Social Value
& Intangibles Review

Institutional Consultancy & Advice from Rothbadi & Co

Frontiers in Blockchain - Uniting Industry and Academia in Pioneering Journal

Rise of Alt-Coins: Black, Women, Student, Education

Lan Tschirky

Major Blockchain Investor and Patron of IoV Blockchain Alliance for Good

Digital Universities: Value for Students

Impact Investment 2.0

Efficiency Exchange supplement

Centre for Citizenship Enterprise and Governance   SERATIO   bisgit.law Blockchain Alliance for Good   CG UN BLOCKCHAIN LAB CCEG.ORG.UK   SUSTAINABLE DEVELOPMENT GOALS   SER   CIPS   TUTU

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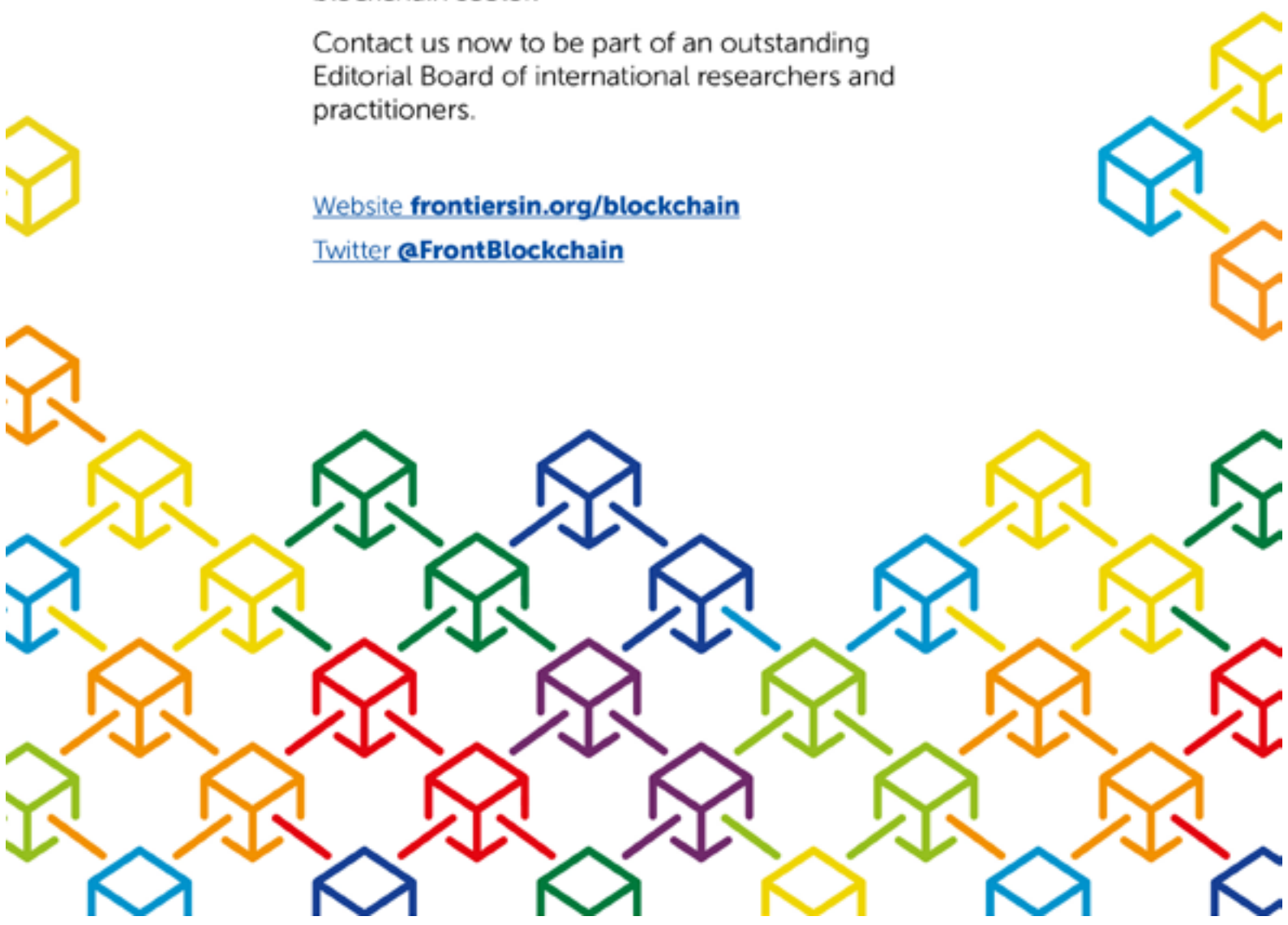## LEADING GOLD OPEN ACCESS PUBLISHER

The world's first journal on Blockchain from an academic publisher, in collaboration with the CCEG, coming soon

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THE UNIVERSITY OF
NORTHAMPTON

contents

A warm welcome to this edition of the Social Value and Intangible Review (SVIR)

by **Jan O'Hara**

Managing Director, Rothbadi & Co
Institutional Blockchain Consultancy and Advisory

In this edition, I would like to introduce myself as the new Managing Director of Rothbadi & Co, the institutional consultancy and advisory service on the measurement and transaction of value. I have been head-hunted to join an enthusiastic, hard working team of extraordinarily exceptional people.

Why join Rothbadi & Co? Well during my wonderful career, I missed out on the mobile phone revolution in the 1990's, despite my early career of being in radio telecommunications. I only briefly touched the mobile phone industry when it was in its hyper-growth phase. Then followed the internet, which led onto social networking in the mid 2000's. I recall that I was involved in an aggregated social media platform, but our partners failed in Vancouver and left us high and dry, despite us signing up Football clubs, F1 teams and some of the world's best known brands. Interestingly enough, a very similar product succeeded – and that product was WhatsApp.

So I decided that I was NEVER going to miss out again on a market opportunity that was going to explode and make a difference to the world. Having already heard of Blockchain from my partners in British Telecom, EE and other global technology companies I have worked with over the past 15 years, the Rothbadi opportunity was a welcome surprise.

The market is right at the bottom of the curve. Blockchain together with the noise of ICO's, along with our metrics division, has the ability to do something for good, for love. It is a fascinating combination.

While my initial work will be with existing opportunities, I can see the immense potential that Rothbadi & Co has. This is going to be an amazing journey: to create something with the potential to help many, to help shape a market, to create strategies that deliver true value that is recognised and transacted, to be the first in many areas, and to work with regulators to help put protection in place for the masses.

Rothbadi & Co was formed to be the go-to institutional and advisory service, the premier service that governments, institutions and the private sector come to, for our support regarding ICO's and Blockchain. This is possible with our immense team and their academic roots in Blockchain, impact measurement and our very own ICO.

Please take your time to review the Rothbadi & Co brochure that shows our five divisions with their products and services. We look forward to working with you all very soon.
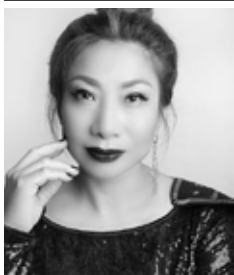
Jan O'Hara

#goodistrending

#excitingtimesahead

An interview with Lan Tschirky, Patron of Blockchain Alliance for Good

By **Lan Tschirky**

Lan is the founding partner of Rothbadi & Co, patron of Blockchain Alliance for Good, and also an Ambassador for CCEG

Q. *This is an exciting time to be in this fast-growing business of blockchain. Can you give us an overview of your background and what sparked your interest in blockchain as a major investor?*

A. I studied math and fashion which isn't really a normal mix. Well, math, I don't deal with too much nowadays, but I'm deep into fashion and am building my own high-fashion label. I guess I've always been interested in anything advanced, cutting-edge, in fashion, you have to be, and in technology, it's a must. I like to live on the edge, I love to discover new things; I'm lucky, I meet a lot of people and I know the most wonderful and talented people, my interest in blockchain grew through them, and I do believe it's a worthy cause.

Q. *Now we are in 2018, are there any that you are particularly excited about in this industry?*

A. A few years ago, you heard the term 'blockchain' mentioned and most people didn't know what it was. And today, although many still don't really get blockchain, everywhere you go, you hear something associated with it, in industry, in finance, in government, in education, in fashion, in sports, basically, in everyday life, I think it's marvelous and without a doubt, blockchain will be part of our lives.

Q. *What are some of the top things you look for in a blockchain company when reviewing it as a possible investment opportunity? (i.e. How would you evaluate? What is for you the thing that catches your attention?)*

A. As I said earlier, everyone and everything is jumping on the bandwagon of blockchain nowadays, that's why when I look at investment possibilities, I don't just look at a company from an organisational, financial and/or potential point of view; I want to know the people in it, their values, their views because they're the heart and soul of a an organisation, they'll be the ones driving it forward. I think because I'm more of a creative person, I go with my feelings often and I'd like to support organisations that have similar values and outlooks as myself.

Q. *What would you like to achieve through investment?*

A. In a nutshell, I want to be able to support causes/organisations that genuinely want to make life easier and more transparent on different levels for all of us, so that as a society, we can all benefit from a better quality of life.

Q. *The regulatory tide is rising in some regions such as the United States and China. How do you think this will affect the blockchain scene and the projects you invested as an investor?*

To me, the tightening of regulations is a good thing, it will help to sieve through the markets leaving us with more solid, better qualified projects.

Q. *Some say blockchain is overhyped and there may be a new tech bubble. What is your opinion on that?*

A. Well, I wouldn't be investing heavily in it if I didn't believe in it in the first place. As I said earlier, I believe blockchain should be and will be a big part of our lives. It's the now and the future.

Q. *Where do you see the biggest opportunities for blockchain in the coming years?*

A. I believe blockchain is the key to building an overall better society that will benefit everyone, and this is the reason that I invest. Education is a cause close to my heart, blockchain technology offers many interesting solutions to challenges in the academic arena. I work with causes that, for example, issue a Student Token through blockchain-based knowledge score system.

Q. *How do you see blockchain as a social impact?*

A. Today's society is filled with uncertainties, people don't trust for good reasons. I think we need a good, secure system to assure people that what they get or being sold is really what they see, and what the seller/provider claimed it to be. Blockchain can give us that security, information is decentralised and distributed so there is no middleman, no one can corrupt any piece of information.

bisgit.iov

Blockchain Alliance for Good

Blockchain for Good is a movement to establish structures that will positively enhance our living experience. To date we are investigating a world where Distributed Ledger Technology (DLT), Artificial Intelligence (AI), Non-Financial Tokens and Metrics, an Exchange of Values of Stakeholders (MCR) on a platform, Provenance, and Distributed Autonomous Foundations (DAF) can combine to alleviate problems and provide significant as well as material intervention into society.

We want a world where we make life and purchasing choices depending on our values, and the historic behaviours of those who serve us, whether organisations, people, products, processes or projects. Where an AI Bot will guide us in all parts of our lives, including our spending, carrying the values we have or aspire to. Where the creation of goodness is permanently etched in a public ledger, which we can see and grow, and where we can exchange and get rewarded for having attributes that are based on good.

www.bisgit.org

Distributed Autonomous Foundations

AI Bot Wallet

Microshares Exchange

Non-financial Metric

Distributed Ledger

Provenance

Empowering Gender Equality in the Era of Blockchain Technology

By **Professor Christine Bamford**

Founder & CEO of Women's Coin- on how Women's Coin has embraced blockchain technology to empower women.

Today we interviewed Professor Christine Bamford, who not only is the founder and CEO of Women's Coin, but who also was voted one of top 10 Global women leaders in Fintech.

Women's equality has been a 'hot topic' in the media in recent months. Baroness Margaret McDonagh commented at the Women's Coin meeting at the House of Lords that: "Despite many attempts to increase female representation at executive level, there are only still only 28% of women represented on the FTSE 100 Board".

On International Women's Day, the press highlighted a £2.6 million gender pay gap for UK top women, and cited that top female executives only earn half as much as their male equivalents. Of course, not every woman wants to be

a top executive. According to Christine: "Women's power is not actually held in a few top jobs – every woman holds the power – regardless of whether they work inside or outside the home. It's a well-kept secret that women possess enormous power over purchasing decisions".

 According to Forbes' Top 10 things everyone should know about women consumers: ''Women have a multiplier effect because women serve as the primary care giver to children and elderly in virtually every society in the world. Women buy on behalf of the people who live in their households, as well as for extended family such as older people, in-laws and friends''.

Globally, **Women drive 70-80% of all consumer spend.**

In the words of one female friend: "Yes, of course I decide what food goes on the table, what clothes my kids and husband wear – right down to their socks and underpants."

It is projected that the control women have over household expenses alone, is worth $33 trillion globally, and set to increase to $40 trillion by the end of the year.

The prediction is that with more women working, the global women's income will reach $18 trillion world-wide later this year. In the USA, 40% of women out-earn their spouse. Women purchase 50% of traditional male products, including cars, DIY, consumer electronics. In the USA, women spend over $200 billion on new cars and mechanical servicing each year *she-conomy.

Other amazing statistics indicate women have control over:

» **91% of new homes**

» **66% of PC's**

» **92% of vacations**

» **80% of healthcare**

» **89% of bank accounts**

» **93% of food**

» **93% of pharmaceuticals.**

» **source Yankeleovich Monitor & Greenfield**

» **92% Women pass purchasing information to others.**

» **60+% Women believe organic foods are better.**

Moreover, the name on the credit card doesn't tell the whole story. The person who makes the sales transaction isn't necessarily the decision maker. Just because a woman doesn't earn a salary outside of the home – she still is likely to be the gatekeeper to the household expenditure.

Women's Coin – encrypted currency - aims to turn the secret power of the woman purchaser into to a visible force – a power-broker for good.

This will encourage women individually and collectively, to make a visible impact on suppliers, by making conscious decisions on where/with whom to purchase goods and services. Collective purchasing power can force suppliers to source ethically and behave ethically. If 92% of women pass purchasing information (normally online) to other women - then the spread and scale of using a dedicated currency for women is massive.

Christine, Founder/CEO of Women's Coin Foundation commented: "There is an added benefit in using a dedicated women's currency. For every transaction or purchase made using women's coin, 50% of the profits will be transferred to the Women's Coin Foundation, to educate and empower women trying to survive in the most challenging environments on earth".

Women Coin's double-loop purchasing model, creates a virtuous circle of purchase and "give back" to build a better world.

Matt Gras, Global Marketing and Communicating Director mused: "Do you remember Green Shield Stamps? Women's Coin could offer "green coin" collected by community groups, via a point system generated through collective purchasing spend. The idea is still in development but may have "legs" and certainly fits with the WC double-loop purchasing model".

Interestingly, the Women's Coin Foundation purchasing concept would not have been possible without blockchain technology. Blockchain

enabled the first encrypted currency (Bitcoin). Now with Ethereum and smart contracts, purchasing using a digital currency is both safe and secure and value for money. Without the need for an intermediary, financial institution transactions are transparent, traceable and unhackable.

Blockchain technology is now at the centre or a resurgence in aid-donation. The transparent, secure blockchain process, enables financial aid to be transferred to those in need, without the need of a third party/intermediary. This means more aid to front-line workers and receivers, without increasing the need to ask for greater financial contribution - **Humanitarian Technology (Humtech) has arrived!**

Sir Peter Birkett, Global Education Adviser for the Women's Coin Foundation commented: "We are not the only institution to embrace blockchain for good. UNICEF and the United Nations have already included blockchain in their aid programmes, welcoming a new era of donations in the form of data miners – not conceived before blockchain. Governments and Charitable givers will be able to

track their funds progress through transparent blockchain transaction processes. Smart contracts will be unbreakable and Payments to front-line workers will be transferred without the requirement of a third party".

