

## CRYPTO

A new series on AI, Blockchain, Cryptocurrency and Tokenisation

PARTNER CONTENT

CITY A.M.'S  
CRYPTO INSIDER

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When I first introduced this series to City A.M. it was important to me to include Artificial Intelligence (AI).

Aware that after four editions there has been no real mention of the industry and bearing in mind I am on as deep a learning curve as I am with blockchain and therefore needing a qualified educator, I reached out to Terence Mills, chief executive of Aljo, who is also a regular contributing writer to Forbes and a respected thought leader in the AI space.

We only had a short time to speak but the key issues he highlighted to me were remarkably similar to the significant problems facing blockchain companies. The main ones being over excitement, hype and the fear of missing out, leading to a frenzy of solutions are being built for problems that don't necessarily exist or ones that just don't need solving. With offices in New York, London, Hong Kong and Beijing Terence's global view, and this is consistent whether in the US, the EU or China, the AI industry seems to be in a moment of pause. The pause is prompted by the confusion of chief risk officers who are desperately concerned that their companies might be exposed to litigation as a consequence of ill-thought-out programmes. Don't let it out of the lab!

The example he cited was an insurance company that, having turned down a \$5m claim, was taken to court and sued. The judge asks why the claim was turned down? Only to be told that the machine said no. When the judge asked why the machine said no, the answer was we don't know – well of course the judge told the insurance company not to be so stupid and ordered them to pay \$10m – double the original claim! The moral of the story being – make damn sure you are identifying problems that need solving and can back up those solutions when under interrogation.

While it seems quite a negative view of the AI industry right now, Terence absolutely sees the benefits of building the right solutions for genuine problems. One such example of a proper user case is from Flying Carpet whose founder Julien Bouteloup has written today's main feature. I met him through CognitionX which, coincidentally, hosted its second AI Invest event at its 20 Air Street offices.

I also attended the AliasLab UK event where I interviewed Aldo Lo Castro, head of research & development. One of the presenters, Andrew Rabbitt, CEO of Incuto.com, was a genuine inspiration with his vision of helping the unbanked and I have invited him to write next week's guest main feature exposing the problem of the poverty premium and how it might be solved.



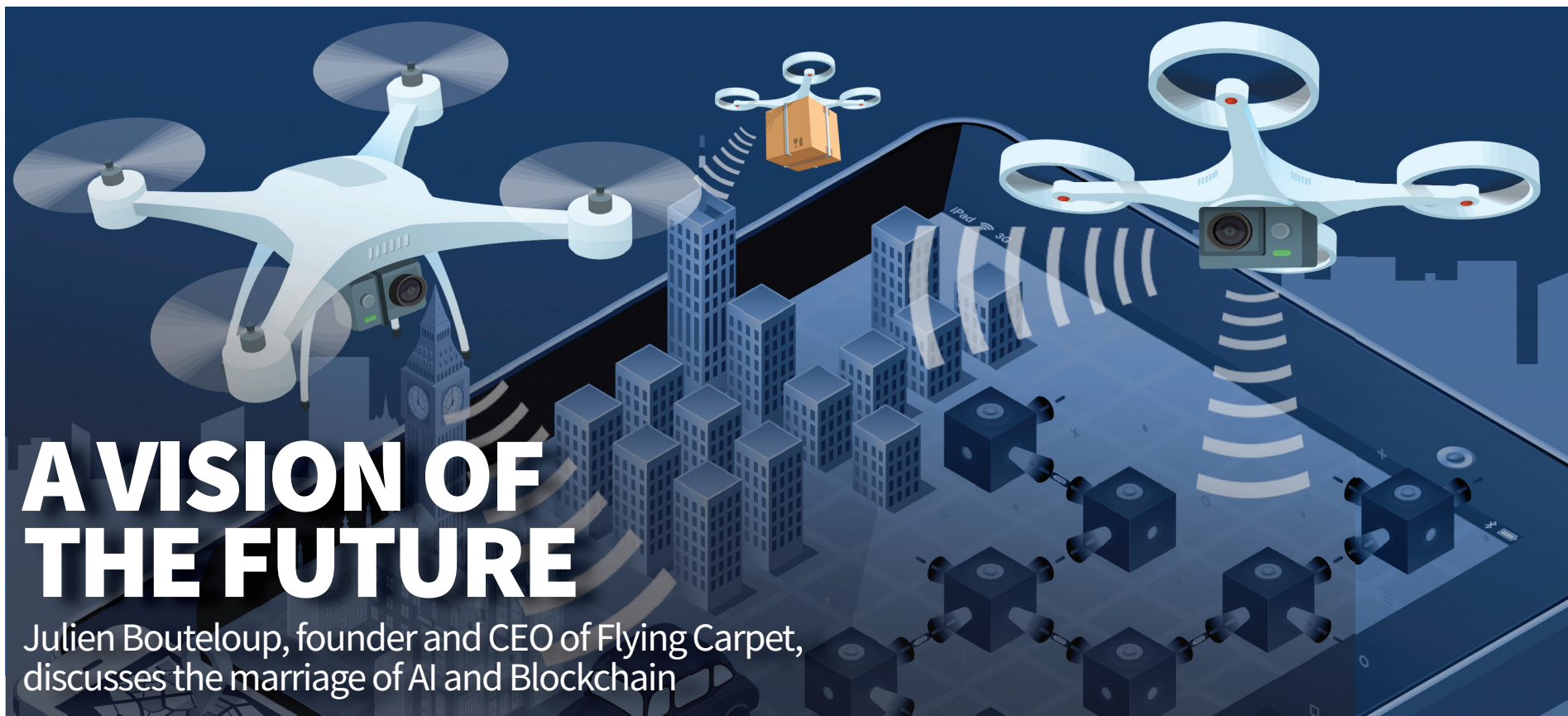
## WHERE IS ARTIFICIAL INTELLIGENCE HEADED?

