CYPHERCAPITAL

May 2018

DENT Wireless – Examining a distributed market place for connecting mobile data market participants

Abstract

DENT Wireless is developing an Ethereum blockchain based exchange marketplace for buying and selling mobile data allowances, and for buying and gifting top-ups for various mobile services. An ERC20 Ethereum token, DENT, has been issued for the marketplace. Their intention in creating a single marketplace to buy and sell data for various MNOs, their customers, and other organisations, such as providers of sponsored data, is to create new markets, and connect previously siloed ones. The potential exists to exploit network effects. We estimate that $1B in annual volume may be a reasonable long-term target for DENT's out-of-bundle data to-ups exchange volume. By comparison, Syniverse, the leading mobile network interoperability firm, handles ~ $15B of settlements between wholesale customers annually. Use of an ERC20 token may allow DENT some degree of control over the economics of its platform and currency – they may use their token to act like a central bank for their marketplace, exercising a degree of control over token supply and circulation velocity.

Introduction

DENT Wireless is a company that is using Ethereum blockchain technology to develop marketplaces for mobile data exchange and mobile top-up payment remittance. Accordingly, they issued an ERC20 utility token, DENT, which will be used for all exchange transactions.

Their primary focus is an exchange that allows consumers and Mobile Networks Operators (MNOs) to buy and sell unused mobile data allowances. Mobile network yearly revenue is estimated to be on the order of $1T[1], with out-of-plan data purchases perhaps 12% of the retail market.[2] Clearly a considerable market opportunity exists for a company able to effectively execute in this space.

The exchange is intended to act as a method for spot pricing of data to maximise MNO revenue, such as electricity providers sell energy at spot prices based on dynamic supply and demand. Increased MNO revenue from allowing consumers to sell unused data on exchanges, has been suggested by academic study of econometric models, where increased overall data usage outpaces consumer savings.[3] Likewise, there are economic benefits derived from the efficiency of wholesale commodity markets with spot-pricing – though careful economic design may be needed to distribute those benefits as desired[4]. The real-world attractiveness for MNOs of exchanges is indicated by DENT's development deals with providers such as AT&T and Verizon in America, and Telcel (a subsidiary of América Móvil) and Movistar (subsidiary of Telefónica) in Mexico. Further, major MNOs in Hong Kong, China, and South Korea are already operating their own exchanges. DENT however, allows these disparate markets to be connected.

As demonstrated by their development deals, the primary institutional users of this marketplace will be MNOs such as AT&T – mainly selling data – or Mobile Virtual Networks Operators (MVNOs) – buying and selling; providers of sponsored data for consumers who choose to participate in advertising or data gathering in exchange for said data – buying and selling; and companies coordinating sales of roaming data between MNOs, and between MNOs and end users – buying and selling. The considerable competitive pressure acting upon MNO revenues likely increases the attractiveness of DENT's marketplace for them.

The question must now be asked: why use blockchain technology for the exchange, and why use a utility token?

---

[1] GSM Association Intelligence. https://www.gsmaintelligence.com/

[2] Ofcom Communications Market Report 2017. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/105074/cmr-2017-uk.pdf

[3] H. Susanto, H. Zhang, S.-Y. Ho, and B. Liu, "Effective Mobile Data Trading in Secondary Ad-hoc Market with Heterogeneous and Dynamic Environment," in *2017 IEEE 37th International Conference on Distributed Computing Systems (ICDCS)*, 2017, pp. 645–655

J. Yu, M. H. Cheung, and J. Huang, "Economics of mobile data trading market," in *2017 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, 2017, pp. 1–8.

[4] F. A. Wolak, "Measuring the benefits of greater spatial granularity in short-term pricing in wholesale electricity markets," in *American Economic Review*, 2011, vol. 101, no. 3, pp. 247–252.