Top of the Women's Coin Foundation agenda, is the working in partnership with other agencies, to use blockchain technology to support the delivery of:

Digital identity passports, for those 2 billion individuals worldwide without an identity.

As well as providing digital identity passports for children who do not

have a birth certificate – to stop child trafficking.

And ensuring that diversity and equality are at the heart of Women's Coin.

Asher Craig, Global Diversity Ambassador, said: "If we are going to empower women and help them rise out of the poverty trap, we need to give them skills, identity, a sense of belonging and hope – not just aid".

Dr. Jane Lewis, Strategic Director for Women's Coin (previously Networking Academy Manager for a Global Corporation), supported Asher's views by saying: "The Women's Coin Blockchain Business School will do just that – provide coding and digital skills for girls as well as women. A digital citizenship certification to authenticate learning, will provide access to employment outside or inside of the home. All learners will have a dedicated individual learning ledger which will authenticate learning – providing access to jobs and academic education".

In the G20 countries alone, there are 12 million registered SME's. Providing

training and mentoring will guide women at home and in the developing world, to create businesses, that will serve their families and communities. Digital identity passports will open lines of credit for those who are un-served or under-served by financial institutes. And smart contracts will provide surety for investors. According to Dr. Jane, "All of this is made possible, just by using Women's Coin as a currency for good".

Cara Bamford, Executive Director of the Women's Coin Foundation, shared her views on Eco-Tech: "We need to ensure that our data mining for Women's Coin uses renewable energy, and supports our values of a sustainable, green planet".

When will Women's Coin be available?

Women's Coin currency will become available at the 'Pre-Initial Coin Offering' and 'Initial Coin Offering' scheduled for September 2018. There will then be two ways to buy Women's Coin:

• Online in the same way you would buy any other encrypted currency (via the Women's Coin website). Every individual will have their own Ethereum wallet with a unique code,

that ensure the currency is safe and secure.

• Or via pre-loaded credit card.

There will be a pre-placement investment phase from 31st March to 30th April 2018 which will offer SER token at discounted rates.

Twitter and other social media alerts will promote each phase of the Women's Coin offering. Visit www.womenscoin. com for more information.

The Global Women's March

Professor Christine Bamford said: "We are being inundated with women (and men) who want to join up to the Women's Coin Foundation now and not wait for the Coin to be available for purchase. In response we are starting the Global Women's March on Mother's Day, on the 11th March 2018, to encourage Women Coin supporters to become connected citizens of the world. A gesture of solidarity and care for women who are living in extreme conditions with challenging, chaotic lives".

Become a connected citizen through Women's Coin Facebook and

registering for a newsletter on the www. womencoin.com website. The first 100 supporters will receive a Women's Coin Ambassador lapel badge. Readers of this article can also apply for a free lapel badge by registering for the newsletter.

The Time is now!

"There has never been a better time to foster equality and empowerment for girls and women" said Professor Christine Bamford. "There is a feminine energy and passion to make the world a better place for our children and grandchildren – we cannot travel this path without the aid of men who support, collaborate and open doors. This is collective, connected, consciousness to accelerate humanitarian support through lockchain and women's purchasing power".

frontiers
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Uniting industry and academia in pioneering journal dedicated to blockchain from a leading scientific publisher

By **Ruth Miller and Sarah Yardley**

A new collaboration between Frontiers and the CCEG will make cutting-edge research on Blockchain technologies freely available through a fully open-access, online journal platform. Led by founding Chief Editors Professor Olinga Ta'eed, director of the CCEG, and Dr Christopher Clack, financial computing expert and founder of the Thomson Reuters laboratory at University College London, the new *Frontiers in Blockchain* journal will publish rigorously peer-reviewed research, ranging from cryptocurrencies for social justice, to smart contracts.

Research on Blockchain-inspired technologies has grown exponentially in recent years, alongside rapid development of Blockchain applications and use within an ever-diversifying range of sectors worldwide.

As Professor Ta'eed explains, *"Blockchain is the movement of digital value from A to B. Hitherto the focus has been on the transaction of tangible value, namely Bitcoin and application to hard assets. But of course love has value, as does kindness, hope, generosity, in fact all these soft assets have proven to*

have greater intangible value to us. With the rapid research in digitising sentiment, we can not only capture non-financial value, but also transact it through Blockchain.

Tokenisation of value including Token Generating Events (ICOs), represent the emergence of a new class of social impact instruments. These include cryptocurrencies with values that appear to have captured the imagination of vibrant, aligned, cohesive, transactable communities worldwide".

While Blockchain has enormous transformative potential, the shortage of focused, peer-reviewed publication outlets for Blockchain research poses challenges for its validation and quality assurance. *Frontiers in Blockchain* will provide a much-needed, centralized source of high-quality research, demonstrating the breadth and value of Blockchain technologies and their implementations.

> **With the rapid research in digitising sentiment, we can not only capture non-financial value, but also transact it through Blockchain.**

Dr Clack asserts, *"The Frontiers model of Collaborative Peer Review as an open engagement between author and reviewer, will be particularly beneficial to industry researchers as a way to receive expert academic commentary and guidance on their research."*

> **The Frontiers model of Collaborative Peer Review as an open engagement between author and reviewer, will be particularly beneficial to industry researchers**

Frontiers' grand vision is to build an Open Science platform where everybody has equal opportunity to seek, share and generate knowledge. Founded in 2007 by two leading neuroscientists, Kamila and Henry Markram, its oldest publications have already grown to become leaders in their fields, proving that this pioneering approach meets the complex demands of modern scholarly publishing. Most importantly, as Kamila points out in a TEDxBrussels presentation, "Imagine, if we had full access to our latest science, how that would accelerate innovation, economic growth, and all the solutions that we need for a sustainable future?". By unlocking cutting-edge research, Open Science will facilitate a faster progression towards the UN Sustainable Development goals.

Frontiers in Blockchain aims to publish rigorous research covering all theory and applications of Blockchain and Blockchain-related technologies. The journal will welcome research from both academia and industry, creating a synergistic network which facilitates the evolution of the fast-growing and exciting field of Blockchain study. By accepting original, high-quality submissions, including theoretical, computational, and experimental research and development, as well as applications, case studies and position papers, *Frontiers in Blockchain* will enable the dissemination and communication of scientific knowledge and impactful discoveries to researchers, academics, practitioners and the public worldwide.

Frontiers in Blockchain will be open for submission later this year. If you are interested in joining the editorial board please contact blockchain@frontiersin.org, and keep up to date with the latest journal news and developments by following the journal Twitter page @FrontBlockchain.

> **"Imagine, if we had full access to our latest science, how that would accelerate innovation, economic growth, and all the solutions that we need for a sustainable future?".**

About the Chief Editors

Dr Christopher Clack

An internationally recognized computer scientist based at University College London, and recipient of the prestigious Doctor of Science award from the University of Cambridge, Dr Clack brings 34 years of academic experience to *Frontiers in Blockchain*. He is known for leading change in the interaction between academia and the financial services industry through initiatives in research, knowledge transfer and teaching. He advises and undertakes research with investment banks, financial technology companies, and standards bodies. He founded the UK Government-funded Financial Services Knowledge Transfer Network, established to identify business challenges to inform academic research and to encourage partnerships between the two sectors.

Professor Olinga Ta'eed

With an impressive background in business, financial industries and social activism, Prof Ta'eed's extensive experience and insights into industry and the applications of Blockchain-technologies led to the founding of the CCEG. His other ventures include the development of the Social Earnings Ratio, the world's most rapidly adopted impact metric to digitally capture intangible value. He is now developing revolutionary "alt coins" – including Women's Coin, and the UN Sustainable Development Goals Coin – that transact this value using Blockchain. He is chairman of Seratio Ltd and founder of the IoV Blockchain Alliance for Good, and Rothbadi & Co, a large institutional Blockchain consultancy.

Frontiers in Blockchain

"For Students, By Students: A New University Experience with Student Coin"

By **Benjamin Stone**

Benjamin is the Founder and Director at Student Coin.

Blockchain for a change: A New University Experience with Student Coin

"The idea of Student Coin was born in a Social Enterprise workshop. I was in a group and I wanted to focus on something financial, which at first the other members did not want to do. I was persistent and managed to convince the group to go ahead with my idea. It was then presented to our two lecturers. I then continued to develop the idea and presented it at a CCEG Blockchain event a few months later. Since then we have joined with Seratio to build my idea of a Student Cryptocurrency to create real change for Students."

"I have always had a passion for creating change for both myself and for others. Being able to have an idea, and see it grow into a company with the opportunity to change the lives of millions of students around the world is amazing. The more work I have, the more motivated I get." – Benjamin Stone, Founder of Student Coin.

The function of Student Coin is to serve the students before, during and after their time at university. As a company we view students as the future of all countries, and being able to get them started in the world by being one step ahead, will make the whole university experience worthwhile. We believe that building strong relationships is a vital activity in the modern world and question why businesses fail to build relationships with students.

At Student Coin, we are there for students at the start of university. We provide the platform for students to learn, experience and grow as individuals, and get them prepared for graduation as well as continuing to support them after graduation.

The Student Coin platform is the link between the world of students, the world of business and the world of possibilities for students - Student Coin is the catalyst for change.

This will be done using the Student Coin platform. The platform will be developed into a mobile application, ensuring that it is not a chore for users to use the app in their daily lives. Gone are the traditional methods of collecting the opinions of students via long, disengaging and bland surveys. Student Coin aims to incorporate the students' votes into their everyday activities, making it part of their lives, and giving students the opportunity to be heard. The platform is there to project the voice of students to the right people.

As a scattered group, students do not have the power to influence their world, because existing institutions are not typically on the side of students. However as one body, students can create incredible change. Student Coin will be the platform which allows students to step up, and unite as one group and ultimately make the rest of the world listen to them. There are a huge number of students who are not being listened to, or valued by their universities. The modern-day student is merely seen as a financial figure for the university to use. However, without students, universities would cease to exist. With the increase in tuition fees, the logical expectation would be that the power of students would also increase. But in fact, there is a decrease in the power of students: as a group, students have very little control over the direction they take in learning and entering the world of business. Whilst the Student Coin platform will do this, we will also ensure that the student's time at university is focused on learning, and not having to worry about finances and how they going to pay the next bill.

One of the biggest things a student wants, is to be heard by the institutions.

For three or more years, students are putting their trust in a business to educate and prepare them for the outside world. But over time this trust has been lost, especially in recent years - when universities have set their tuition fees to maximum levels, but failed to empower the students.

Students want their voice and their power back. It is not only universities that are failing to listen to them, but other businesses that are viewing students as an opportunity to make money - without ever building a relationship or helping them.

Student Coin will be able to use its platform to not only give students a voice, but to also give them a head start after university. Students should not be on a £9000 a year figure, when they are the future of the economy. Building a stronger and better student, is ensuring the growth of the country and future generation. Universities are there to prepare a student for their next steps in life: to merely churn out degrees is no different to selling them online, if the student is not developed as a person. The end result would merely mean a waste of time and money.

Student Coin are not only here to give the voice back to students, we are here to create a financially-stable university experience. There are so many students who will never pay off their student loans, who live on their overdraft, and struggle to enjoy their life whilst studying. We additionally aim to provide students with the ability to take their education to the next level, via the use of industry contacts, networking and supporting extracurricular activities. Student Coin is here to change what means to be a student, and to make the whole experience and transition a more enjoyable and beneficial one, whilst keeping the student at the heart of everything we do.

How can students bring about genuine change? Well, at a university level it is extremely hard to generate momentum with any campaign, or even to be heard by one's own institution. With a large amount of media coverage currently being aimed at students, and the negativity circulating all aspects of university life, maybe now is the time to implement real change. Student Coin has been developed with the intention of empowering students. The fact that students are the 'future'- and a

huge factor in the future success of the nation - one would then think that they would be listened to. The reality of the situation is far removed from this, and students are being undermined in all aspects of the education system; from over charged tuition fees, to shambolic maintenance loans.

Currently students will typically use outdated incentive schemes such as NUS. NUS offer discount incentives for students, which are blanket-level discounts that have no originality or personality reflected in their offerings.

The student voice needs to be heard, and for the first time in many years, students are demanding that they are listened to. Student Coin has students at the heart of its operation and through this company, students will receive fair, increased discount incentives - as well as becoming part of a much greater movement. Typically, students receive discounts at many businesses they visit. These discounts are often between 10 – 20% and until now, this has been fine for most. Retailers truly believe that these offerings are sophisticated enough to entice the student demographic to their business, however what if students themselves could determine the amount they save? Nowadays large organisations that rely on suppliers, receive increased discounts and rates for their goods, based on the scale of the orders they are producing. Why is it that students aren't being treated in the same way?

Until now, there has been no platform where students can collectively stand together to address genuine problems in their university life - Student Coin will change this. Student Coin is a platform that students can use to elevate their views to the masses. If students believe that a certain store isn't treating them correctly, if they want increased rewards, or they wish to address negative experiences, Student Coin will be the platform for them. By standing together, students will never again be treated as a single demographic that can be induced by minimal discount schemes. Student Coin is creating and driving change, and together, the student demographic can possess the power that it deserves.

The day-to-day struggle the student faces with their finances, is expected to just be a normal part of student life. Every student realises they face huge debts long before their course begins. Why is it that an organisation hasn't come forward to help the demographic and stabilise this rapidly sinking situation? At Student Coin the ethos is on financial stability, with the aim that students have greater stability throughout their university life.

Student Coin will implement financial profiles on its platform, that are completely personal for every student. These personalised accounts will enable a student to fully benefit from discount schemes and additional incentives that may arise throughout their educational journey. How is it fair that a struggling student receives the same discount that another student receives, who is in a much stronger financial position?

As well as revolutionising financial stability for all students, Student Coin is also offering investment schemes for all to get involved with, to allow one's money to go further throughout university. With the topic of student debt being rife in the media, Student Coin will also roll out micro-loans. However, these loans will be calculated and fundamentally fair. Minimal interest micro-loans will allow students to ease their financial worries on a temporary level, as well as understanding they will not be expected to pay back a ludicrous fee. Investment schemes before students have even began university, are also being investigated, with parents wishing to support their child throughout their journey. Student Coin will make this process easier than it has ever been. Student Coin will increase the financial stability of all students on the platform, whilst remaining focused on the genuine issues that need fixing.

Large-scale Pedagogic Transformation at the University of Northampton

By **Prof. Alejandro Armellini**

Professor Alejandro Armellini is the Dean of Learning and Teaching, and Director of the Institute of Learning and Teaching in Higher Education at the University of Northampton. He is also a Fellow of the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA) since 2015, and a Principal Fellow of the Higher Education Academy

Building a brand new university campus can be an exciting prospect, but it may not, per se, be an example of innovation. However, a purpose-built campus, without lecture theatres or staff offices-specifically designed to enable 21st-Century learning and teaching, may well be. The construction of the University of Northampton's Waterside Campus, opening in September 2018, is a big part of the story. But what we really need to focus on is not the new site, the buildings on it, or the technology-rich environment that we will create, but the learning, teaching and research that will take place there to promote positive change.