Artificial Intelligence (AI) can radically improve people's lives if we nurture its potential. AI enables machines to mimic human traits such as learning and thinking, and is able to do this at a pace and efficacy of which humans will never be capable. We can harness this power to help humanity, to enhance our own ways of thinking, to complement our philosophical enquiry and, most importantly, to accelerate our problem solving.

AI is already disrupting every domain of society, from healthcare, transportation, finance, security, energy and education. However, the potential threat that AI poses to humanity has been at the forefront of debate surrounding the technology. SpaceX and Tesla CEO Elon Musk has notably said that AI is "our biggest existential threat".

Some AI agents already solve complex problems using mathematical algorithms that exist inside black boxes – indecipherable to humans. Yet, while we can enable autonomous machines to have a certain 'consciousness', maybe it would be possible to develop AI code that is principally ethical, empowering them to perform tasks while guided by an inbuilt moral system. Of course, there are currently devices that cannot perform tasks for anything other than what they were intended. We must find a balance between controlled autonomy and independent moral reasoning; if we entirely confine AI within strict ethical boundaries, we risk hindering machine's ability to self learn and stifle AI's potential.

Designing machines to operate within a network that is fully open-source and decentralised is a strong strategy for maximising the beneficial impact of AI. Open-source code can be accessed, analysed and copied by anyone. Development of AI technology should be fully transparent, otherwise we risk losing this limitless resource of computer intelligence to one self-interested entity, such as a government or corporation. Control over this powerful technology should be held by anyone and everyone, not concentrated in the

A VISION OF  
THE FUTURE

Julien Bouteloup, founder and CEO of Flying Carpet, discusses the marriage of AI and Blockchain

Designed by Phillip Snelling, Bowater Media

hands of a few; if we all have access to code, we drive competition and innovation, progressing together and collaboratively speeding up the evolution of AI. No one should be left behind.

## INTRODUCING BLOCKCHAIN

Blockchain is a technique for immutably storing data in a continually growing, cryptographically secure chain of data states. Blockchain can provide a new, secure and trustworthy layer beneath AI applications. Any data hashed to a blockchain is immutable, meaning that it cannot be changed after it is written to a block. By storing data hashes associated with an AI algorithm on the blockchain, credibility and accuracy of the data can be guaranteed.

Additionally, decentralisation ensures availability and access to data, preventing one single entity from gaining control over all information. Improvements and breakthroughs in AI are fundamentally dependant on data. As this data becomes increasingly important, it will determine who has control over these powerful AI algorithms of the future. Securing that data is open and accessible to all is absolutely essential to ensuring that one single entity does not gain control of the highly powerful AI algorithms of the future.

Blockchain's immutability property offers many benefits when combined with AI. In addition to securing data through immutability, AI algorithms themselves can also be hashed and

saved to the blockchain, allowing easy tracking of algorithm changes and authenticity. This representation of AI algorithms on the blockchain can be used to decentralise access to AI technology, rendering algorithms open and accessible to all. Blockchain also enables unique cryptographic token-economic models that can be incorporated into AI applications to create innovative new incentivisation systems. These crypto-economic incentives can be used to encourage preferred behaviour within AI algorithms and/or encourage contributions of data within a system.