Traditional financial exchanges are investigating migration to blockchain settlement, which offers cost reductions and increased security and transparency.[5] The transparency of public blockchains, such as Ethereum, allows coordination between multiple parties in a verifiably fair and transparent manner – important when facilitating deals between competing corporate entities, and with consumers weary of financial markets and telecommunication companies. Most importantly though, blockchain and distributed ledger systems may reduce the cost of economic networking, allowing more rapid growth, bringing together more market participants, and connecting previously siloed markets. This potential is further examined in the section below.

Additionally, Ethereum is an international system that does not vary in operation with location. Its decentralised nature means it may offer high scalability for an exchange without a high degree of dedicated, localised infrastructure.

On the other hand, the exchange must be efficiently designed to accommodate Ethereum transaction fees and processing delays, and cost reductions must be balanced against currency risk and hedging costs. Further, DENT is taking an institutional risk by depending on the future development, scaling, and security of the Ethereum blockchain. Cryptocurrency tokens may be able to be forked and transferred to a different blockchains in the future though. Cryptocurrency legal status presents an additional risk – cryptocurrencies are already prohibited in China, denying a DENT coin exchange access there at present.

Finally, use of an ERC20 token may allow DENT some degree of control over the economics of its platform that they may not have if simply using Ethereum itself as their currency – DENT may use its token to act like a central bank for its own market's economy, exercising a degree of control over token supply and circulation velocity, and hence token price and liquidity. Notably, the permissive terms of their ICO grants them a lot of flexibility with how coins are issued, circulated, and possibly burned.

[5] ASX Says Yes: Stock Market to Settle Trades with DLT. CoinDesk. 2017. Available at: https://www.coindesk.com/asx-says-yes-securities-exchange-approves-dlt-replacement-post-trade-system/

DENT's System and Blockchain Marketplaces

Much discussion has been made about the disruptive potential of *open*, *distributed*, or *permissionless* systems enabled by blockchains and other distributed ledger technologies. Christian Catalini (MIT) and Joshua S. Gans (University of Toronto) have contributed, perhaps, the most acute analysis of why there is such potential.[6]

Their contention is that blockchains create two potential advantages: (a) reduction of cost of verification, and (b) reduction of the cost of networking. The former eliminates reliance on trusted intermediaries from the marketplace, and creates the possibility of lower transaction costs. While reducing transaction costs has proved challenging so far, and is an on-going area of contention, removal of intermediaries has underpinned the successful growth of Bitcoin (distributed currency) and Ethereum (distributed computing and smart contract execution). The latter advantage stems from removal of those intermediaries – their informational advantage and control of infrastructure can give them great market power, with vendor and customer lock-in, and higher prices. Without these intermediaries, market participants can interact freely on the same network, giving great potential for network growth, and unlocking siloed markets that previously could not interact.

It is this potential for network growth that underpins DENT's business model. By creating a single marketplace to buy and sell data for various MNOs, their customers, and other organisations, such as providers of sponsored data, they are creating new markets, and connecting previously siloed ones. Their action here is to capture revenue by expanding this network and facilitating previously infeasible or inefficient trade. Of note is that this single, distributed marketplace enables any organisation that can adapt to it to participate, rather than requiring the marketplace software to adapt to every participating organisation. This may reduce the cost of connecting different organisations and markets by putting them on a single ledger system.

Further, DENT's expansion of its system to allow purchase and remittance of airtime, and other mobile top-ups, is an example of connecting previously separate markets and participants – in this case effectively allowing exchange of data for other top-ups, and doing so across borders and between customers, regardless of their MNO. This demonstrates how a single system can connect multiple mobile related services, with multiple balances/ledgers, making them fungible and tradable.

Additionally, market information can have considerable value for machine learning training sets, and "big data" market analysis. An open, distributed marketplace would reduce the ability of any one intermediary or participant to dominate control of this information, further encouraging competition.

Transactions and economic advantages that might be found in DENT's marketplace can be illustrated with the mobile roaming market – a market where there is regulatory pressure to reduce consumer costs.