Since 2013, the University of Northampton has seen a process of large-scale pedagogic transformation towards Active Blended Learning (ABL), Northampton's new normal. ABL is not something we do in addition to our regular teaching duties: *it is our standard approach to learning and teaching*. The notion of 'blended learning' in general, and ABL in particular, is far more complex, multi-faceted and exciting than the mere combination of face-to-face with online components, as I have argued before. At Northampton, a module follows an ABL methodology if it:

- Is taught through student-centred activities to develop knowledge and understanding, independent learning and digital fluency.

- Has a core, collaborative face-to-face component, explicitly linked to learning activity outside the classroom. This is done within a single, consistent, interactive and student-centred pedagogical approach.

- Helps to develop autonomy, Changemaker attributes and employability skills.

A module is *not* taught in ABL if one or more of the following statements is true:

- It makes regular use of non-interactive lectures.

- The virtual learning environment (Blackboard) is primarily a content repository.

- Online activity is merely an add-on to the face-to-face sessions.

- There is no evidence of regular, systematic enhancement.

Although often neglected as a result of the practitioners' over-emphasis on "content delivery", the second box in Figure 1 is key: what matters the most is not the content itself, but what students do with it to achieve outcomes. Making sense of that content is essential for learners to engage with it and be
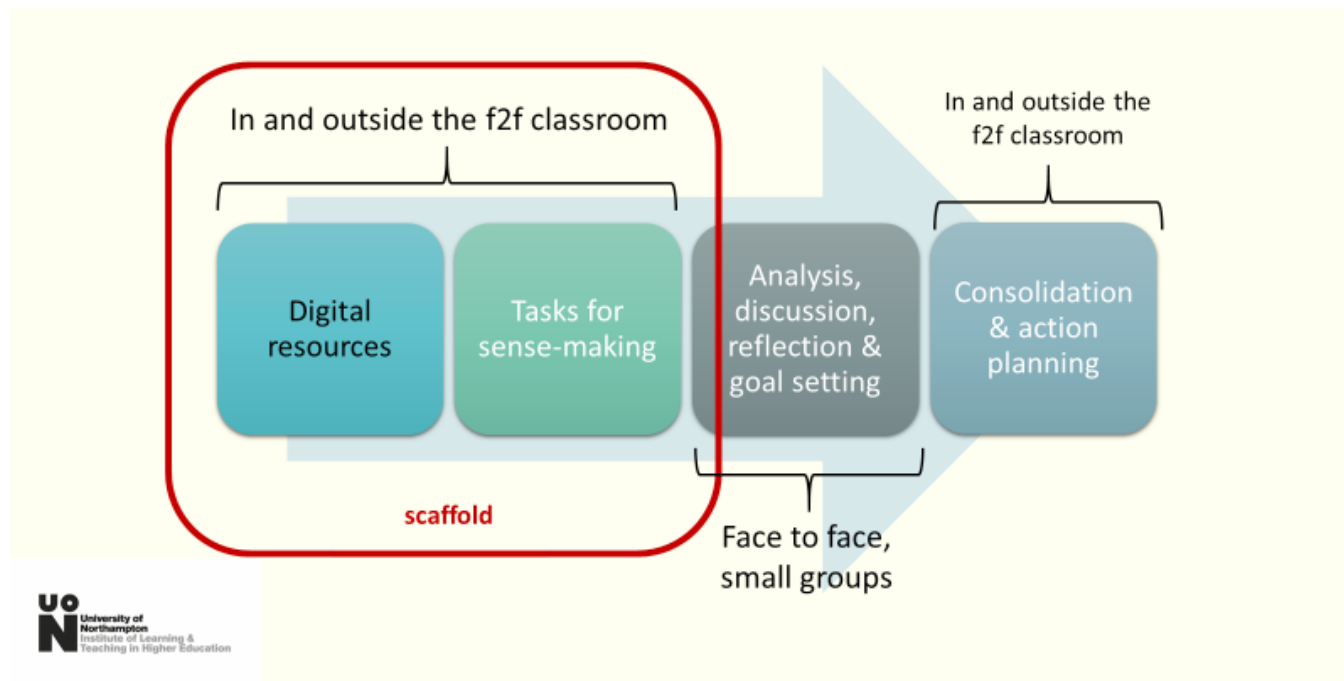
Figure 1: the ABL model

productive members of a group – in the physical classroom and online. Well designed "tasks for sense-making" provide the scaffold that helps many learners achieve that. Good practice in learning design focuses on creating meaningful scaffolds for learners at all levels.

CAIeRO (Creating Aligned Interactive educational Resource Opportunities), referred to as *Carpe Diem* in the literature, is at the heart of Northampton's strategy to support staff in the design of modules and programmes for ABL. CAIeRO is a well-rehearsed team approach to learning design.

Over the years, research, case studies and blog posts have provided evidence of the suitability and effectiveness of CAIeRO as a lever for building institutional capacity in student-centred learning design. To support staff in the deployment of ABL (i.e., teaching in an ABL-friendly way that capitalises on the design work done through CAIeRO), Northampton offers a range of other workshops that focus on teaching practice, as well as opportunities to engage in peer observation of teaching. All these activities fall under the auspices of C@N-DO (Changemaking at Northampton: Development Opportunities), the university's HEA-accredited academic staff development scheme. By taking part in these activities, all of which are aligned to the UK Professional Standards Framework, staff can be considered for professional recognition as Associate Fellows (D1), Fellows (D2) or Senior Fellows (D3) of the HE Academy.

To establish the impact of the shift to ABL in different academic settings, the Institute of Learning and Teaching in HE at the University of Northampton has funded a number of projects over the past two years. Some have already produced research outputs, such as *Overcoming barriers to student engagement with ABL*. *Seven additional projects on*

aspects of ABL are being funded in the 2017-18 academic year. These projects will report their findings by July 2018.

What matters is not the content or the technology, but what students do with them to achieve outcomes. Similarly, what matters is not so much the space, but how we make optimal use of it to nurture tomorrow's Changemakers. The new Waterside Campus is Northampton's attempt to integrate a new physical learning environment with an explicit, deliberate, scalable and evidence-based approach to pedagogic change.

"The Student Coin platform is the link between the world of students, the world of business and a world of possibilities for students, Student Coin is the catalyst for change."

"Student Coin will be that platform which allows students to step up, unite as one group and make the rest of the world listen to them."

"At Student Coin we are there for students at the start of university, we provide the platform for students to learn, experience and grow as an individual and get them prepared for graduation and to continue to support them after graduation."

"We believe that building strong relationships is a vital activity in the modern world and why do businesses fail to do so with students?"

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BLOCKCHAIN: THE TECHNOLOGY TO RULE THE NEXT CENTURIES

By **Qi Xia & (Obour Agyekum, Yasong Wang)**

Center for Cybersecurity, University of Electronic Science and Technology of China

Qi Xia, PhD., associate professor at School of Computer Science and Engineering, UESTC (University of Electronic Science and Technology of China), deputy director of Centre for Cybersecurity, visiting scholar at University Pennsylvania. She has led over 20 projects including the research and development program on cyber security for Ministry of Science and Technology, international cooperation project for Natural Science Foundation of China.

The Internet has become the biggest innovation to ever happen in computer science and is an essential part of our everyday lives. The enormous use of this technology spans from academic to social purposes, and has been embraced by all. For a number of years, we have had the 'Internet of Information', which has made significant changes to the way people communicate, access and use information. A drawback to this major invention has been the way economy is conducted. This is due to the fact that people rely on middle-men like banks, companies and governmental agencies, to create trust among participants. Moreover, we tend to rely on these third parties to create a business logic, including contracting and record keeping. With the advent of Blockchain technology, there is a new platform for trust, transparency, and building value among parties. This is a booming technology that will change the way transactions are completed in today's modern society.

Through the introduction of the specific cryptocurrency Bitcoin, Blockchain came into prominence. Essentially, Blockchain is a distributed database of records, or a kind of public ledger, of all transactions or digital events that have been executed and shared among participating parties. Each transaction in the public ledger is verified by consensus of the participants in the network. And, once entered, information can never be erased. Each Blockchain contains a certain and verifiable record of every single transaction ever made.

Every Blockchain is a sequence of blocks, which holds a complete list of transaction records, like a conventional public ledger. Each block consists of a block header and the block body. The block body is composed of a transaction counter and transactions. The maximum number of transactions that a block can contain, depends on the block size and the size of each transaction. The relevance of the
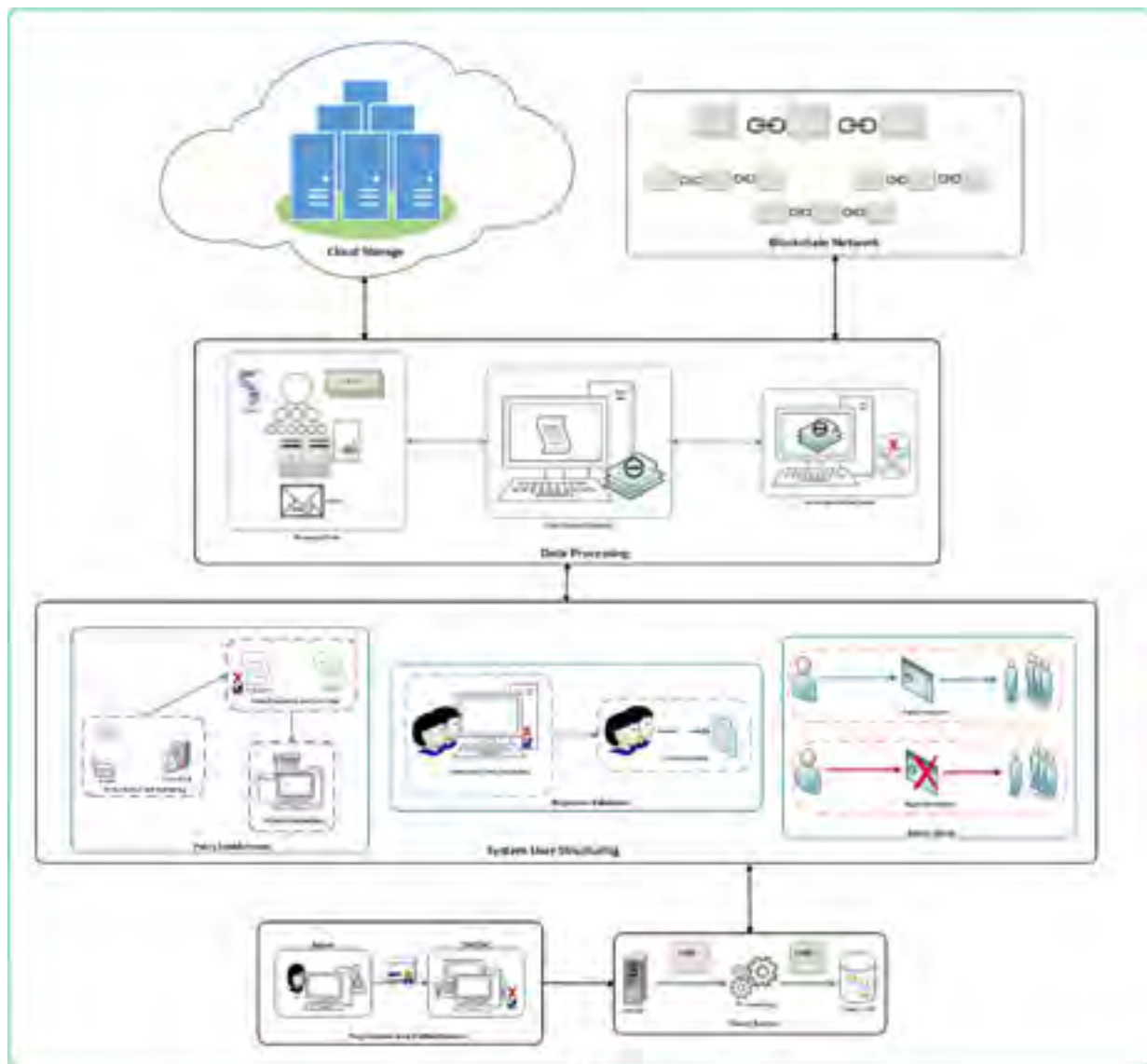
A technical view of a typical Blockchain system

Blockchain technology is that it is a decentralized system, thereby removing the need for a trusted third party.

In conventional centralized transaction systems, each transaction needs to be validated through the central trusted agency, inevitably resulting in cost and performance bottlenecks at the central servers. Consensus algorithms in the Blockchain are used to maintain data consistency in a distributed network. Transactions can also be validated quickly, and invalid transactions would not be admitted, but a record of such a transaction can be made. It is nearly impossible to delete or rollback transactions once they are included in a Blockchain. Due to these features, systems and applications achieve a secured and immutable distribution of records among untrusted participants.

In the near future, with emerging technologies such as the 'Internet of Things' (IoT), there would be hundreds of Internet-enabled things and devices. These devices may need a way to communicate value – both monetary value and sensitive data requiring security – securely, privately and peer to peer. In essence, the Internet needs a ledger of everything, and this is where Blockchain comes in. This decentralized system allows a large group of people, or companies alike, to build value and organize capability peer-to-peer, through the use of smart contracts, contracts which are automatically enforced by computer protocols. They are programmable scripts that act as a kind of finite state machine, executing instructions when an action has been activated. Using Blockchain technology, it has become much easier to register, verify and execute smart contracts. These smart contracts facilitate and enforce the negotiation of a contract, and eliminate the need for both the physical document and an intermediary. They define the relationship between stakeholders (addresses) and automate their interactions.

Additionally, the Smart Contracts Report logs every transaction that has taken place among the participants in the network. This allows all participants to monitor every transaction effectively, and offers assurance and control of the processes involved, in a trustworthy environment. Details (logs) of transactions are sometimes stored in a Smart

Contract permissioned database for enforcing penalties to perpetrators, and also to make requests for receipts of completed transactions.

Since databases are immutable, the security of transactions is preserved. Coupled with these smart contracts, it is easier to trace attempts at fraud. In essence Blockchain is a much more secure and efficient mechanism for the movement and storage of value. It is technologically very expensive to break off a transaction or make changes to logs that are stored on a Blockchain network.

A technical view of a typical Blockchain system

On the issue of value preservation, imagine a technology that makes an individual have more control over their data and identities. The majority of times, personal data is not owned by the individual themselves, but used by others, for differing reasons, ranging from research to malicious intent. Basically, our data is owned by intermediaries, and in certain ways these intermediaries know us better, than we know ourselves. But with Blockchain, privacy can really be preserved, as the data owners themselves own their sovereign identities, and can therefore decide who gains access to certain kinds of information.

Blockchain promises to bring a whole new function to technology, and it is not just limited to financial operations due to the introduction of Bitcoin. There is no doubt that financial firms have benefited from Blockchain, but Blockchain technology has a lot to offer than just monetary value. There are several other uses for Blockchain, including but not limited to: voting, data storage, identity management, and regulation. A few other potential uses are explained below.

Car Leasing

Car leasing companies make car hiring look simple, however as a general rule, this can become very complicated. The critical challenge faced by the present car leasing companies, is that although they have their own system of management and information, their sources of information are not whole,

and this plays a key role in the weakness of this present-day system. Imagine a system where each participant could monitor, access, share and analyse up-to-date information, regardless of where the vehicle is in its life-cycle. Envision one agreed view of the total vehicle history, and how this will enhance administration, warranty and recall costs, by giving a unified, whole and complete record of vehicle data.

