

Yojee Ltd.

In Logistics, Blockchain is not just a buzzword

Logistics IT still largely stuck in 20th century

The Logistics industry is a complicated one, with many different parties involved, conflicting interests and priorities, many different IT systems in use, procedures differing from country to country, fraud, product counterfeiting and a lack of scalability.

As an illustration, shipping a sea freight container across the world can involve more than 1,000 pages of logistics documents. The number of interactions between the parties involved is typically around 200, e.g. between carrier and freight forwarder.

Against this backdrop, it will be easy to appreciate that automation of the administrative burden can provide tremendous efficiency gains to the Logistics industry.

Specifically, the exchange of information between the parties involved (Figure 1) and subsequent actions that need to be taken, such as payments, are areas of great opportunity when it comes to automation.

For instance, digital bills of lading and other shipping documentation would provide tremendous efficiency and cost benefits for all parties involved, including carriers, forwarders, ports, customs agencies, banks and insurance companies.

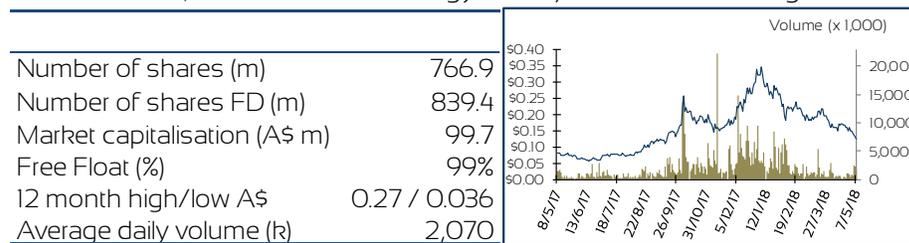
However, many of today's IT backbones in the Logistics industry lack the level of integration required to reduce the administrative burden and inefficiencies through far-reaching automation. This is where Blockchain technology comes in.

Efficiency gains and new business models

Blockchain technology in the Logistics industry promises the reduction of bureaucracy and paperwork as well as the automation of services that currently require intermediaries such as insurance companies, lawyers, freight brokers and financial service providers.

Additionally, Blockchain technology can be used to track a product's lifecycle and ownership transfer, e.g. for agricultural products and high-value consumer products, so supply chains can be monitored and product attributes guaranteed. This is extremely important in light of food safety issues and product counterfeiting.

In other words, Blockchain technology is not just about delivering more



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Flash note

Yojee Limited

(ASX:YOJ)

Software & Services

Australia

Risk: High

Yojee Limited (ASX:YOJ) provides state-of-the-art logistics software that can connect any-size logistics company to create private supply chains or to join Yojee's collaborative cross border logistics network. The company is actively working to incorporate Blockchain technology on top of its Artificial Intelligence backed software solution.

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BUY

Current price: A\$ 0.13

9 May 2018

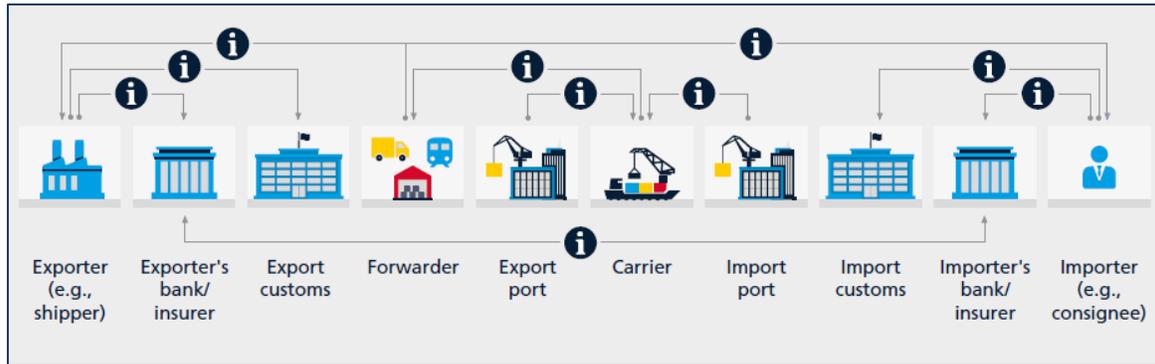
Analyst: Marc Kennis

marc.kennis@tmt-analytics.com.au

+61 (0)4 3483 8134

efficiencies and lowering the costs of transportation. Equally, Blockchain technology is about delivering a watertight supply chain when it comes to product guarantees and authenticity. For some companies and industries, we believe the latter is likely to be even more important than the former, e.g. for luxury goods manufacturers, branded electronics companies and companies throughout the food supply chain, from farmers to food retailers.

FIGURE 1: COMPLEXITY IN LOGISTICS' INFORMATION EXCHANGE



Source: Accenture

New business models to complement industry incumbents

We are also witnessing the emergence of new business models, such as Yojee's, where emerging companies address specific frictions in various industries using Blockchain technology. In the case of the Logistics industry, flexible and agile companies can address specific bottlenecks, such as last mile delivery, anti-counterfeiting, automated payments etc. Or companies can address all of these bottlenecks at once through an integrated approach.

Most of these new models are highly complementary with existing models and industry incumbents. E.g. large players like UPS and Maersk have started to trial Blockchain technology and are slowly incorporating it into their existing IT infrastructure.