[6] Catalini, C. and Gans, J.S., 2016. *Some simple economics of the blockchain* (No. w22952). National Bureau of Economic Research. http://www.nber.org/papers/w22952

- Roaming customers have an obvious motivation – roaming charges can be expensive, and directly buying data in another country generally requires purchase, registration, and use of a new SIM (in place of their existing one, preventing use of their current phone number).

- According to a recent Pew Centre study, 63% of American smartphone owners rarely or never exceed their plan's data allowance[7], so there is likely to be much excess data available to be sold by consumers on the exchange, at least in Western countries.

- MNOs can increase the utilisation of their infrastructure and raise total revenue. They can achieve this by: allowing customer trading of data; by selling more data to roaming customers via directly connecting the effectively siloed, or expensively connected markets; by reducing the cost of data by avoiding transmission to a subscriber's home MNO and back; and by exploiting spot market advantages.

- Wholesale roaming vendors/traders, MVNO roaming package vendors, and sponsored data providers can acquire data from MNO customer excess or spot market sales, and can connect with many more potential customers due to the direct interaction of various markets on the exchange.

Figures 1 and 2 below illustrate these market connections with and without DENT.

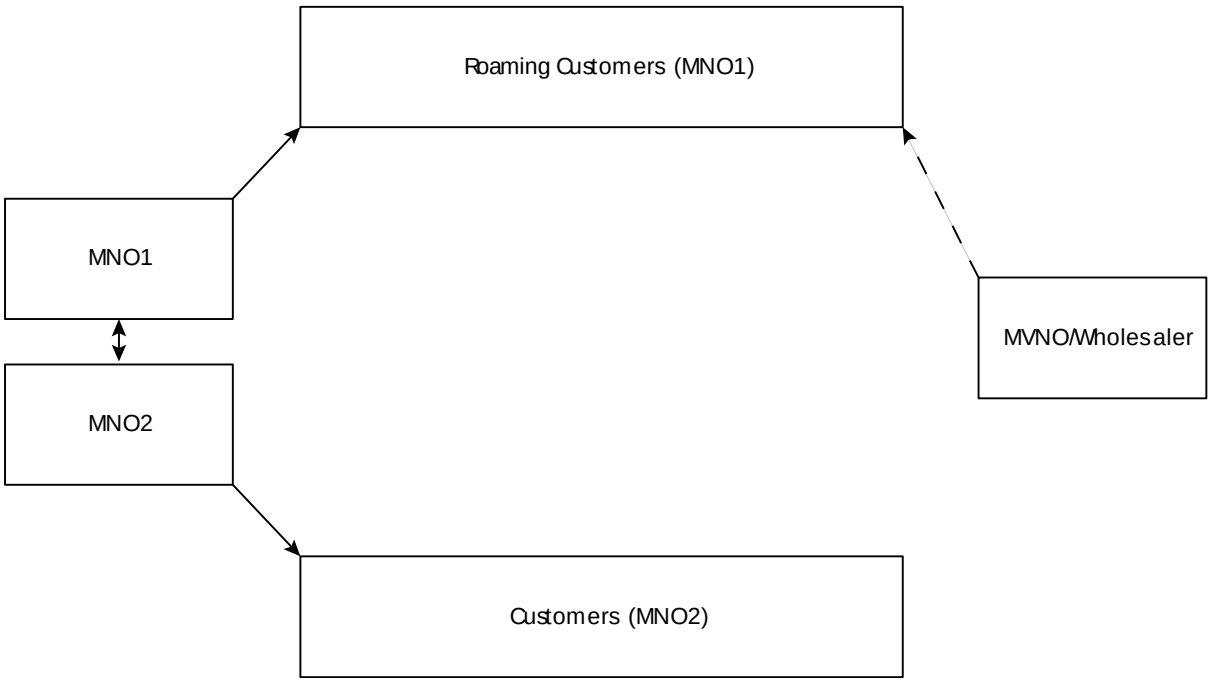

Fig. 1, Simplified illustration of transaction flows between roaming market participants in current markets with one MNO per countries 1 and 2, and one MVNO or wholesaler servicing roaming customers. Dashed line