Recycling and waste management

The way waste is managed affects the environment in a multitude of ways. With the world battling the consequences of the Greenhouse Effect, an efficient and effective management of waste is required. From the collection of trash bins and sorting of waste materials to recycling, all these processes can be stored on a ledger and kept on the Blockchain. This in essence tracks and records every activity that happens in the recycling process. We could create a 'Token of Value' for scrap merchants who help in the sorting process of recyclable and non-recyclable materials.

Music industry

Piracy has been a major concern in the music industry. There also is a tendency that many artists in the industry receive less than the amount they are due, especially after a multitude of hectic and tiring performances. Some managers cheat their artists. With Blockchain, alongside smart contracts, all these malicious acts will be curbed. The transparent nature of the Blockchain allows all parties to see and know everything that ever happens to a transaction, for example the control over the distribution of content. Musicians can register relevant ownership information on the Blockchain, where payments will be delivered automatically after customers have purchased them. There is no platform to harbour cheats.

Blockchain today presents life-changing, and indeed astonishing technology after the invention of the Internet. This is going to change the way transactions are made, enabling a value-oriented environment both in monetary and intangible terms. We just have to sit back, embrace it, and get involved. It is happening right now as we speak.

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Ubuntu Coin:
a means to unify the global African descendant community

By **Mamadou Toure ,** (Co-Founder Ubuntu Coin)

Mamadou is Chairman and CEO of Ubuntu Capital, a leading Investment and Advisory firm, focused on designing and implementing integrated innovative investment solutions and uplifting project ecosystems. He is also Founder and Chairman of Africa 2.0 Foundation, an initiative-driven advocacy group that brings together emerging leaders representing African countries

& Ishmael Diaw , (Head of Business Development, Ubuntu Coin)

Most blockchain enthusiasts are leveraging blockchain technology to augment their businesses and/or to monetize cryptocurrencies. However, one could perceive blockchain's true potential as being a vehicle to aid, or even solve, Africa's social and economic challenges. Hence the creation of Ubuntu Coin.

Ubuntu Coin is the world's first digital currency to transact and record both the financial and non-financial value of the global Afro-descendant community, via a blockchain with mass adoption. Ubuntu Coin announces the dawn of the 4th industrial revolution through the use of digital currency, and the merging of financial and social value. It is also the means of finally setting the global Afro-descendant community on equal footing with its peers.

Ubuntu Coin was designed in partnership with The Centre for Citizenship, Enterprise and Governance (CCEG), the world's leading think tank on the movement of value. As such, Ubuntu Coin is backed by proprietary financial and non-financial metrics which underpin global legislation, and which have become internationally recognized as a standard.

Now, for the first time in history, the ability for the global Afro-descendant community to record and transact value itself, has become a reality.

Ubuntu Coin is uniquely positioned to tap into the global Afro-descendant community, which is representative of a population of 1.4 billion people and a 4 trillion-dollar economy. Ubuntu Coin hones in on the African market, particularly to leverage rare resources for asset backed coin development, along with the 1 billion unbanked or under-banked population- a population which is already sensitized to mobile money networks and e-vouchers. The African continent has already demonstrated its ability to leapfrog into mobile systems by overstepping fixed telephones. The same phenomenon is occurring with digital and crypto-currencies.

Ubuntu Coin was designed not only to reach new markets, but also to synergistically unite existing markets suffering from common shortcomings. Total consumption across Africa is set to hit $4 trillion by 2025, yet only 12% of goods are traded intra-continentally. The 40 million African Americans have a $1.3 trillion buying power, yet only 2 cents of every dollar an African American spends goes to black owned businesses. Ubuntu Coin delivers the services which address the most critical inefficiencies of the global afro-descendant community– building wealth, retaining wealth and recycling wealth.

As a digital currency targeting the world's Afro-descendant community, Ubuntu Coin effectively penetrates every corner of the world, providing a plethora of services programmed as smart contract and embedded into each transaction. Through the sheer force of numbers, U-Coin will enable the financial development and economic well-being of those from Detroit to Dar Es Salaam. It will do so by unifying and correlating the purchasing power of the global Afro-descendant community, whilst being available to other communities and entities transacting with the community, and therefore expanding into broader global markets.

One of the key features of the Ubuntu Coin is the possibility to offer remittance services. It is clear that the current remittance system is antiquated, cumbersome and highly expensive (up to 10%) led by Western Union, MoneyGram etc. Using their mobile apps and internet devices, owners of Ubuntu Coins are able to instantly transact or send money anywhere in the world.

In an African context, transactions can happen to be very small in value, yet traditional credit/debit cards require a minimum value of transaction, and charge fixed fees for

acquisition of terminals. The incompatibility of credit/debit transactions with the current African economic context has resulted in slow adoption of traditional banking methods. Ubuntu Coin is a form of payment tailored for Africa and the diaspora, allowing users to execute both large and micro-transactions, without incurring unreasonable service fees.

Ever since Africa invented mobile banking more than 10 years ago, most innovations on the continent have ushered in small increments of progression. Ubuntu Coin represents a new paradigm shift –the introduction of a single digital asset, which compounds the financial and social value of an entire global community.

Ubuntu Coin enables 3 major disruptive shifts in the banking industry which include i) KYC simplification, ii) Trade Finance and iii) Social Lending:

(i)   One of the major hurdles preventing penetration of banking services in Africa is the KYC constraint to identify customers. By leveraging the blockchain feature of recording of digital identities, Ubuntu Coin will introduce Africa's first Digital Identity technology, which allows third parties to access, and individuals to own their single digital immutable identity. This will stimulate quicker accumulation of new customers, easier compliance to KYC & AML regulation, and a full audit trail for product suitability and tracking.

(ii)   Ubuntu Coin helps fast-track the digitization and automation of trade finance, which historically requires the heavy logistics of handling documentary collection, letters of credit and consignments. With the Ubuntu Coin system, banks and traders will upgrade traditional trade finance documents, and replace them with cryptographic keys and multi-signature wallets stored on the blockchain.

(iii)   Ubuntu Coin has an integrated function which enables all owners of Ubuntu Coin worldwide, to not only to trade with each other, but also to lend each other money in a decentralized way (enhanced with the digital identity model). Ubuntu Coin offers a mobile peer-to-peer lending exchange, providing affordable access to loans. Ubuntu Coin owners are therefore positioned to i) instantly create a loan, ii) browse all loan requests, iii) Create and build a credit score.

The world is entering the third phase of 'the Internet of things' and in particular, 'the Internet of Value'. This is the phase most suited for Africa, where monetary value is determined by centrally controlled markets in distant continents. This has resulted in double-digit interest rates at local currency base rates, which triggers a negative liquidity cycle, restricting any growth or development of the local people. Blockchain and distributed ledger technologies decentralize this, by disintermediating the existing, established, punitive system.

Ubuntu Coin has been created with the underlying objective of igniting much needed international awareness about Africa's innovative capacities, and by legitimizing the continent's role as a key player in blockchain. More importantly, through Ubuntu Coin, other Afro-descendant players will be encouraged to engage in this space, which in turn, will accelerate their community's propulsion in an industry poised to redefine the way the world transacts.

Digital Universities - Flipping The Institution, Not Just The Classroom

By **Martin Hamilton, Jisc**

Martin works as a Futurist for the education technology charity Jisc, operators of the Janet network, eduroam and JiscMail. Martin leads Jisc's Future and Emerging Technologies team, whose work is all about generating and channelling new ideas and building partnerships to bring them to fruition. He is particularly interested in the societal implication of ubiquitous robotics and artificial intelligence, and humanity's emergence as a true interplanetary species.

Universities are paradoxical organisations - on the one hand they operate at the leading edge of research and innovation, yet on the other hand, they still use centuries-old approaches to teaching and learning. In this piece I'll ask what it means to be a truly 'digital university', consider where this might lead us, and pick out some examples that might help us to chart that path forwards into the near future.

I contend that there are really two sides to most universities - the first is the university of the researcher; testing new hypotheses and creating new algorithms, techniques, materials and so on. The other university is what I like to think of, not uncharitably, as 'the machine'. This consists of the people, processes and facilities that are responsible for keeping the teaching and administrative side of the institution on the road.

It's not unusual to find these two universities operating simultaneously on the same campus, largely independently of each other. This can be confusing, for instance if you are a prospective student you might picture that you after you start at the institution, that you will be taught by the research leaders that made that recent much trumpeted breakthrough. You may be disappointed to discover that the topic that brought you to the university is only covered in an optional module in the final year of your degree, and by a research student 'acting up' as a lecturer.

If you are part of the research university, the 'machine' university can be very frustrating - constantly making unreasonable demands for you to comply with all kinds of irrelevant policies and procedures, and diverting you from your research to sit on interminable committees that never seem to accomplish anything. You might be quite keen to teach directly about your discoveries, but this has a price that may put you off – namely months of bureaucracy dealing with program boards and admissions.

From the machine side, anything other than incremental change can be highly threatening. After all, we are doing well in REF, TEF, NSS and other metrics - why risk messing all that up with an ill thought out new course? What's more, our existing processes are set up for our particular modes of delivery - but say introducing a sandwich year or higher apprenticeships will require a root and branch review of IT systems, database models, coding and classification schemes, and so on.

I'm exaggerating somewhat for effect, of course, and many actors are quite deeply involved in both the research side of the university and the machine side. Furthermore, there

are some very interesting examples of institutions that are deliberately messing with the formula. We could look at Nottingham Trent's pioneering work on Learning Analytics, Warwick's joint courses with other European universities, and of course Northampton's introduction across the board of Active Blended Learning alongside their new Waterside campus.

Northampton is particularly interesting because staff offices and lecture theaters have been virtually abolished at the new campus – indeed the traditional 'Sage on the stage' format of lecture will be quite a rare occurrence after the move to Waterside.

So why would a successful university choose to disrupt itself so drastically? If we take a virtual trip over to Silicon Valley, things start to become a little clearer…

Stanford University's spin-out Udacity is one of a number of for-profit online education startups. Students pay hard cash for online education in areas that particularly lend themselves to the medium - such as artificial intelligence, cryptography, and other math and computer science topics. As befits a startup, Udacity has been experimenting with a range of different operating models, such as its own certifications, proctored tests in collaboration with Pearson, credit transfer to a conventional institution, and my personal favourite - a money back guarantee if you fail to secure a job in the area of your course.

Now picture the institutions that you are familiar with. It's easy to say "let's just try a few new things out and see what works", but the machine isn't set up to try new things. There will need to be meetings, lots of meetings…

But there's more - in addition to the inherent agility that comes with being a startup that has little or no baggage, Udacity is notable for having research leaders directly involved in the teaching. We're going to be learning about artificial intelligence from Peter Norvig, and self-driving cars from Sebastian Thrun. If these names don't particularly resonate for you, just picture going to the University of Manchester to be taught particle physics by Brian Cox.

This process is actually very attractive if you are a research leader who has an interest in teaching your subject - most of your involvement is up front in helping to devise the curriculum, create teaching materials and tests. No trudging across campus in the rain dragging a trolley full of handouts! With the bureaucracy of the machine removed, you might also find that you can spare the time to dip in to student forums when a cohort is running, and give people feedback on their assignments.

Can you see where I'm headed with this article yet?

Udacity would like you to think that they have effectively reinvented the university, replacing all of the baggage and inertia of the 'machine' with actual machines - machine learning and artificial intelligence, customer relationship management, online assessment and so on. We can imagine a future history of higher education, stating that this was the point when it became clear that the people and processes of the machine were actively hindering academics and learners alike. This was the moment when everything changed.

Whilst there is undoubtedly something to this, I think it is far too simplistic a view. For a start, some subjects are simply difficult or impossible to teach online - even with Virtual and Augmented Reality, there are limits to what we can do around lab simulations, virtual field trips and the like. What's more, there are a plethora of peripheral activities at university that help the learner to become a more well-rounded individual, to contribute to society, explore interests and develop skills that aren't formally part of the taught course program. An example of this is my alma mater, which had a popular hot air ballooning club and a busy community action group.

It would be all too easy to dismiss the likes of Udacity, however our truly digital universities should be learning from it. We need to be using technology pragmatically to help reinvent ourselves, even if that means quite profound changes to the machinery of the institution.

If this all seems far-fetched, cast your mind back to the days when Amazon was just a book seller. Now it has metamorphosed into the Everything Store that Jeff Bezos famously envisaged, but along the way it has also transformed everything from logistics and supply chains to cloud computing. Perhaps Udacity will be the Amazon of higher education, but why not your own institution?

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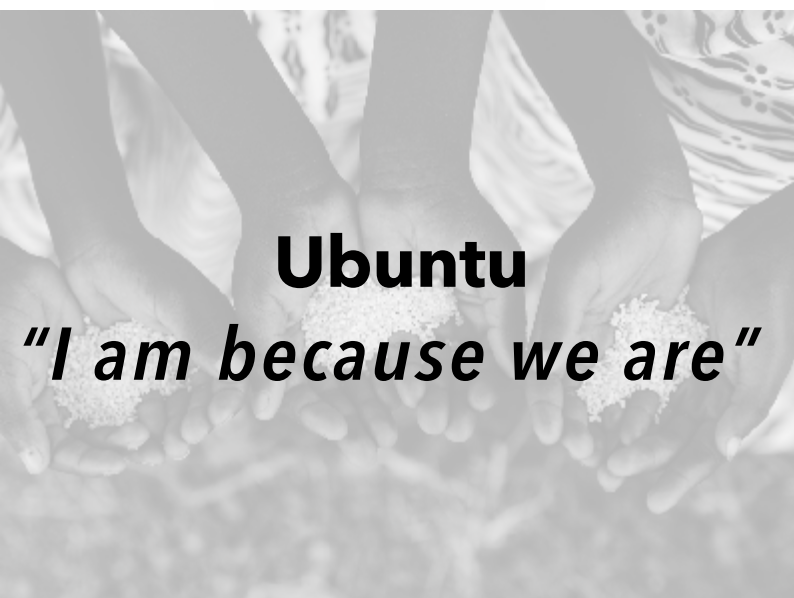
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Family Investments: Investing in Cryptocurrency as a nest egg for your children

By **Andrew Pritchard,**

Director of Growth Token

Andrew is a highly seasoned finance professional with over 30 years' experience controlling businesses in the financial services sector. Passionate about utilising his core skills in finance to help improve the lives of the people and communities around him, Andrew set up an energy consultancy organisation in 2012 which helped Cornish residents to combat fuel poverty by collaborating with the 'big six' energy companies and working on the government's Energy Company Obligation scheme (ECO) to reduce carbon emissions in UK homes.

To date, over 5,000 homes have been improved and Andy was invited to give a speech to the House of Commons on the impact of this scheme. In 2016 Andrew and his family moved to Spain where he founded a children's football academy to help young people of all ages to develop both their football and personal skills. Andrew's financial acumen was once again reignited after he invested in Bitcoin for his children on the recommendation of a friend. After seeing the value grow, Andrew decided to explore the world of Cryptocurrency further, becoming a fully fledged investor in 2017. Recognising the barriers to entry for many investors wanting to explore the world of Crypto investing, Andrew has brought together an incredible team of academics, financial analysts and directors to create '10x Growth Account', the

premier Cryptocurrency account and the first of its kind based in the UK.