## APPLYING AI + BLOCKCHAIN IN THE REAL WORLD

There are many incredibly powerful examples of the marriage of AI and blockchain in industries from energy to healthcare – it even opens the door to revolutionary concepts like self-driving cars. However, I would like to particularly focus on the Flyingcarpet.Network, an AI + Blockchain project that I founded. Flyingcarpet is a decentralised network of data-collection services executed by autonomous drones (and other IoT devices). Developers create services for the Flyingcarpet network using AI, pattern recognition and machine learning inside of a virtual AI engine (VAIE).

One use case of the network is in agriculture, where Flyingcarpet will bring innovative new economic opportuni-

ties to farmers and entrepreneurs. The network of AI-enabled data collection services will give farmers the tools they need to capitalise on the financial value of their agricultural data in the global futures markets. New economic opportunities will also be created for entrepreneurs to connect affordable IoT hardware (eg. drones) to the network and be rewarded when these devices are used to run services (eg. farmland analysis). All of this is made possible by the blockchain and artificial intelligence innovations underpinning Flyingcarpet's architecture, coupled with a unique token-economic incentives model.

With access to the Flyingcarpet service algorithms marketplace, farmers

## AI is already disrupting every domain of society

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could run countless different pre-programmed autonomous services on their IoT hardware without any software development expertise or the need for human intervention – enabling significantly more profitability through automation.

The data generated by Flyingcarpet drone services will help farmers reduce cultivation costs by providing insights into, for example, optimised use and distribution of water or fertilisers on their land.

Perhaps even more significantly, Flyingcarpet will equip farmers with powerful and profitable new non-farm sources of income by enabling them to sell their farm data to global traders of agricultural futures markets, potentially earning them more from this data than they do from their entire crop.

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DOES THIS PROJECT  
REALLY NEED BLOCKCHAIN?

**Rick O'Neill**, founder of Look, Touch & Feel – a specialist digital marketing agency – pulls back the curtains on ICOs, and their marketing campaigns, to reveal the real indicators of potential success and failure.



Last week we looked at community and how to spot a real one. This week I want to talk about the use-cases for blockchain, and how to determine whether or not a project really needs it.

At its most basic level, a blockchain introduces a new way to manage and protect data. Its key features, such as decentralisation, immutability, and transparency, are able to secure data with no need for a trusted authority (otherwise known as "trustless"). But is blockchain all it's cracked up to be? Is the particular blockchain being used for a project, the right kind?

Public blockchains sometimes can't

compete with centralised databases in terms of speed and come with significant transaction fees that depend on the number of transactions. Equally, building a private blockchain is expensive. The project you are considering creating or investing in might not need decentralisation and tokenisation at all, and a traditional data management model might simply be more appropriate and cost-effective – therefore, why is an ICO being considered at all?

Ask yourself two basic questions. 1) Can blockchain help reach the project goals and solve real industry issues? If the answer is yes, then 2) is it possible to

solve those issues without blockchain?

If a project doesn't make it past both questions, then I'd avoid it.

Many projects have no adequate alternative to blockchain if they are to accomplish their mission, of course. For example, identity management and authentication can be significantly improved by the blockchain. Other strong examples include the digital assets market, most relevant to the gaming industry (look at ICO-funded projects like TriForce, who are building their own blockchain to solve this big problem).

There are many strong blockchain use-cases, but it's important you question the need for one every time.

City A.M.'s Crypto Insider  
Interviews Aldo Lo  
Castro of AliasLab UK

AliasLab has been a leader in electronic identity IT for more than 30 years, and is now majority owned by TeamSystem Group, Italy's leading ERP & management software and training services company employing more than 2,000 with €315m of revenue. AliasLab designs, implements and manages complete software and hardware integrations, primarily in the fields of strong authentication, electronic signatures and electronic identities. Having trained and lived in the UK for many years, Aldo Lo Castro, head of R&D, has led Alias Lab's identity & signature IT work for over 10 years.

Aldo described to me how AliasLab "over the last years [has] specialised in three main areas: strong authentication, so ways to authenticate users securely; electronic signatures, so everything to do with going paperless and a high level of assurance making sure that who signs are actually who they say they are; and last but not least KYC remote identification

because there is no point giving you the most secure signature in the world if I don't know who you are!"