[7] Pew Research Center, April, 2015, "The Smartphone Difference" Available at: http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/

between MVNO and roaming customer indicates current expense and lack of convenience of third-party packages

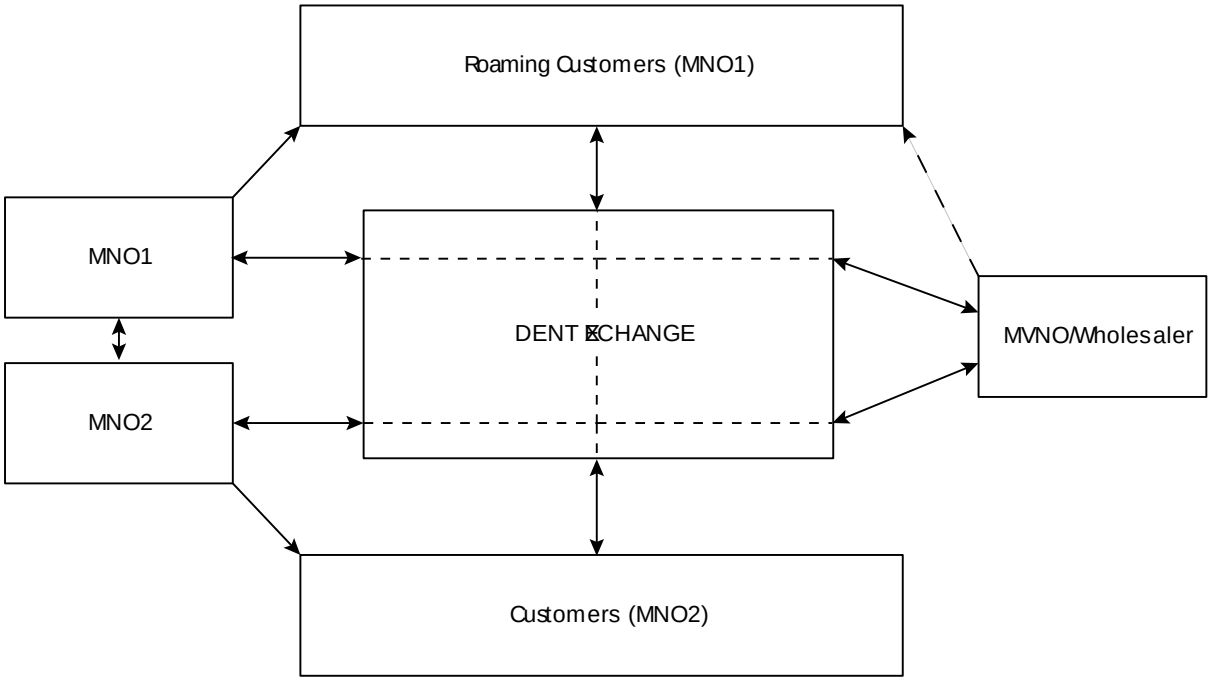

Fig. 2, Simplified illustration of transaction flows between roaming market participants in DENT markets with one MNO per countries 1 and 2, and one MVNO or wholesaler servicing roaming customers. Dashed line between MVNO and roaming customer indicates current expense and lack of convenience of third-party packages. Dashed lines inside DENT Exchange indicate connections between participants on the exchange.

DENT has chosen to operate its exchange using the ERC20 DENT token. Though Ethereum has non-trivial transaction costs, there are several reasons for making this choice:

- Ethereum is an open, distributed system that allows transparency and auditability of exchange operations. This allows competing companies, and wary customers, to participate in the market with a degree of assurance of fairness and transparency. This encourages competition, and limits the power of any single participant (e.g. a large MNO), which should favour network growth.