An interview with Andrew Pritchard

Father of three, Andrew Pritchard first started investing in Bitcoin in2017, after a recommendation from a friend. He decided to invest £3K for each of his children as a nest egg for the future. Their investments are now worth in excess of 7 figures. Here, Andrew explains his reasons for investing and the process he went through when investing for the first time in cryptocurrency.

When did you first decide to invest in Bitcoin for your children?

In February 2017 a very good friend of mine, essentially sat me down and 'held my hand' to purchase 1 bitcoin each for my three children and helped me store them offline on a cold storage device.

How much did you invest?

I originally invested just £3k, but since then my investment has increased into 6 figures.

What platforms/process did you use for your initial investment?

Initially Coinbase, then GDAX and then Bittrex and Binance exchanges.

Did you face any challenges with regards to your initial investment?

It can be very confusing when you are new to the area, and I really needed the help of my friend (he has many years experience) as without it, I think I may have given up!

What did you expect the investment to produce initially?

I was optimistic that the investment into Bitcoin could be beneficial for my children's future, but this has been exceeded!

When did you realise that the investment was starting to grow/was worthwhile?

Within 4 weeks I started to read and educate myself and started to understand how much potential the Bitcoin/Crypto market has for the future.

What are their investments worth now?

They have passed the 7 figure mark.

How did the 10x Growth Account come into being, at what point in this process with investments etc, did this become a reality?

In September 2017, many of my friends and family were asking how I had invested into Bitcoin. Once I told them they really struggled with setting up their own accounts and even with my help it proved difficult as many of the respected exchanges were not accepting new account holders due to sheer volume. This is when I decided to find a solution and met several experienced people to discuss the 10x project. The 10x Account has taken nearly 4 months to produce following time spent with lawyers and bringing the best team together to operate and promote it.

You have continued to invest, what has been your strategy now you are a more experienced investor?

I only buy and hold and I only buy the altcoins that are managed by a great team, provide a real life solution to world issues and have a great whitepaper where their progress can be tracked. I have my favorites and these have produced incredible returns.

What advice would you give to other parents thinking of investing in crypto for their children? Do it! Only put in what is affordable and look at it as a longer term investment than trying to 'trade the currencies'.

What is the future of Cryptocurency?

The Cryptocurrency market is starting to link in and help traditional businesses, such as Ripple collaborating with Western Union and as this gathers momentum it will increase values. I'd like to think that sooner rather than later we will see Blockchain and Cryptocurrency being taught in Schools as part of the curriculum.
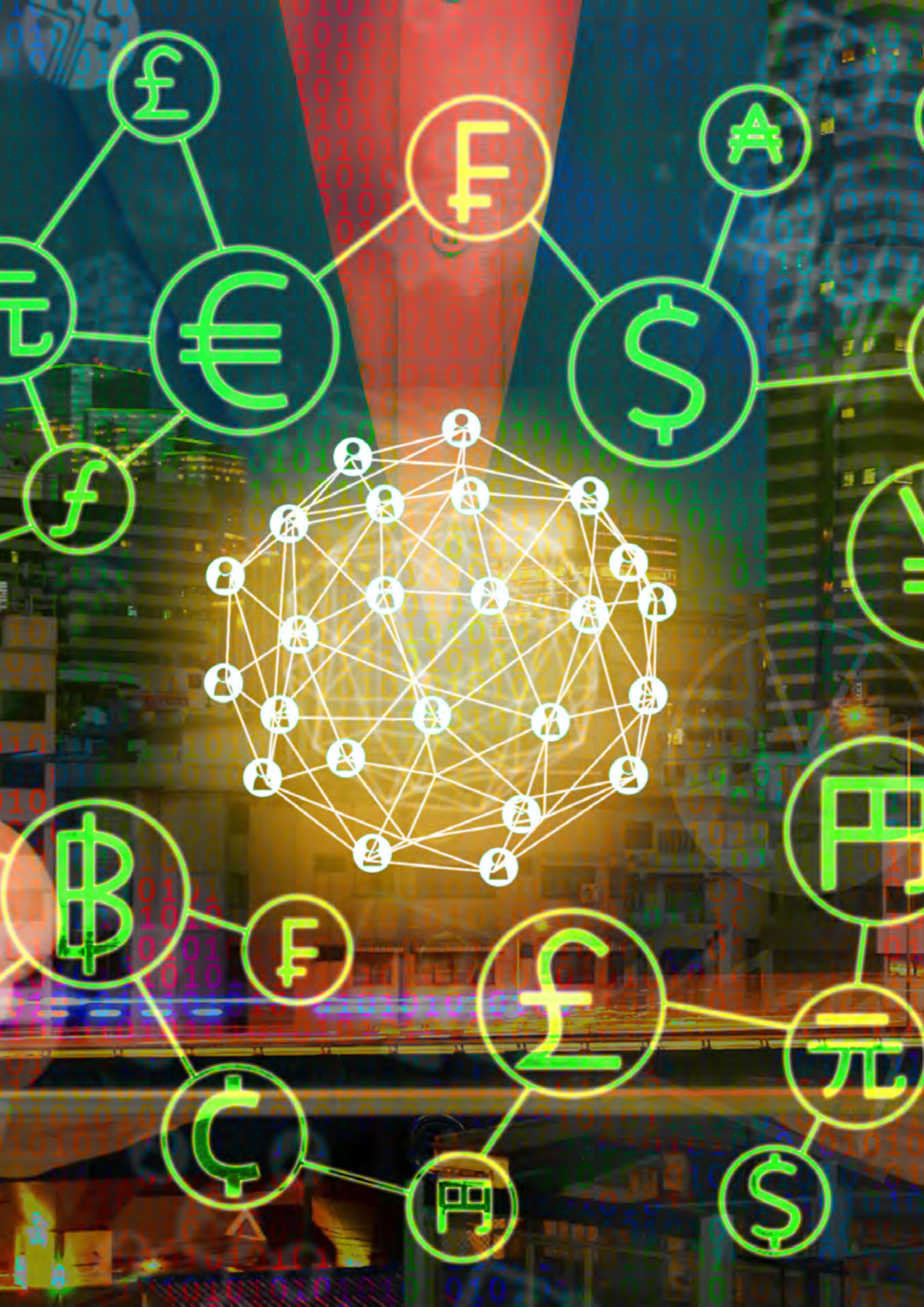

10 X Growth Account

From Web 1.0 to Web 5.0: The Digital University at the heart of the knowledge procurement cycle

By **Dr. Cristina Devecchi (PhD)**

Cristina used to work as a PR and executive secretary for the Director of the Centre for Middle Eastern Studies, University of Cambridge and as a researcher, Faculty of Education, University of Cambridge. Her interest mainly focuses on the deployment of human resources in schools and universities, with a particular interest in the area of knowledge management and intellectual capital.

Being and becoming digital may feel like playing catch up. Starting with Web 1.0 in the 1990s, the static web has gone through accelerating developments. Powered by both technological and economic changes, the 4th Industrial Revolution is transforming the landscape of an economy based on the creation, transmission, application and commercialisation of knowledge in its fullest and most complex sense. Things which a decade ago read like a science fiction novel plot, are now becoming reality. In the Internet of Things, material commodities are leaving room for the commodification of emotions as we share but also trade, exchange, and sadly, mishandle, values as goods. Strides in the development of artificial intelligence, are making technology an extension of being human.

While such changes do not mean that technology is more humane, they mean that new competencies, literacies, ways of working, and legal and ethical frameworks will be required to take full advantage of the new means of 'affordances' at our disposal. Whether the purpose is innovation, or just staying afloat, knowing what it means to be digital would only increase in importance. Universities have a key role to play in this shifting new landscape.

Despite a lack of a common definition and understanding about the nature, workings and aims of the 'Digital University'- unstoppable and fast developing technological developments are forcing the sector to reckon with big changes. In the not distant future, what is now considered futuristic will become normal. Yet the transition has been slow, incremental and patchy at times, with sparkles of innovative and disruptive entrepreneurial activity. But it is gaining speed. Mainly focused on modernising teaching, such changes are also impacting on how research is carried out, and the way universities work with industry and society. Most importantly, we still do not have a perfect picture of what is actually going on and how universities are coping with or leading on the digital challenge.

The contributions to the topic by Martin Hamilton and Ale Armellini focus on how universities are developing new ways of teaching and 'new learning affordances'. 'Active blended learning' promises to be different from online learning and MOOCs. Although more disruptive, blending is a means of going beyond a traditional lecture-style into a more collaborative experience in which learners and academics co-create knowledge and value. Along similar lines, Hamilton stresses the importance of truly disrupting the ways universities work to move beyond just teaching and learning. Such voices are echoed across the sector in the UK and worldwide.

Yet, there is more that can and should be done to make universities truly digital, so that they are not just catching up

on externally driven innovation, but which will enable them to be the innovation that the 4th Industrial Revolution demands.

How would this become a reality? How do universities need to change to embrace and lead in an uncertain future?

There is a consensus that the major change should be a pedagogical one. Simply put, we need to get away from the 'Sage on the stage' model of the traditional lecturing style, to a more constructivist approach, to co-learning and knowledge and value co-creation. Although this is a simplistic argument since not all teaching has been delivered as lecturing, there is some truth in the need to rethink, redesign and remodel how we connect and engage with students. This is not just because students are now consumers- but because universities have, as they have always had, a moral responsibility to enable their students to contribute to society, economically or otherwise.

Universities have not been entirely idle and there are an increasing number of innovative approaches. Innovation is not led by the US and UK alone. The *Opening Up Education* (EC, 2016) sets up a framework for European Universities' modernisation and digitalisation agenda. Many more examples can be found in the surging Asian and Australian universities. Such pedagogical changes have moved considerably from the use of technology as repository into taking advantage of apps, platforms, virtual reality, and social media. Online learning is now more than just MOOCs. It is flipped classrooms, and blended learning. It takes place anytime and anywhere on an always connected campus (Sheail, 2017). It uses the technology that students will need as employees. Of course, there is still much to do, and much to know, about how universities are innovating.

But, as important as teaching is, the digital university will need to do more to lead in the new knowledge economy.

Whether we align with the competitive scenario, or whether we side with the idea that the value of a university is in fostering the common good, universities cannot achieve either, without using, developing, and embedding the digital transformation across all their functions.

Currently, universities are called upon to deliver on at least four different but connected fronts: teaching and learning; research and development; fostering economic growth; and, having a social impact. Traditionally, these were regarded as distinct endeavours. The challenge is how to build a university that is both connected with the world outside while also able to create an interconnected, efficient and responsible structural and systemic internal response.

Advice is not lacking. PwC (2018), for example, suggests to align the digital transformation with the university's vision and strategy, to invest in those who are willing and capable to move the transformation forward, and to challenge the view that digital transformation is the sole responsibility of IT departments. This is a development from Christensen and Eyring's (2011) view of the 'Innovative University' that makes use of technology as a disruptive innovation changing the way in which learning is designed, delivered and assessed. While online learning is still a viable area for future development, the real disruptive power of technology can be far wider still.

The Digital University will make use of Artificial Intelligence, Machine Learning, and many of the new technologies, to harness the power of Big Data. It will do so to promote and support personalised offers to students, stakeholders, business partners and staff, and also to conduct research on a global scale, and thus develop new technologies to support economic growth and social impact by co-creating value practices. It will make use of Distributed Ledger technologies, such as Blockchain, to create strong and efficient accountability systems, which would be able to track the impact of learning and teaching, research and

knowledge mobilisation in real time through a redefined knowledge procurement cycle (Devecchi et al, 2017).

Such distributed technologies will not only reshape traditional procurement and finance, but also admission strategies and student services. They are already impacting on copyright and intellectual property, and will enable researchers to track, value and measure the impact of their contribution to knowledge processes. With more words at one's disposal, one can imagine ever more detailed and sophisticated ways in which the digital future can and will impact individual universities and the Higher Education sector.

This is not science fiction or aspirational and visionary thinking. This is the future already here and we need to be prepared.

Preparation means to work on different functions within the system, and it should involve all internal stakeholders in reshaping the structural affordances, and remove barriers. Embedding deep change will therefore cut across traditional hierarchical boundaries. Faced with such disruption, new and more agile distributed leadership/management strategies will be required. For example, the Human Resources departments will need to rethink their role from being focused on performance management, to one that facilitates growth and supports innovators through redesigned career pathways. Faculties will need to redefine their missions and transcend disciplinary boundaries, to enable multi-

disciplinary and multi-functional collaborations within and without the institution. Individual academics, professional services staff, senior leadership, and students will need to think differently about their contribution and responsibilities towards training and education.

Preparation however, is not just about technical and structural changes or creating new physical spaces. The prepared Digital University will also need to make ethically informed decisions. This moral sensibility goes beyond the GDPR regulations or consumer's laws, as important as they may be. It would mean to straddle the fine line between doing the right thing in the name of value for money, and doing what is right in the name of what is of value to us all.

We are just at the start of a challenging paradigmatic change. Universities might feel they are being cornered, attacked and held at ransom. They may also feel that they have seemingly lost their sense of mission and value. Yet, technological developments can also offer valuable opportunities to imagine the Digital University as a future focused one, not at the periphery of change, but as its driving force.

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City Coins, Tokens of City Life

By **Alfonso Govela**

His passions are cities, architecture and the new world of digital citizenship. Architect, Urban Planner and Computer Scientist (MIT). He is Co-founder of DigitalCivix, a NGO partner of UN-Habitat, to advance civic literacy for children and youngsters. As Urban Innovation Ambassador for Metropolis, world association of the major metropolises, he works new applications of Digital Ledger Technology for cities. And together with CCEG, Centre for Citizenship, Enterprise and Governance, develops City Coins, alternative currencies of place-based urban values..

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City coins are data-backed, place-based Cryptocurrencies of value. They are alternative currencies that bond communities and territories. They additionally are data currencies that increase our knowledge of the inner workings of cities, and are instruments to create new markets for real and digital urban assets. They present an opportunity to engage unused resources in local circular economies, and a unique chance to develop a unit of measure for city life.

At the turn of the XX Century, views about money were summarized in a couplet: "Money's a matter of functions four: a medium, a measure, a standard, a store". These functions are namely a medium of exchange, a measure of value, a standard for deferred payment, and a store of value. Over time, only three of those four functions remained in what today is the most accepted definition of money: a medium, a measure, a store.

Trust through Decentralized Consensus, and also through Immutable Registry Rough Distributed Ledgers, brought Cryptocurrencies to life as a safe medium of exchange, and

a potential store of value for digital assets. Certainly, there are difficulties still ahead for their full acceptance, on a par with Fiat money. National currencies are woven hard into the fabric of our societies, as we use them to set prices, pay salaries and taxes, calculate profits or losses, and measure assets and liabilities. But there is no doubt, that with the wild speculation over Bitcoin being a recent example, that our uncertain world is willing to rush to any potential alternative that offers to save and to keep value for future use.

Cryptocurrencies up to now, have been a medium of exchange and a store of value. The third function of money: a unit of account, or a measure of value, still remains elusive. Ironic because a convenient way to induce investment is through a demonstration of competence. The ideal historical tool to monitor competence is accounting. In fact, accounting invented a way to measure, process and communicate financial information with a register of transactions called the Ledger.

But ink and paper do not suffice for the act of registry. Technology is just a medium. Systems of measurement imply

understanding a field to quantify, base units to represent quantities or magnitudes, precision instruments to observe and record, agreements on standards, and a theoretical framework for those dimensions to achieve meaning and become purposeful actions.

Trade and commerce began 150 millennia ago. Accounting began only 500 years ago, but with an undeniable transformative impact for an old occupation.