He adds: "Through these 'lenses' of technology is how we first approached the blockchain world and distributed ledger technology world, because obviously we were attracted to it, like most people, with the hype around Bitcoin and there's no denying that but pretty much immediately we realised the synergies between the underlying technology of blockchain in general and our core business. So soon after that we started working on a solution that leveraged blockchain for identity and electronic signatures – basically blockchain becomes a trusted third party in which to store the cryptographic proofs of transactions so with that system we can prove who has done what with an immutable audit trail. That has been our first approach into this world."

As a technology company AliasLab sees the technological advantages of a platform that has the capability of storing



small but very valuable amounts of data in an immutable way. Aldo affirmed "from the start, it has always been about blockchain implementations in the plural because for us it's important to be agnostic from the underlying platforms whether it is Bitcoin, Ethereum, IOTA and as such interoperability is critical for us and in general one of the main issues facing the crypto world."

Carrying on with the theme of interoperability, Aldo explained that in 2016 an new International Organization for Standardization technical committee was formed (ISO:TC307) whose scope is the Standardisation of Blockchain technologies and distributed ledger technologies. There are 10 ISO standards under development with 35 participating members and 13 observing members. We

agreed that this would help drive the industry forward and certainly Aldo emphasised the importance for AliasLab to be part of that process from the beginning with its focus on security, identity and interoperability. "We think that it is going to be a very interesting area as our belief is that standards will help a lot to sort out the 'wild west' aspects of the crypto world today."

He was keen to point out the benefits of the space, pointing to Bitcoin which, as it approaches its 10th birthday, is not only still here but also has never itself been hacked. The three areas of crypto loss are exchanges, phishing and threat of life.

This brought Aldo neatly onto discussing "AliasLab's newest area of involvement in the crypto world is to focus on security for custodians of digital assets who distinguish themselves from exchanges as they are more for institutions, so when you have millions of cryptocurrencies to handle for banks, enterprises and governments. So again we are helping in writing a technical paper for the ISO committee to cover what is out there now, and point towards best practices as there is a lot involved: processes, hardware, software, methods of identifying – so there is big area here where we are delving in and creating a platform. In addition there is the grey area here, which is the insurance of these things, so finding some insurers to be part of this too."



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## ICO NEWS

Regulators Wrangling Crypto  
Coins and Successful ICOs with  
Their Own Novel Challenge

The biggest debate around ICOs, coins and tokens has been what they really are. The real answer is that they can play so many different roles that they're not like anything else. On top of which this blockchain technology allows us to create digital entities, or assets, which have no previous equivalent.

This is no help of course if you are a government officer trying to work out how these things should be treated for tax purpose, or a regulator trying to work out which of them will need regulation and how that should work.

Worse still there is no universally agreed taxonomy to guide governments and regulators on how to manage these elusive beasts – some of them are like something that has gone before, but with a twist, and some are so new that they require an entirely new approach.

Which is why some regulators, notably the SEC in Donald Trump's America, have chosen to ignore the problem and treat all tokens as securities.

At the other end of the scale over in Zug, Switzerland, where they also know a thing or two about money, they have achieved something much nearer to the clarity everyone needs. Meanwhile the UK's own FCA has, perhaps wisely, chosen to take some time to learn about these new innovations before jumping in.

Yet this lack of clarity is arguably the main reason we are falling behind globally, with less than two per cent of the 2,200 ICOs identified in the TokenIntelligence.io database domiciled in the UK. Last week in a fascinating interview for ICOrad.io, Sam Robinson, senior regulation partner at CMS, explained that it is perfectly possible for an ICO with a utility token to be run under UK regulation.

In fact 40 per cent of those just announced as launching in the FCA's latest sandbox cohort are harnessing blockchain technology and a number of those with tokens.

But building a business funded by cryptocurrencies turns out to have a novel challenge of its own – an unintended consequence of AML (anti money-laundering regulations).

You may well have tens or hundreds of millions in the bank, or rather the wallet, in highly fluid cryptocurrencies, but how do you convert enough to expand fast, paying staff and buying from the pre-crypto economy?

Watch this space. I recently came across a highly experienced venture about to open the doors – so do get in touch should you find yourself sitting on a pile of crypto with a similar problem.

Please Tweet/Telegram questions to @BarryEJames or listen at ICOrad.io.



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