- Ethereum is an established ecosystem with miners, analysts, and various other services. Unlike some private or enterprise distributed ledgers, it is very much in commercial use, and has handled transaction volumes of > $10B per day in 2018.[8] Additionally, it does not require DENT to invest as much in exchange infrastructure, due to its distributed nature and incentives – use of the network itself supports infrastructure investment. As an international system, that does not vary in operation with location, investment in different infrastructure for different locations is not required. The network incentive may further support scalability in the future.

[8] https://coinmetrics.io/charts/#assets=eth

- Considerable reductions in transaction costs can be achieved by appropriate bundling of exchange transactions before processing them on the blockchain[9], and by future use of state channels.[10] Given that customer transactions can be on the order of a few dollars, this must be an area of focus, and demonstrations of transaction costs from DENT are desirable for investors and potential participants.

- Use of the DENT ERC20 token, rather than US Dollars, allows access to the Ethereum network. Using a single market cryptocurrency (DENT) simplifies cross-border price comparisons, and may reduce cross-border payment costs.

- Using DENT tokens, rather than dollars, as their unit of exchange may allow greater control over exchange design parameters – i.e. use of more measures to keep funds on the exchange, rather than being rapidly removed, with the aim of increasing value in the exchange. This may also encourage MNO participation.

- Finally, as noted earlier, use of an ERC20 token allows DENT some degree of control over the economics of its platform that they may not have if simply using Ethereum's Ether currency. DENT may use its token to act like a central bank for its own market's economy, exercising a degree of control over token supply and circulation velocity. Control of supply may enable better control of how bonuses, and other inducements, affect the marketplace. e.g. Use of smart contracts to control the timing for removal of funds, or issue of incentives/bonuses for keeping funds in the exchange. The aim would be to encourage people to spend their earned DENT in the exchange, and their control of the token's economy would give them options to do so. This may help MNOs use the exchange to increase their revenue, and hence encourage their adoption of the marketplace.

[9] An analysis of batching in Bitcoin - Coin Metrics. Available at: https://coinmetrics.io/batching/

Saving up to 80% on Bitcoin transaction fees by batching payments. Available at: https://bitcointechtalk.com/saving-up-to-80-on-bitcoin-transaction-fees-by-batching-payments-4147ab7009fb

[10] FunFair – Valuation of a Blockchain Gambling Token. Available at: https://cypher.capital/wp-content/uploads/2017/10/FUN_Valuation_by_Cypher_Capital_October2017.pdf

Total Addressable Market and Penetration

The GSM Association reported 2017 mobile revenue as $1.051T, projected to rise to $1.080T by 2020 and $1.095T by 2025.[11] Detailed breakdowns of these figures into retail and wholesale data, voice, SMS, and other activities are not readily available. However, the UK Office of Communications (Ofcom) does publish some revenue structure data, which is summarised in Table 1 below.

	£B
Total Telecom operator-reported revenue	35.6
Telecom operator-reported retail revenue	29.6
Telecom operator-reported wholesale revenue	6.0
Mobile retail revenue	15.3
Estimated mobile wholesale revenue	3.1
Estimated total mobile revenue	18.4
4G subscribers (millions)	52.4
M2M subscribers (millions)	7.6

Table 1, Ofcom UK Telecom revenue estimates for 2016.[12] Mobile wholesale revenues were estimated by this report's authors by taking the product of total wholesale revenue and the ratio of mobile retail to total retail revenue. Number of active mobile subscribers includes machine to machine (M2M) connections.

Ofcom further broke down retail mobile revenue, as displayed in Table 2.

	£B
Out of Bundle Data	1.8
Out of Bundle Messaging	0.7
Out of Bundle Calls	2.0
Access and Bundled Services	10.9

Table 2, Ofcom UK mobile retail revenue estimates by service.