Cities are more recent, only 10 millennia old, and urban studies began in the XIX Century when the Industrial Revolution brought massive immigration of workers to live in new expansions of existing cities. In the XXI Century, this trend becomes global at an unprecedented scale and rate of growth. Already half of the world population lives in cities, and by 2050, 2.5 billion new inhabitants would increase this proportion to two thirds, transforming Earth, in effect, into an urban planet.

However, City Science, as a systematic enterprise to organize knowledge, explain, predict and test our built environments, is just beginning. The Information Revolution brings vast flows of data from e-commerce, sensors, and the networks of things -IoT, Internet of Things- or even our own human bodies -BAN (Body Area Networks). New advances in Artificial Intelligence are making possible innovative algorithms for pattern recognition and explanatory processes.

Nonetheless, several problems hinder City Science. Data harvest and aggregation is often conducted with little consent from the generators themselves. Centralized processes constrain data to particular needs, and store data in silos; hard to open, and difficult to share in meaningful ways. Observed patterns of statistical correlation need to go beyond description, into explanations of possible causes and effects. Only then can Data be transformed into Information, and eventually, Knowledge.

A system of measurement for cities, needs to understand the urban field in a new way, with a clear base unit to quantify city life, accessible instruments to use, agreements on standards across diverse city systems, and a theoretical framework. A theoretical framework that blends what Manuel Castells[1] calls: ''The space of flows in the digital world with the space of places in the territory'', or what Michael Batty[2] describes as: ''switching our traditional focus from locations to interactions, invoking ideas from networks and flows, to understand city functions''.

Boiled down to their essence, cities are but interactions, built in a place and transformed through history. Human

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Canaletto,1740. Venice: The Basin of San Marco on Ascension Day. National Gallery, London, UK
"Cities are but Interactions"

behavior is the pulse of cities, and social action its beating heart. Among different social interactions, transactions are important because they transfer value from one person to another. Through transactions of value we can understand citizen behavior, we can collect and connect data, and understand how cities work.

In this context, money -cryptocurrencies in general, and City Coins[3] in particular- can recover the power they always had as a complex social institution, that in itself "binds networks, supports social cohesion, transmits information and allows for variation and mutation of socio-economic systems"[4] .

City Coins are a unique opportunity to integrate all functions of money as medium of exchange, store of value, and unit of measurement, or unit of account, for city life.

As an alternative currency[5], City Coins can become a medium of exchange to address specific issues relevant to local and regional communities, economic sectors, business interests,

Large Image: Piet Mondrian, "Broadway Boogie-Woogie", 1942-1943, Painting currently at MOMA, New YorkSmall Image: Tokens from Tepe Gawra, present day Iraq, ca. 4000 BC, Referenced by Denisse Schmandt-Besserat,, University of Pennsylvania Museum, Philadelphia
"City Coins, Tokens of City Life"

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Brueghel the Elder. Children´s Games, Kunsthistorisches Museum, Vienna, Austria
"Cities are transactions of value"

as well as particular social, environmental or political goals. They may complement legal tender, and some can be valued by and exchanged to national currencies as well.

As a digital asset linked to real assets of land and public space, City Coins can partake in value- capture-strategies for public finance, to recover added value created by public infrastructure investment. These range from TIF, Tax Increment Financing, to development rights, to real-estate digital securities, and eventually a vehicle to planning as an arbiter of city values.

Digital technology supports new monetary instruments, but most importantly, registers information about objects being transacted, just as old clay tokens[6] did in Mesopotamia before anonymous currency. The relevance of data therefore lies in its kinetic potential for insights or knowledge. Its source of value lies in the exchange of data and analytics.

As a unit of account, City Coins link to a digital asset called the City Use Token. These tokens recognize that cities are created and enjoyed by citizens. Citizens consume and produce cities. Their actions use up resources, bring forth results, and cause impacts on their territory. Behind every action there is a transaction between citizens and city systems. For each transaction there is a register of actors involved, values

exchanged, location and time. The data of this transaction can be a tangible asset to trade. If existing, these individual registers are segregated in administrative silos. A City Use Token provides a convertible unit of reference to liberate the kinetic value of data, detonate its network effect, and make its trading possible.

The City Use Token registers citizen transactions geo-located within its limits, in an anonymous and standardized manner. It is the unit of account that registers what, where, when, and how much value is exchanged in citizen interactions. It is a uniform record of transactions shared as a receipt among the parties involved. The City Use Token belongs to both the providers and consumers of goods and services, and crowd-sources the collection and collating of data. It can be traded in an open market. It relates tangible and intangible values, payment and sentiment. The City Use Token adds meaning to city assets and liability, and to profits and loses of urban life.

City Use Tokens help cities make their data "liquid"[7], that is open, widely available, and in shareable formats. By doing this, City Use Tokens increase the potential to turn data flows into data currencies, and help data break out of administrative silos, by engaging citizens, the actors that create information, and making them potentially richer.

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Can you spare a few minutes of your time to support employers to help vulnerable young workers to be successful?

Getting the best out of vulnerable young people in the workplace.

We need your help in evaluating a new European resource and any comments you have will be gratefully received.

The new resource is a free, online Handbook designed to support employers and training providers in helping vulnerable young people to sustain apprenticeships, vocational education and training. It is aimed at filling a gap in current awareness amongst organizations of the issues facing young people and how to address these issues.

As employers and training providers, your views on the Handbook, its content and structure will help us to improve and develop the resource to ensure that it is an effective tool.

If you are willing to help, please read through the Handbook

https://ppc.dieberater.com/course/view.php?id=2

and then give us your views via a brief online questionnaire

https://form.jotform.com/73192004984963

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How one entrepreneur is delivering UN Sustainable Development Goals through profitable enterprise – but how to measure this?

By **David Lane,** CIO of Biomass Ventures

David Lane is responsible for designing and building Biomass Ventures' operating platform. As part of this, he is looking at how best to measure and quantify Biomass Ventures' delivery against Sustainable Development Goals (SDGs) – and track this to the consumer. David was an early seed investor in Biomass Ventures which was founded by Lucky Dissanayake.

Lucky Dissanayake – a visionary entrepreneur from Sri Lanka

In 2006, Lucky Dissanayake's media company in London– Dakini - published 'Global Warning - the Last Chance for Change'. Written by Paul Brown, the foremost environmental correspondent at the Guardian, this book provided a stark but fact-based warning on climate change, and the consequences for humanity, biodiversity and the planet. As the Publisher, Lucky came to understand first-hand from climate scientists and experts around the world, who comprised the editorial Advisory Board, the very prescient and impending dangers of climate change, and the desperate need to derive energy from renewable sources. Lucky resolved to do something about this in her own capacity.

Between 2009 – 2011, she spent two years, at her own expense, understanding renewable energy options for the country of her birth - Sri Lanka. Then in 2012, she raised investment and founded Biomass Ventures, a holding company in Singapore, and then Biomass Supplies in Sri Lanka in 2013. Over the next 5 years, Lucky tested and built out the Biomass Ventures' model into something that: (1) is commercially sound, (2) empowers and enriches the lower income quartile, (3) can provide renewable energy at scale, and (4) mitigates climate change by creating a carbon sink - from regenerated soil and the trunks and roots of newly planted Gliricidia trees. Institutional investors came on-board in 2017.

Lucky is showcasing to the world that enterprise profit, the widespread enrichment of the bottom quartile of society, and that sustainable energy can be delivered into a single integrated business model. Lucky is a visionary, pioneering social entrepreneur. With its soon-to-be released IT-Platform, Biomass Ventures will scale across Sri Lanka and then take this model toother countries. This business will make a very substantial contribution to nearly every UN Sustainable Development Goal (SDG).

As a woman, and as a Sri Lankan with a very international mindset, Lucky provides an all too rare example and role model to women - particularly to women in developing countries. Lucky has combined a cultural sensitivity regarding smallholders, with innovative business-model-thinking and the tenacity and courage to overcome a plethora of individuals and institutions

PLANT USES: 100% Co-Production- the more biomass, the more food

Living hedge

Shade tree-vegetables, tea, etc.

Co-production raises coconut yields 60%

Animal fooder

Fertilizer/pesticide produced from leaf

Nitrogen fixing- rehabilation of exhausted soil

Natural/safe barrier to elephants (who dislike smell)

Support tree for vanilla and pepper

that did not believe in her business ideas, and all this at a considerable personal cost.Nevertheless, Lucky choses to take this business forward due to the its ability to benefit so many of the poorest people and the planet as a whole.

Biomass Ventures – a profit driven enterprise with extensive 'positive' externalities

Biomass Ventures is a vertically integrated renewable energy company that develops:

(1) biomass energy resources to supply wood chips and pellets (an alternative to coal) and

(2) uses these resources for its own means of power generation. This is an agricultural-energy program that combines food and fuel, sourced from small farmers and plantation owners, in a very innovative partnership. This company has the potential to transform agricultural communities by improving incomes, health and education.

Sri Lanka was chosen as the proof-of-concept, due to the country's abundant

biomass resources – plus the majority of registered farmers are women. In the process, Biomass Ventures aims to reduce a substantial proportion of the US$ 10 billion that Sri Lanka spends annually on importing fossil fuels for energy generation and chemicals for fertilizer.

The Gliricidia tree has a range of uses. It is used by farmers as a hedge, a shade tree and as a means of support (e.g. for vanilla and pepper). Its leaves can be used as fodder, organic compost, and organic pesticide. Rows of Gliricidia are an effective barrier to elephants who dislike the smell. Gliricidia's deep roots pull up water and nutrients, fixing nitrogen in the soil and raising crop yields.

With education via training sessions, farmers understand the many benefits of growing more Gliricidia-one benefit being a new income from the sale of biomass fuel, and another benefit being the costs saved from reduced spend on chemical fertilizer and pesticide.

All parts of the Gliricidia tree create value for the farmer and the planet. Biomass Ventures has held over 700

training sessions to educate farmers on the full benefits of Gliricidia:

1.   The leaves of the tree mean the farmer can avoid buying chemical fertilizer and pesticide – and/or he can feed cows and raise his milk yield.

The switch from chemical to organic fertilizer and pesticide, regenerates tired soil, thereby improving fertility, reducing erosion and sequestering carbon dioxide and water. Reduced use of chemicals reduces the contamination of ground water, which causes acute kidney disease. Switching from chemicals to organic cultivation can also result in higher prices for organic produce.

2.   The small branches of the tree are a source of firewood and thereby avoid the need to gather wood from the forest, thus saving time. This also avoids dangerous human/elephant encounters.

3. The bigger branches are a source of income when coppiced and sold to Biomass Ventures.

4. Trunks provide fencing posts and support trees, e.g. for vanilla or pepper.

5. The roots pull up nutrients - enriching soils and also rehabilitating tired soils.

THE PLANT- *Gliricidia Sepem*: Value from every part

6. Trunks and roots earn carbon credits from sequestered carbon. These carbon credits are paid into the Biomass Foundation, which uses these to provide English education to farmer families, as well as also being a means of crop insurance.

The infrastructure to train and register farmers, and to harvest biomass fuel, provides broader opportunities. These opportunities can be used to support a more efficient supply-chain for the farmer's cash crops, as the farmer makes better growth decisions and receives forward commitments for cash crops at higher prices. The elimination of non-organic fertilizer and pesticide saves money, but it also opens the door to higher food produce prices from organic cultivation – along with health benefits from home consumption. So, Biomass Ventures' IT platform can support increased revenue for farmers from higher (and more reliable) cash crop demands and prices.

To this end, Biomass Ventures' IT platform is designed to support both the needs of biomass fuel, and also be an Out-Grower-Model for food produce/cash crops. Biomass Supplies is ve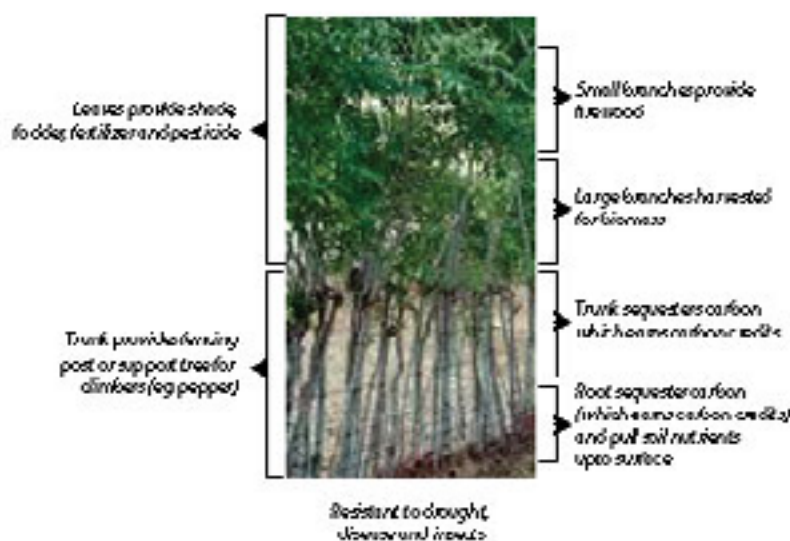rtically integrated around biomass fuel production, processing and transportation. For cash crops, Biomass Supplies is building up partnerships with local produce-processing and transportation companies – with a focus on encouraging exports of higher-value and finished food, health and beauty products.

The benefits are diverse, and need to be measured and need to be traced-back to the consumer

The value of Biomass Ventures to shareholders is reflected in its cash-flow and the investment outflows, compared to net revenue inflows. However, to other stakeholders such as the farmer and the consumer, the 'value' has little to do with these cash-flow measures. The farmer gets more reliable and more substantial revenues, better family health, easier access to (and cheaper) credit, and better education. The increasingly ethical 'millennial consumer' gets a high value option on where to directly spend, to maximise social and environmental impact – if trusted information were available to support such decisions at the point of consumption.

Some of these social, environmental and economic benefits are easy to measure, such as the farmer's increased income from the sale of biomass fuel. Other benefits are much harder to measure and quantify – such as the reduction in kidney disease, or reduced stress from the knowledge of having a higher income certainty. Insights

SMALL HOLDER/PLANTATION MANAGEMENT: Higher Yields, Higher Prices

into the relationship between soil regeneration, soil fertility, and carbon sequestration is at an early stage.

This measurement challenge is further complicated by other benefits provided by Biomass Ventures. Training farmers, and the use of reverse logistics, support the supply of more efficient cooking stoves and irrigation equipment. Regular payments for food and fuel, going directly into bank accounts of farmers, supports micro-lending at farmer and village level.

These wider stakeholder benefits are real and are categorized in the UN's Sustainable Development Goals (SDGs).

To measure tangible progress on the UN's SDGs it is important to measure and quantify progress and to relate this to the actions that drive this progress. So, this is a challenge the world needs to meet–and a pressing requirement for Biomass Ventures.

Consumers need reliable, accurate information on the social and environmental impact of different energy, food and health & beauty products. The social and environmental value of how these goods are grown, sourced and transported, needs quantification so that different consumption options can be evaluated by the consumer. 'Brand labels/certifications' that vaguely link to farmer incomes and/or organic production are not sufficient nor trusted, if the links are not explicit and immutable. Consumer labeling of food provides clear information on protein, carbohydrate,

fat, and salt content – we now need similar clear labeling of social, environmental and economic impact. This might be based on quantification of contributions to SDGs.