Yojee's Blockchain for Logistics application runs on Ethereum

YOJ has recently deployed its Logistics-focused Blockchain on Ethereum, which is a custom-built, decentralized platform to run smart contracts on. Ethereum functions in a way that is similar to the Bitcoin Blockchain, but it can store a wide variety of smart contracts that can be used for all sorts of applications, such as registering asset ownership, transacting in assets, recording such transactions etc.

Ethereum essentially provides an out-of-the-box Blockchain layer on which third parties can simply deploy their own application layer, e.g. YOJ deploying a Logistics application layer that can record logistics transactions and that can act upon these transactions.

Transaction costs on Ethereum set to drop significantly

While Ethereum's transaction capacity is currently limited to 16 transactions per second, an upcoming scaling solution called Plasma is expected to increase this transaction capacity to approximately 25,000 per second. Plasma is expected to become operational in June 2018 and will allow for companies such as YOJ to deploy their application layers on an enterprise level scale.

Additionally, transaction costs on Ethereum are expected to drop from a range of US\$ 0.20 - US\$ 0.40 currently to just a few cents once Plasma is operational, which makes it much more suited to a high-volume transaction environment such as the Logistics industry.

Comprehensive solution for the Logistics industry

In its Blockchain development roadmap, YOJ has focused on developing technology that can assist Logistics companies across the logistics chain and during different aspects of their operations. For instance, YOJ's Blockchain solution doesn't just facilitate a payment between two parties, like the Bitcoin Blockchain does, but it integrates into many more aspects of Logistics companies' operations, such as delivery verification, automated payments, proof of existence and proof of movement etc.

Smart contracts facilitate automated contract execution

A large number of these aspects can be incorporated into one application using Smart contracts, which are essentially computer protocols that facilitate, verify or enforce the performance of contracts.

In other words, various elements of a specific logistics contract can be programmed into a digital, smart contract and are executed automatically upon satisfaction of certain conditions. For instance, if a sea freight container that has travelled from port A clears customs in port B, a smart contract automatically executes and makes payment from recipient C to sender D, all without the need for human verification. Such smart contracts are an integral part of YOJ's Blockchain for Logistics.

Focusing on three key areas of the Logistics supply chain

In order to provide the functionality described above, YOJ is focusing on three key areas in the Logistics supply chain, i.e. procurement, processing and provenance. These three areas encompass critical supply chain elements such as capacity sourcing, contract negotiations, payments, insurance, digital document management as well as proof of origin and movement.

In our view, digital document management on a Logistics Blockchain, which irrefutably records things such as transfer of ownership, payment, proof of location etc., will be the ultimate goal for any Logistics Blockchain.

YOJ is currently developing and testing several modules, including Proof of Existence and Proof of Origin/Authenticity, distributed clearing, digital management of shipping documents and autonomous entities to safeguard shared data.

Pilot with UPS Asia to present very substantial future revenue opportunity

YOJ is currently running a Logistics Blockchain pilot project with UPS Asia, a subsidiary of United Parcel Service (NYSE:UPS). Some of the focus areas we expect to be included are decentralized clearing and limiting banking fees in Logistics transactions as well as Proof of Authenticity and Proof of Existence.

We would expect there to be significant scope to expand the pilot to other areas of UPS globally, which in turn would present a major revenue opportunity for YOJ once the pilot is concluded and converted into a commercial contract.

Specifically, we see substantial scope to apply the functionality of a Logistics Blockchain to the transportation of food, medical supplies, luxury products, chemicals etc, which account for about 5% to 15% of global logistics movements and where counterfeit is rife. There is an instant

need and huge volumes of freight that can benefit from such technology with value add pricing. Given the huge logistics volumes globally, i.e. millions of containers, pallets and parcels annually, the revenue potential for companies such as YOJ is very substantial even at small fees of US\$ 1 to US\$ 5 per tracking number.

Direct and follow-on effects from digitization

We expect that applying Blockchain technology to the Logistics industry will provide substantial savings and efficiencies across the global trade spectrum. The United Nations estimate that digitizing trade-related paperwork in the Asia-Pacific region alone could cut costs by about 30% and boost trade by nearly US\$ 260BN annually.

A follow-on effect of this digitization will be the availability of logistics-related data that can then be used to further optimize supply chains, e.g. if a container ship from China is expected to arrive in Rotterdam five days late due to bad weather, the trucks assigned to transport its containers further into Europe can be deployed elsewhere, limiting wait-times.

Conclusion

YOJ's Logistics application on a Blockchain layer, such as Ethereum, will be able to address the issues discussed above and provide customers with substantial efficiency gains, cost advantages and product authentication solutions.

A next step in the validation of the company's Blockchain-for-Logistics technology could be the expansion of the UPS trial into branches other than UPS Asia. Furthermore, we expect the company will be able to sign up new customers in the near to medium term.

We expect this Blockchain capability can be a separate revenue pillar for YOJ in its own right, i.e. in addition to the company's SaaS and Freight Dispatch businesses. As such it could substantially contribute to YOJ's revenue growth in the next several years. We reiterate our Buy rating for YOJ.

Please refer to our initiating coverage of YOJ, published on 13 December 2017, for more background on the company's existing Logistics platform.

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