From this data we can estimate that retail mobile revenue in 2017 was $870B, with out-of-bundle data purchases at $102B. Clearly these are considerable markets. UK out-of-bundle purchase per subscriber averaged at $46/year. Further, despite flat total mobile revenue, Juniper Research estimated that global roaming data revenues would rise from $21B in 2017 to $31B by 2022.[13]

Taking DENT's primary market as out-of-bundle data purchases, we estimate that their total addressable market (TAM) was $102B in 2017, rising to $105B in 2020 and $106B in 2025. The other mobile revenue streams are addressable via their airtime top-ups market (out-of-bundle calls in 2017

[11] GSM Association, *The Mobile Economy 2018*. Available at: https://www.gsma.com/mobileeconomy/wp-content/uploads/2018/02/The-Mobile-Economy-Global-2018.pdf

[12] Ofcom Communications Market Report 2017. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/105074/cmr-2017-uk.pdf

[13] https://www.wirelessweek.com/data-focus/2017/09/mobile-data-roaming-revenues-hit-31-billion-2022

~ $113B, out-of-bundle messaging ~ $40B) and remittances programs (domestic top-up remittances estimated to reach $10B by 2018[14]), but these are not subject to the same degree of market disruption that their data exchange marketplace could create. Accordingly, they are not expected to have the same magnitude of market penetration.

Wholesale data trading may be a significant growth market, with the total wholesale mobile market estimated at $177B from the Ofcom data. Other high growth data markets are expected to be from Internet-of-Things (IoT) and M2M connections.

DENT's ability to penetrate these markets will depend on their efforts to attract MNOs, end-users, and wholesale market participating firms, with end-user top-up (data or otherwise) purchases forming their primary market. End-users will use DENT via a mobile app, with their adoption decision making based upon awareness and attractiveness of the app, participation of relevant MNOs, and economic benefit (reduced top-up cost).

DENT has signed deals with influential MNOs such as AT&T and Verizon in America, Telcel and Movistar in Mexico, and Oi in Brazil, for data trading, and sponsored data providers such as Aquto and Datami. Provided that it can continue expanding its access to MNO customers via such deals, adoption will depend on app installation and usage trends. In return, MNO customer usage rates of DENT's marketplace will likely drive adoption by more MNOs. DENT is currently beta testing in Bangladesh, Costa Rica, El Salvador, Guatemala, Haiti, Honduras, India, Indonesia, Morocco, Nicaragua, Nigeria, Philippines, and South Africa.[15]

Taking the Ofcom figure of $46/year out-of-bundle data per 4G subscriber, projections of DENT exchange volumes can be examined. e.g. Assume that DENT users purchase more data than typical customers, say $100/year, and that they would make half of those purchase from the exchange. That gives $50/year/user in exchange volume for western markets, implying 2M customers would be needed for $100M annual volume, and 20M for $1B volume. US smartphone users were estimated to number 226M in 2017[16]; 2M customers are less than 1% of that number, and less than 0.5% of North American and European users.

DENT announced on May 21 that it had 150,000 users, up from 100,000 three days earlier.[17] Their iOS app launched on December 29 2017, and their Android app on February 27 2018. Their stated aim is to reach 1M users by mid year. Currently the apps allow purchasing DENT coins, buying data packs, and sending them to friends. Activation of data trading in the mobile and web apps is intended to occur before the end of Q3 2018. On 23 February 2018 DENT and the MVNO PLDT HK successfully completed a trial of data trading on the exchange with a limited number of the MVNO's Hong Kong customers.[18]

---

[14] Domestic Money Transfer Market to Exceed $500bn for Mobile Transactions by 2018, Driven by P2P Services. Available at: https://finance.yahoo.com/news/domestic-money-transfer-market-exceed-143000175.html

[15] https://twitter.com/dentcoin/status/994463885833981952

[16] https://newzoo.com/insights/rankings/top-50-countries-by-smartphone-penetration-and-users/