Having captured the social, environmental and economic impacts at source, i.e. the smallholder farmer, we can add to this the impacts related to processing and transportation – providing the consumer with a complete and traceable record. This creates another set of challenges i.e. to both track produce along the supply chain across different commercial organisations, and their processing and transportation steps – along with the capture of required data to calculate impacts according to agreed standards.

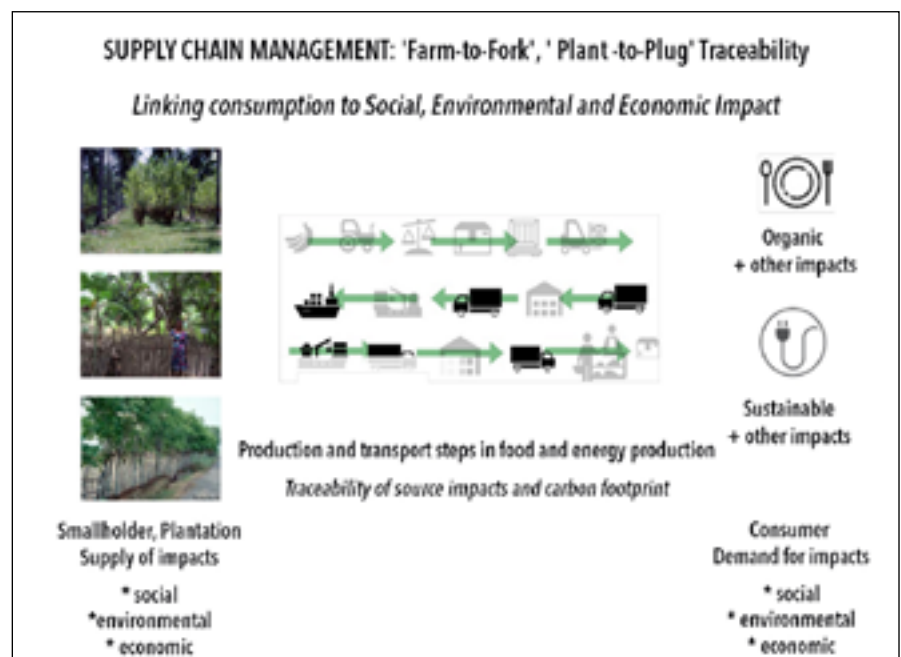**Now it is all about execution – a journey where fellow travellers are welcome**

By bringing transparency and measurement, we have feedback to support growth. If we cannot measure the social and environmental value then it is not real, it is hidden.

Biomass Venture's IT platform provides the means for extensive data-capture at the farm level, and in subsequent fuel/food processing and transport. But, standards are needed here on how source data is captured, how impact is calculated, how these quantified measures are tracked along the supply chain to consumers, and how this is labeled/communicated to the consumer.

New technologies such as Blockchain can support this data capture, and smart contracts can calculate impact. Thus, we can connect farmers to a global supply chain – and reward them, rather than the middlemen- for their efforts. Biomass Ventures, like many existing and new companies, is beginning a journey and looking for fellow travelers.

SUPPLY CHAIN MANAGEMENT: 'Farm-to-Fork', ' Plant -to-Plug' Traceability

Linking consumption to Social, Environmental and Economic Impact

Production and transport steps in food and energy production

Traceability of source impacts and carbon footprint

Smallholder, Plantation
Supply of impacts
* social
*environmental
* economic

Organic
+ other impacts

Sustainable
+ other impacts

Consumer
Demand for impacts
* social
* environmental
* economic

Appendix I: Biomass Ventures' activities can be linked to each of the key Sustainable Development Goals (SDGs):

	End poverty in all its forms everywhere	Biomass Ventures raises the incomes of small-holder farmers by (1) reducing purchases of fertilizer and pesticide, (2) providing new income from the purchase of biomass fuel and (3) raising prices for selected food crops which are now organic. In addition, it creates local jobs across its supply chain operations.
	End hunger, achieve food security & improved nutrition, & promote sustainable agriculture.	Biomass Ventures increases food production, food quality and reduces waste in the supply chain. It does this by training farmers to produce their own supply of fertilizer, regenerate soil and to raise yields – and by putting in place world-class supply-chain operations. By enabling crop insurance and security of both demand and price for both fuel and food produce, Biomass Ventures supports further increase in production.
	Ensure healthy lives & promote well-being for all, at all ages.	Biomass Ventures reduces Sri Lanka's kidney disease epidemic by replacing chemical fertilizers and pesticides with natural products derived from Gliricidia leaves. The imported chemicals are causing chronic kidney disease when they contaminate water supplies. In addition, food products become organic and reduce downstream contamination of food consumers. Improved farmer incomes also result in better nutrition and health care for their families.
	Ensure inclusive & equitable quality education & promote lifelong learning opportunities for all.	Biomass carbon credits earned by small-holders are paid into a Foundation which spends the majority of its resources on teaching English to the children of small-holders. In addition, Biomass Ventures provides free farmer training on Gliricidia and its benefits. It also educates its staff, especially the field officers, on renewable energy and its related benefits, as well as other skills. Finally, higher income to farmers will support higher quality education for their children.
	Achieve gender equality & empower all women & girls.	Biomass Ventures increases the incomes and education of small-holders - the majority of these in northern Sri Lanka are women. Steady and increased income from Biomass supports micro-loans to these mainly women small-holders. Biomass Ventures is an equal opportunity employer and is proactive in encouraging women to take roles in the Company. Finally, Biomass Ventures is founded and led by a woman - providing an example to all women.
	Ensure availability & sustainable management of water & sanitation for all.	Biomass Ventures reduces the use of chemical fertilizer and pesticides which reduces the contamination of water supplies. The Gliricidia leaves are used to produce this organic fertilizer and pesticide – and the leaves can also be used as animal fodder.

	Ensure access to affordable, reliable, sustainable & modern energy for all.	Biomass Ventures enables Sri Lanka to supply its own energy needs from sustainable sources rather than importing fossil fuels, e.g. coal and fuel oil. Biomass replaces unsustainable fuel sources with renewable energy: • Sri Lankan industrial furnaces switch from fuel oil to biomass. • Sri Lankan Power Plants co-fire coal with biomass and ultimately can switch to 100% biomass. • Farmers grow their own fuel supply rather than gathering from local forests. • Overseas (e.g. Japanese) Power Plants co-fire coal with biomass and ultimately can switch to 100% biomass.
	Promote sustained, inclusive & sustainable economic growth. Provide full, productive employment & decent work for all.	Biomass Ventures makes small-holder farming more economic, less stressful and healthier - improving current agricultural working conditions and slowing/halting the drift of people to the cities with all the problems associated with this. Monies spent on importing fossil fuels and fertilizer now flow into the lower quartile of income earners where it is readily spent, and drives growth in the local economy.
	Build resilient infrastructure. Promote inclusive & sustainable industrialization & foster innovation.	Biomass Ventures creates a world-class supply-chain infrastructure across Sri Lanka's agrarian economy. In addition, it supports the development of renewable energy plants, pellet plants, as well improved ports and rail infrastructure. Local IT skills will support its IT infrastructure. Villages will develop local processing of pepper, vanilla and other crops. Food quality will improve. Cooking stove and irrigation technology will improve.
	Reduce inequality within & among countries.	Biomass Ventures raises the health, education and earning of the lower income quartile in Sri Lanka – and the majority of the small holder farmers are women. This reduces economic, health and education inequality between genders and between the top and lower quartiles of earners. By reducing Sri Lanka's fiscal deficit (via lowered imports and raised exports) and increasing lower quartile incomes, economic inequality with other countries is reduced.
	Make cities & human settlements inclusive, safe, resilient & sustainable.	Biomass Ventures provides Sri Lanka with sustainable energy sourced within Sri Lanka – providing energy, security, improved climate, and improved balance of payments. At a community level it slows urban drift and has the potential to transform the lives of agricultural communities for the better – raising levels of income, education and health.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Ensure sustainable consumption & production patterns.	Using Gliricidia leaves instead of chemicals for fertilizer, pesticide and animal fodder, creates an organic supply chain of fruit, vegetable, spice and grain – increasing sustainable food choices for the consumer. An improved supply chain reduces food waste and increases prices to farmers. Finally, the massive supply of renewable energy provides Sri Lanka (and export markets) with a secure supply of sustainable energy. Gliricidia is known for being one of the best plants to fix nitrogen in the soil – improving soil quality.
13 CLIMATE ACTION	Take urgent action to combat climate change & its impacts.	Over a billion new Gliricidia trees will sequester carbon in their trunks and roots. Harvested branches will provide a renewable (within 18 months) supply of biomass which recaptures carbon release by prior consumption. The sheer scale of Biomass Ventures' supply can support a fossil-fuel free Sri Lanka and contribute to the same objective in other countries.
14 LIFE BELOW WATER	Conserve & sustainably use the oceans, sea & marine resource for sustainable development.	The use of chemical fertilizers and pesticides is contaminating inland water sources, which in turn flow into the sea. Fossil fuels and fertilizer are imported into Sri Lanka by sea. By eliminating the need for these chemicals for imports, Biomass Ventures contributes to the health of the oceans.
15 LIFE ON LAND	Protect, restore & promote sustainable use of terrestrial ecosystems. Sustainably manage forests & combat desertification. Halt & reserve land degradation & halt biodiversity loss.	Biomass Ventures counters mono-cultivation, improves soil quality, and supports organic farming. Small branches provide firewood and reduce the need to forage in local forests. By documenting farms, any deforestation becomes apparent and sanctions can be applied. A Gliricidia fence repels elephants without harming them – helping with human-elephant conflict.
16 PEACE AND JUSTICE STRONG INSTITUTIONS	Promote peaceful & inclusive societies for sustainable development. Provide access to justice for all. Build effective, accountable & inclusive institutions at all levels.	Biomass Ventures' activities are conducted mainly in the post-war areas in Sri Lanka (North and East). The company's activities offer possibilities for communities in these areas to find employment and/or improve their farming activities, which will provide them with a sustainable income. The company itself employs staff with various religious and ethnic backgrounds.
17 PARTNERSHIPS FOR THE GOALS	Strengthen the means of implementation & revitalize the global partnership for sustainable development.	Biomass Ventures is a member of the Global Compact, the Business Call To Action and RSB. The company is sharing its business model, best practices and lessons learned within a large number of conferences and international forums. It is collaborating with multiple stakeholders worldwide. By aggregating farmers, it enables/simplifies how demand partners and suppliers reach a wide base of farmers.

Measurement and Transaction of Values - the Orwellian Nightmare?

By **Tigris Ta'eed**

Chief Disruption Officer, Seratio

The God Metric is the pet name for the Social Earnings Ratio, coined by some press after a Vatican speech in 2014. It is the theoretical framework for measuring and transacting sentiment, such as social value, freedom, ambition, hope, peace, spirituality, integrity, self-worth, happiness, and even love itself. It is a means of translating these intangible values into a monetary value.

Accordingly, then, we will all be allowed to sue one another for money, on the grounds of another person making one feel hatred because of racism, classism, sexism or any other aspect of inequality frowned upon by society or participants of a social or business circle. Interestingly, this will be whether one is the attacker OR the victim, e.g. inviting abuse through weak appearance or behaviour, due to either non-conformity to the status quo, such as current trends of fashion or language, or because of not being distinctive enough, such as a fashion or personality presence. Or even out of pure ego, making one feel envy because of greed (e.g. amassing too many material possessions), except for those who psychiatrists assess as mentally ill, or unstable, such as

prisoners, or those with low IQ, whose condition means their opinions will be legally ignored by the judiciary of any state or country.

Seratio is now the world leader in the measurement of intangible values, ranging from micro to macro levels: global, national, regional, organisational. Those values include: the mind, health & well-being (including ethical leadership) as they apply to human resources (HR), the Arts, projects, processes, companies, chaplaincies, cities etc. This includes the Personal Value Metric (PV) which assigns, for example, a dollar value to human beings like a barcode, to measure one's value on Earth to other people, and even on the environment, such as your carbon footprint (e.g. how much you recycle), human rights & also animal rights history (e.g. how much you protect, harm or enslave animals). PV is being developed to measure how emotionally happy you make other human beings (e.g. monitoring one's bio-data) which conveys how much you support your friends and family, such as giving physical affection, or verbal and non-verbal advice; also, leading by example, creating total transparency in all of society's operations, so that all

corruption can always be accurately checked, exposed & prevented forever more.

Inevitably this will develop into an Artificial Intelligence which I named OZ GOD, capable of understanding the public's irony, sarcasm, parody, satire and black humour - Seratio succeeding in a way in which all other metrics have not - a sentient metric, an Artificial Intelligence which measures perfectly the complex nature of human beings. OZ GOD, a God which transforms itself to speak to you in a form that is uniquely appropriate to you, at your personal level, in an Augmented or Virtual Reality world. A metric you can seek advice from, banter with, or even make love to.

Most recent projects are on blockchain and cryptocurrency, including a Black coin and Women's Coin, which assign unique values of race and sex to a currency, and Student Coin, which reflects political activism, freedom from date rape, and the right to party! The Seratio blockchain is a digital ledger in which transactions are recorded publicly and chronologically, creating instant evidence of what's going on in the world, exposing the flow of both

monetary and sentimental values of the populace, i.e. the specific movements of every demographic, potentially even identifying anarchist dissents who, working against the status quo, pose a threat to society. They can be given a warning or arrested. Some hackers (not all) are evil, and seek to create total chaos and destruction. Intelligent, good hackers instead redistribute the wealth; like Robin Hood, they steal from the federal banks from greedy tycoons, to give to charities. Ironically, Bitcoin is not only a cryptocurrency with ethically good value, but is also the preferred black mark money currency of thieves, poachers and drug dealers etc under secret code names, evading the police. Simultaneously Bitcoin strives to ensure that money is only exchanged between people who hold the same, or very similar, eco-socio-political or cultural values. The original intention for cryptocurrencies with values was to disallow people with opposing values to exchange money, keeping it from being spent on what one finds to be evil, corrupt, aesthetically displeasing, or uncool.

The idea behind cryptocurrency with values is best challenged through examples …

- The Terrorist or KKK coin, which will give their demographic a voice, thus exposing their debatable ethically good or bad behaviours, and if unpopular enough, will eventually kill their market.

- The Market decides the exchange rate between digital currencies e.g. the more popular the coin, the more expensive it is. This naturally kills unfavourable value sets from society, as unpopular coin holders lose money because of the exchange rate, and are forced to spend less with it, thereby leaving them with a reduced selection of potential coins to do business with.

- Chaos coin's value sets may be transient on a daily basis. Meanwhile a Clown coin's value sets may be an intentioned parody, containing

whatever combination creates the most laughter.

- Insanity or Loony coin's transient value sets, having at first no reflection in the real world, will yet be potent in Virtual or Augmented Reality technology, where wild fantasies can be made real, e.g. horror.

- Two different coins can only be exchanged if their values align, however, by how much? Who decides, humans or machines?

- What if your values are transient, changing everyday, then what coin should you deal in? Racist today, tomorrow not?

- Radical Orwellian dangers of coins of different kinds, e.g. measuring human bio-data in real-time, such as translating speech or thoughts into text form, allows monitoring of values.

- To purchase a coin, do your values have to be aligned to it? Must your authenticity be checked out, and how, and by whom? KKK may purchase a Black coin, promoting Black values, as a cover up or smoke screen to racist behaviour in real life.

