be construed, interpreted, classified or treated as: (a) any kind of currency other than cryptocurrency; (b) debentures, stocks or shares issued by any entity; (c) rights, options or derivatives in respect of such debentures, stocks or shares; (d) rights under a contract for differences or under any other contract with the purpose or pretended purpose to secure a profit or avoid a loss; or (e) units or derivatives in a collective investment scheme or business trust, or any other type of securities.

6.2. Restrictions on Distribution and Dissemination

(a) The distribution or dissemination of this Whitepaper or any part thereof may be prohibited or restricted by the laws or regulatory requirements of any jurisdiction. In the case where any restriction applies, you are to inform yourself about, to obtain legal and other relevant advice on, and to observe, any restrictions which are applicable to your possession of this Whitepaper or such part thereof (as the case may be) at your own expense and without liability to Carry or its representatives, agents, and related companies (“Affiliates”).

(b) Persons to whom a copy of this Whitepaper has been distributed or disseminated, provided access to or who otherwise have the Whitepaper in their possession shall not circulate it to any other persons, reproduce or otherwise distribute this Whitepaper or any information contained herein for any purpose whatsoever nor permit or cause the same to occur.

6.3. Disclaimer of Liability

(a) The CRE and related services provided by Carry and its Affiliates are provided on an “as is” and “as available” basis. Carry and its Affiliates do not grant any warranties or make any representation, express or implied or otherwise, as to the accessibility, quality, suitability, accuracy, adequacy, or completeness of the CRE or any related services provided by Carry and its Affiliates, and expressly disclaim any liability for errors, delays, or omissions in, or for any action taken in reliance on, the CRE and related services provided by Carry and its Affiliates.

(b) Carry and its Affiliates do not make or purport to make, and hereby disclaim, any representation, warranty or undertaking in any form whatsoever to any entity or person, including any representation, warranty or undertaking in relation to the truth, accuracy and completeness of any of the information set out in this Whitepaper.

(c) To the maximum extent permitted by the applicable laws and regulations, Carry and its Affiliates shall not be liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with any acceptance of or reliance on this Whitepaper or any part thereof by you.

6.4. Cautionary Note on Forward-Looking Statements

(a) Certain information set forth in this Whitepaper includes forward-looking information regarding the future of the project, future events and projections. These statements are not statements of historical fact and may be identified by but not limited to words and phrases such as “will”, “estimate”, “believe”, “expect”, “project”, “anticipate”, or words of similar meaning. Such forward-looking statements are also included in other publicly available materials such as presentations, interviews, videos etc., information contained in this Whitepaper constitutes forward-looking statements including but not limited to future results, performance, or achievements of Carry or its Affiliates.

(b) The forward-looking statements involve a variety of risks and uncertainties. These statements are not guarantees of future performance and no undue reliance should be placed on them. Should any of these risks or uncertainties materialise, the actual performance and progress of Carry or its Affiliates might differ from expectations set by the forward-looking statements. Carry or its Affiliates undertake no obligation to update forward-looking statements should there be any change in circumstances. By acting upon forward-looking information received from this Whitepaper, Carry or its Affiliates’ website and other materials produced by Carry or its Affiliates, you personally bear full responsibility in the event where the forward-looking statements do not materialize.

(c) As of the date of this Whitepaper, the Carry Protocol platform has not been completed and is not fully operational. Any description pertaining to and regarding the Carry Protocol platform is made on the basis that the Carry Protocol platform will be completed and be fully operational. However, this paragraph shall in no way be construed as providing any form of guarantee or assurance that the Carry Protocol platform will eventually be completed or be fully operational.

6.5. Potential Risks

(a) Please carefully read every piece of information, understand and analyse the risks and related factors before deciding to participate and purchase the CRE. The risks include, but are not limited to:

- (i) risk of losing access to CRE due to loss of identification information, loss of requisite private key(s) associated with the digital wallet storing the CRE or any other kind of custodial or purchaser errors;
- (ii) fluctuations of the value of CRE post-issuance due to the general global market and economic conditions. Such volatility in the value of the CRE may lead to Carry not being able to fund the development of the Carry Protocol ecosystem, or may not be able to maintain the Carry Protocol ecosystem in the manner intended;
- (iii) changes in political, social, economic and stock or cryptocurrency market conditions, and the regulatory environment in the countries in which Carry or its Affiliates conduct their businesses and operations, and the ability of Carry or its Affiliates to survive or compete under such conditions. It is possible that certain jurisdictions will apply existing regulations on, or introduce new regulations addressing, blockchain technology, which may be contrary to the CRE and/or the Carry Protocol ecosystem which may, inter alia, result in substantial modifications of the Carry Protocol ecosystem and the Carry Protocol project, including termination and loss of CRE;
- (iv) changes in the future capital needs of Carry or its Affiliates and the availability of financing and capital to fund such needs. A lack of funding could impact the development of the Carry Protocol platform and the uses or potential value of the CRE;
- (v) for a number of reasons including, but not limited to, an unfavorable fluctuation in the value of CRE, the failure of business relationships or competing intellectual property claims during development or operation, the Carry Protocol project may no longer be a viable activity and may be dissolved or simply not launched, negatively impacting the Carry Protocol ecosystem, the CRE and the potential utility of the CRE;
- (vi) the lack of interest from large number of companies, individuals and other organizations for the Carry Protocol platform and services and that there may be limited public interest in the creation and development of distributed applications. Such a lack of interest could lead to a lack of funding and also impact the development of the Carry Protocol platform and the uses or potential value of the CRE;
- (vii) significant changes made to the features or specifications of the CRE or the Carry Protocol platform before the release or implementation of the Carry Protocol project and/or the Carry Protocol ecosystem. While Carry intends for the CRE and the Carry Protocol ecosystem to function as described in the Whitepaper, Carry may nevertheless make such changes;

- (viii) competition from alternative platforms that may have been established, which could potentially adversely impact the CRE and the Carry Protocol platform (e.g. lack of commercial success or prospects caused by competing projects);
- (ix) interference with the use of CRE and the infrastructure of the Carry Protocol platform due to any weaknesses or malware that may be intentionally or unintentionally introduced into the software of the Carry Protocol platform, whether or not by a third party. The blockchain used for the platform is also vulnerable to attacks which pose a risk to the platform and the performance of related services;
- (x) occurrences of catastrophic events, natural disasters and acts of God that affect the businesses or operations of Carry or its Affiliates and other factors beyond the control of Carry or its Affiliates. This includes mining attacks, attacks by hackers or other individuals that could result in theft or loss of proceeds of the CRE sale, or the CRE and impacting the ability to develop the Carry Protocol ecosystem;
- (xi) CRE and other cryptocurrencies are a new, untested technology and constantly developing. The full functionality of the CRE are not yet complete and no assurance can be provided of such completion. As technology matures, developments in cryptographic technologies and techniques or changes in consensus protocol or algorithms could present risks to the CRE, the CRE sale, the Carry Protocol project and/or the Carry Protocol ecosystem, including the utility of the CRE;
- (xii) CRE confer no governance rights of any kind with respect to the Carry Protocol project, the Carry Protocol ecosystem and/or Carry and all decisions will be made by Carry at its sole discretion, including decisions to discontinue the Carry's products or services, the Carry Protocol project and/or Carry Protocol ecosystem to create and sell more CRE for use in the Carry Protocol ecosystem or to sell or liquidate Carry; and
- (xiii) The tax treatment and accounting of the CRE is uncertain and may vary amongst jurisdictions. There may be adverse tax consequences and independent tax advice in connection with purchasing CRE should be obtained.

In addition to the risks stipulated above, there are other risks that Carry and its Affiliates cannot predict. Risks may also occur as unanticipated combinations or as changes in the risks stipulated herein.

- (b) If any of such risks and uncertainties develops into actual events, the business, financial condition, results of operations and prospects of Carry or its Affiliates could be materially and adversely affected. In such cases, you may lose all or part of the value of the CRE.

6.6. No Further Information or Update

No person has been or is authorised to give any information or representation not contained in this Whitepaper in connection with the CRE, Carry or its Affiliates and their respective businesses and operations, and, if given, such information or representation must not be relied upon as having been authorised by or on behalf of Carry or its Affiliates.

6.7. No Advice

No information in this Whitepaper should be considered to be business, legal, financial or tax advice regarding the CRE, Carry or its Affiliates. You should consult your own legal, financial, tax or other professional advisor(s) regarding the CRE, Carry or its Affiliates and their respective businesses and operations. You should be aware that you may be required to bear the financial risk of any purchase of CRE for an indefinite period of time.

7. Contacts

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