[17] https://twitter.com/dentcoin/status/998520657611821057

[18] https://www.dentwireless.com/dent-pldt-news

Given the expected growth of 4G subscribers to > 3B in 2019[19], with even higher estimates of smartphone users, $1B in annual volume may be a reasonable long-term target for DENT's out-of-bundle data to-ups exchange volume. Mobile application quality, exchange user experience, MNO adoption, and end-user marketing will all be crucial in getting there. By comparison, Syniverse, the leading mobile network interoperability firm, handles ~ $15B of settlements between wholesale customers annually.[20]

Finally, we have chosen not to attempt a valuation of the DENT token. As mentioned earlier, DENT's control of their exchange, which is the only place to use DENT tokens for purchasing goods or services, combined with the permissive terms of the ICO, and their supply of tokens, may allow them to act like a central bank for the token. It is conceivable that they may exercise a degree of control over token supply and circulation velocity, and hence token price and liquidity. Notably, the permissive terms of their ICO grants them a lot of flexibility with how coins are issued, circulated, and possibly burned. Given this uncertainty in estimating circulating supply and velocity, it is currently not appropriate to offer price estimates.

[19] GSM Association, The Mobile Economy 2018. Available at: https://www.gsma.com/mobileeconomy/wp-content/uploads/2018/02/The-Mobile-Economy-Global-2018.pdf

[20] Syniverse Holdings, Inc, Form10-K, 2017. Available at: https://bit.ly/2rYC3xN

Market Execution

DENT's business model, technical characteristics, and market opportunities were discussed in previous sections. The factors determining their ability to penetrate the market are examined here.

Successful market penetration will depend upon three factors: the attractiveness of the app and market place to consumers, adoption by MNOs and other institutional participants, and DENT's marketing and promotional plans. Driving all those factors is the quality of the management team. DENT's team has extensive experience with mobile applications, billing services, internet software development, and mobile industry business and product development. Due to the youthful nature of the blockchain field, there is less experience available with developing distributed Ethereum applications.

The utility of the app and exchange for customers will depend upon their quality, on the MNOs supporting them, and the number of customers trading data in their desired markets. The latter represents a network effect, with the exchange increasingly attractive as it expands. This may also give first mover advantages to whomever can establish relatively popular exchanges first in each market. The DENT apps are attractive and functional, and boast strong early adoption. The teams' experience, and prior success, with mobile apps suggests that strong app development will continue, with appropriate marketing and promotional campaigns.

In-app payments will be another critical area for execution, especially with the added layer of using an ERC20 token. Payment coordination with MNOs and other institutional partners will also be important. DENT employs an internet payment specialist, and again has extensive experience with mobile app development.

As noted earlier, DENT has launched partnerships with a number of MNOs, and sponsored data providers, in several countries, with beta trials underway in many more. MNO adoption has no doubt been aided by their SVP of Telco Operations, Ramon Greep, who spent 11 years with Deutsche Telekom in senior product management, business development, and strategy roles. Recruitment of specialists with regional expertise will be important for maintaining this momentum. Currently they employ market specialists for Japan, China, and Korea – countries where MNOs have already offered data trading to their customers.

DENT will need to manage their exchange-based marketplace efficiently, and employ appropriate trading strategies to ensure price stability of their tokens. Scaling transaction volume and maintaining transaction speeds are always concerns with cryptocurrency products. Ethereum has supported volumes of > $10B per day[21], in comparison with the $1B annual volume targeted for DENT in this whitepaper. Transaction batching and state channels are two techniques available to exchanges for reducing transaction costs, and will be important for this exchange too. As mentioned earlier, their control of the exchange, which is the only place to use DENT tokens for purchasing goods or services, combined with the permissive terms of the ICO, and their large supply of tokens, gives them much leeway and many options for carrying out their trading strategy.

[21] https://coinmetrics.io/charts/#assets=eth

DENT raised $4.4M from their ICO, which used 10.6% of their token supply. At the current price, their remaining tokens have a potential value of $697M. This supply grants them reserve funds for promotional campaigns, stimulating telco partnerships, possible MVNO purchases, and granting tokens as incentives for customers. Effective communication with token investors will be important going forward, as concerns about use of this supply will naturally occur. We recommend appointment of a VP for investor relations to ensure that DENT communicates its intention to build token value.