In the next few decades, we are going to see both the exposure of embezzlement, and the eroding of our human rights to freedom, as governments, authorities, companies and corporations discover, through close monitoring of our spending habits, what and where we purchase

goods and services, and for how much. This will inevitably influence media departments to target their advertisements not just to different demographics, but to JUST YOU on a uniquely personal level, through social media on the internet, through mobiles or laptops. This will cut you off from the "diversity" of Earth's Art forms (e.g. fashion, décor, music, film, events etc.) as they type-cast you based on your first initial purchases. They will think wrongly that they know you, and if potentially all purchase data is made available to the public, this will inevitably - because of societal human nature to conform out of fear of being rejected as the "odd one out" - create a mass conformist movement, like a shoal of fish, to just purchase what the status quo allows, killing diversity of expression. Seratio states "when we measure it we can bill it", but when we can measure something, we can also then control it, but who wants to be controlled?

Once something that is seemingly ethereal in nature - like the value sets assigned to any one Bitcoin - is defined by a label which boxes it- like a flower crushed into a pot that is too small for it- there is little room for growth, so alchemically it does not blossom, we then may conclude, that perhaps there is more delight and magic in mystery?

Besides, who really desires their evil ex-husband, cunning, wicked step mother, or psychotic uncle to find out things about your personal life, so that they forever have a hold on you? But if your location is known, through monitoring your daily shopping habits, then if you're in danger, anyone in close proximity to you can come to save you.

I am the Chief Disruption Officer of Seratio, and my role is to create innovation in the company, by questioning every aspect of it, with big picture thinking, as a visionary. I have always worked in opposition to my father's clearly scarily "Orwellian" implementations on Earth, while also celebrating his ethically good intentions.

Centre for Citizenship Enterprise and Governance

CCEG IN CHINA

Olinga Taeed
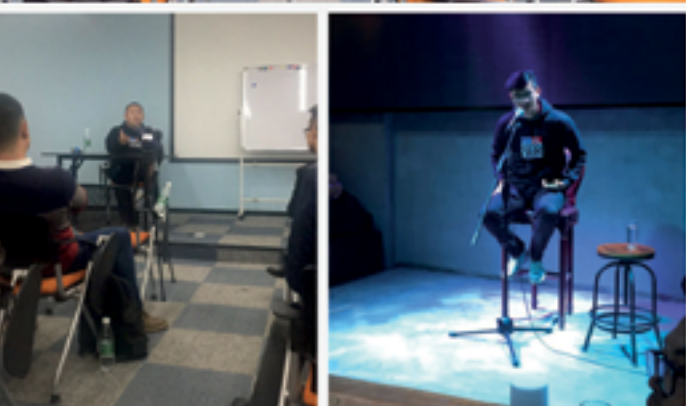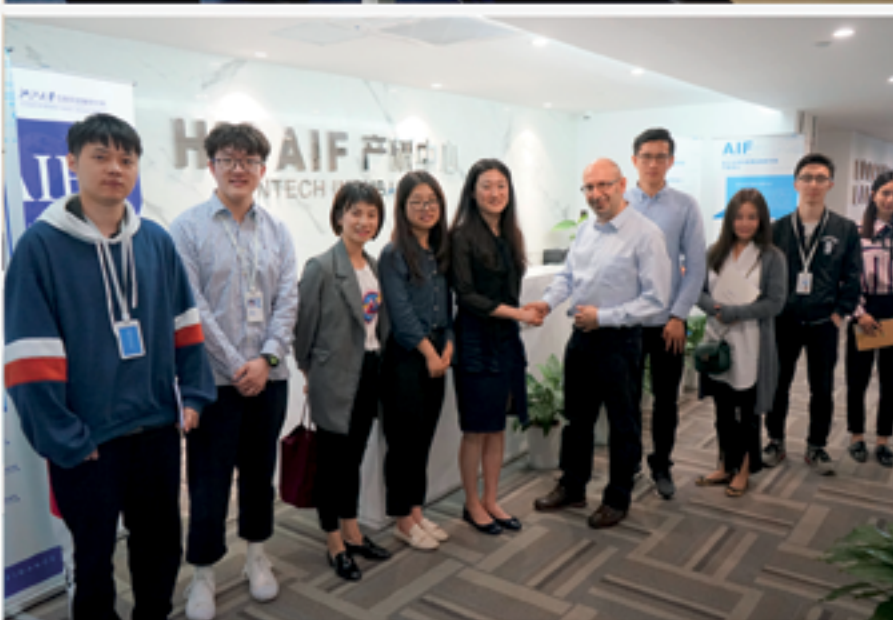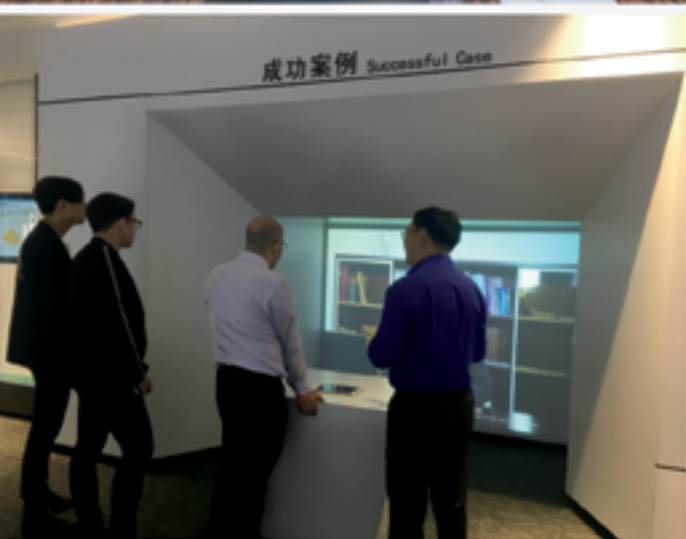
Rothbadi & Co

BLOCKCHAIN CONSULTANCY & ADVISORY

Institutional consultancy and advisory services

PRODUCTS AND SERVICES

Rothbadi & Co. is the first global Blockchain consultancy born out of a think tank and out of academic research. We specialize in large-scale blockchain projects; we are also focused on Blockchain education and research, Blockchain & Crypto investment analytics and advice. We have designed innovative implementation of blockchains, including the integration of financial and non-financial value.

Rothbadi & Co are the go-to organisation to work alongside, whether you are an Institution, government, or private sector company, Rothbadi & Co have the right answer or solution, due to its academic roots, impact measurements and Initial Coin Offeing (ICO) heritage.

Given the changing global regulatory landscape and potential opportunities, Rothbadi & Co focus on exploring ICO regulation, utilising connections and experience from its parent organisation, the not-for-profit Centre for Citizenship Enterprise and Governance foundation (CCEG), Rothbadi make Blockchain and ICO's uncomplicated.

Institutional Blockchain, Tokenisation and ICO advisory:

- Advisory for the creation of Blockchains and ICO's, particularly those aligned to our core values. Rothbadi & Co maintain its competitive advantage by being highly selective and significantly differentiating themselves from other service providers

- Rothbadi & Co help institutions translating their Blockchain and Cryptocurrency goals and strategy into a meaningful, academic whitepaper

- Review of customer offering, play or not play, low-cost light touch offering

- Provide roadmaps of how to enter the space, with process improvement using Blockchain

Post ICO management:

- Interim management
- Treasury
- Token modelling
- Token market fire, hypergrowth management, rescues, crises strategies, risk management
- Governance
- Relationship with leading exchanges

Premium education services:

- Institutional-focused day courses

  - These highly intensive day courses focus on educating Boards of Directors/ Senior management on blockchain technology, blockchain strategy, ICO creation, cryptocurrency investment

  - These courses are competitively priced at a daily rate, and attendees receive a verified certificate of attendance.

- Partnerships

  - Rothbadi & Co partner with many of the blockchain educational programmes being offered around the globe, particularly accredited universities

  - There is an ongoing increase in the supply of blockchain and cryptocurrency education as interest in the sector continues to burgeon. Rothbadi & Co's has the academic heritage to cater for this sector and tailor a course for you

Conferences:

- Exhibit at Blockchain and Cryptocurrency conferences around the globe - Rothbadi & Co. We will tell you which to go to, which to avoid

- Regulators Networking – we are building a network of regulators who we both advise and take advice from
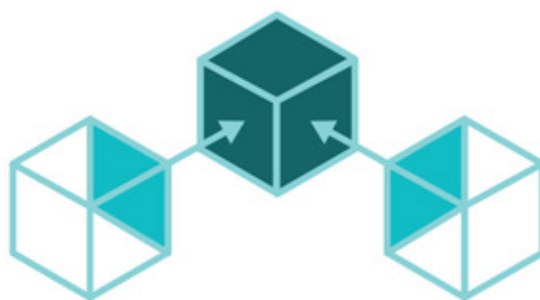
Blockchain process improvement consultancy:

- Government administrations
  - E.g. Tax, Land
- Supply chain management firms
  - E.g. FMCG, Retail
- Civil Society and NGO's
  - E.g. Foreign Aid, ID for unbanked.
- Public infrastructure
  - E.g. Transport, Communication

Investment advisory for asset management / high net-worth individuals:

- Advising investors at various levels of the stack at the protocol, networking and application layer
- Tailored cryptocurrency investment advice for high-net-worth individuals
- Cryptocurrency trading advice

Recruitment & Talent Consultancy:

- Verified blockchain full stack & protocol developers. Leverage the CCEG and Rothbadi & Co brand to build a highly trusted talent network of individuals

Blockchain design and implementation:

- Code checking
- Auditing
- Cybersecurity services and hacking prevention

Strategic newsletters

- State of the market analysis
- Creation of briefing notes

Governance consultancy

- Consultancy service for helping organisations implement a decentralised governance structure

Smart contracts and audit consultancy:

- Legal and coding advice for the creation of smart contacts
- Legal code checking /audit

Sector specific consultancy:

- We have specialised exptertise in Blockchain for Cities, Insurance, Education, Textiles, Energy, Faith, Leadership, Leather, NGO's, Knowledge, etc.

Micro-monetizing / Macro-transactions consultancy:

- Creators of content can sell that content directly to buyers without the intervention of a centralized corporation
- Transformational instruments for the media industry, music industry, IP and knowledge industry

Crypto-anchors and provenance consultancy

- Cryptographic anchors together with blockchain technology will ensure a product's authenticity from the point of origin to the hands of the consumer
- Tracking of product lifecycle both in hard tangible financial and soft intangible non-financial provenance

MEASUREMENT OF NON-FINANCIAL VALUE AND IMPACT

... If we can't measure it, no one can...

Rothbadi & Co's parent, the Centre for Citizenship, Enterprise and Governance, is the world leader in the measurement of non-financial value. Our impact metrics have become the adopted standard supporting government legislation in over a dozen countries. These include the measurement and transaction of value across Organisations, Products, Processes, Projects and People. Since 2011 we have been measuring...

- **Social Value** – across all stakeholders including shareholders, customers, suppliers, community, staff, board, statutory bodies and environment

- **Modern Slavery** – we provide the 'NPS' of modern slavery, giving Red-Amber-Green status fast and efficiently

- **Transparency in Supply Chains** – tracking of products from birth to land-fill

- **Tax Avoidance** – tax evasion is illegal, but avoidance is not and harder to track and define

- **Pay Disparity** - ensuring gender pay parity

- **Hyperlocality** – we can model the influence of distance which can diminish or grow value

- **Network Cohesion** – How aligned values are within a network is index linked to impact

- **Hard to Reach groups** – categorised by small sample sizes but often highly influential

- **Tokenised transaction of value** – once we capture value digitally, we can transact it through blockchain

- **Cryptocurrencies with values** – aimed at vibrant, cohesive, transactable, aligned communities

- **Niche sectors** – art, faith, religion, education, knowledge, etc ... we believe we can measure everything including love, hope, generosity, kindness – the most difficult intangibles.

Solution Platforms

Our metrics are not simple. They stem from highly refined systems that have made their path from academic research, tested through published work, to implementation in software. We provide SaaS (software-as-a-service), PaaS (Platform-as-a-Service) and now BaaS (Blockchain-as-a-Service).

We offer 3 levels of solutions:

- Deep dive academic longitudinal studies and pilot projects

- Fast, cost effective systems providing indicative metrics < 10 seconds

- Fully comprehensive and robust management portals that can be relied upon

Our USP

Our unique offering is that these are not different metrics for different applications. They are all based on our Social Earnings Ratio®, in development since 2011, which is the corollary to the Price Earnings Ratio.

Centre for Citizenship Enterprise and Governance

The Centre for Citizenship, Enterprise and Governance (CCEG) www.cceg.org.uk which is the world's leading Think Tank on the Movement of Value and established in 2013 based on a theoretical framework in 2011. We have 5 divisions within a not-for-profit structure that carries 120,000 members. We are independent of any particular organisation.

Metrics Division

This is housed in www.seratio.com which provides open source non-financial metrics. We have over 100 commissions (www.socialearningsratio.com) and provide SaaS platforms to support government legislative frameworks for the UK (eg. Social Value Act 2012 www.publicvalue.online), Modern Slavery Act 2015 (www.modernslavery.uk), 5 EU commissions (www.socialvalue.eu), 2% law in India/Indonesia/Mauritius, etc. We also have an active research interest in Personal Value (www.serat.io). We have our own journal Social Value & Intangibles Review www.issuu.com/seratio.

Blockchain Division

We have one of the largest blockchain teams in the world operating in an academic environment located at our Blockchain Labs in the UK, China and India. With over 40 blockchain and over 20 tokenisation projects, our achievements include the UK's first official ICO operating with the guidance of the FCA (www.seratio-coins.world). Advisors include Eversheds Sutherlands solicitors – a global firm, and Chandler Guo.

Cyberfutures Division

Focusing on Blockchain and related technologies of DLT, IoT, AI, VR, AR, 3DP, WYOD, BYOD, etc we have setup a consortium of c. 20+ universities, and partnership with Microsoft, Tata, British Telecom and Informa Plc (FTSE 100 company in education) at www.cyberfutures.net. This has 2 funding commitments through www.edcast.com (backed by Softbank – largest software VC in the world) and Kerzner Family Office in South Africa. Edcast is a global provider of MOOC's and our online education partner.

Efficiency Exchange Division

As from 2nd October 2017 we are the owners of www.efficiencyexchange.ac.uk which was given to us by 4 organisations that are associated with the management of universities in the UK – HEFCE, JISC, UniversitiesUK and LFHE. In return we are educating the sector on value in the sector. We also have ownership of exchange.ac.uk which we intend to be the basis of a new Digital University.

Blockchain Institutional Consultancy and Advisory

We have secured UK£ 1m funding to start a high end institutional consultancy and advisory aimed at banks, corporates, investment houses including impact/faith investing, incubators, family offices, governments, ngo's, UHNWI, etc (www.rothbadi.com). It is established in Zurich but also using the CCEG presence in our international offices.

Frontiers in Blockchain

Frontiers in Blockchain is the first peer-reviewed journal dedicated to blockchain from a mainstream scientific publisher. This is a collaboration between CCEG and Frontiers Media – a leading openaccess international scholarly academic research publisher. www.frontiersin.org/blockchain

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#goodistrending

www.cceg.org.uk // www.seratio.com // www.seratio-coins.world
www.efficiencyexchange.ac.uk // www.cyberfutures.net // www.rothbadi.com

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**Institutional Blockchain
Consultancy
and Advisory**

*Measurement and
Transaction of Value*