DENT is the only company known to be offering or developing a marketplace where consumers from multiple MNOs can trade their data on an exchange. Competition is expected to come from two areas: MNOs own data trading exchanges, such as offered by some carriers in Asia, and marketplaces for buying data and other services for eSIMs.

MNOs offering their own exchanges include, China Mobile, China Unicom, China Telecom, and China Telecom Hong Kong (2CM Exchange). As outlined above, DENT's blockchain marketplace may be more attractive for consumers and many MNOs, because it can connect many more consumers and products, creating a larger, more competitive, more connected marketplace, which would facilitate more commerce and increase revenues.

Bubbletone is developing a blockchain based marketplace for eSIM users to purchase top-ups and mobile plans. Their Graphene based marketplace is focused on roaming customers, and utilises eSIM cards to allow consumers to buy from various MNOs and have their SIM identify with them when needed. It is intended to facilitate transparent competition between MNOs, though it is unclear if they have partnerships with any to date. Their roadmap states that they are targeting Q1 – Q4 2019 for signing agreements with MNOs.

A final threat to DENT is consumer confusion with, or indifference to, their ERC20 token based marketplace. Clear communication, effective and intuitive app design, and integration with conventional payment methods will be key factors in their success. Integration with PayPal is already offered in their apps, and the role of the token is quite straightforward – indeed many consumers may use the apps without ever needing know what Ethereum or cryptocurrencies are. However, token price stability will be important for ensuring consumer ease of use and satisfaction.

Conclusions

DENT Wireless is developing an Ethereum blockchain based exchange marketplace for buying and selling mobile data allowances, and for buying and gifting top-ups for various mobile services. An ERC20 Ethereum token, DENT, has been issued for the marketplace. Activation of data trading in the mobile and web apps is intended to occur before the end of Q3 2018.

Their intention in creating a single marketplace to buy and sell data for various MNOs, their customers, and other organisations, such as providers of sponsored data, is to create new markets, and connect previously siloed ones. The potential exists to exploit network effects, whereby this open, distributed, transparent, and competitive marketplace can attract and connect more customers, and ensure an on-going advantage. MNO's stand to increase overall revenue, and consumers stand to recoup unused data, or acquire cheaper data packs. DENT is the only company known to be offering or developing a marketplace where consumers from multiple MNOs can trade their data on an exchange.

DENT raised $4.4M from their ICO, which used 10.6% of their token supply. At the current price, their remaining tokens have a potential value of $697M. This supply grants them reserve funds for promoting growth via stimulating telco partnerships, possible MVNO purchases, and granting tokens as incentives for customers. Use of an ERC20 token may allow DENT some degree of control over the economics of its platform and currency – they may use their token to act like a central bank for their marketplace, exercising a degree of control over token supply and circulation velocity. A key recommendation is that they appoint a director of investor relations to ensure that they communicate their intention to build token value.

Successful market penetration will depend upon the attractiveness of the app and market place to consumers, adoption by MNOs and other institutional participants, and DENT's marketing and promotional plans. Token price stability will be a key factor in app attractiveness and use. DENT's team has extensive experience with mobile applications, billing services, internet software development, and mobile industry business and product development. They have less experience with blockchain app development, and cryptocurrency trading strategies.

Their Android app launched on February 27 2018 (iOS on December 29 2017). As of May 21 they had 150,000 users. We estimate that 2M active customers would be needed for $100M annual transaction volume, and 20M for $1B volume. 2M customers are less than 1% US smartphone users, and less than 0.5% of North American and European users. $1B in annual volume may be a reasonable long-term target for DENT's out-of-bundle data to-ups exchange volume. By comparison, Syniverse, the leading mobile network interoperability firm, handles ~ $15B of settlements between wholesale customers annually.

Given the uncertainty in estimating circulating supply and velocity of the DENT token, it is currently not appropriate to offer price estimates.