CHAIN REACTION

Blockchain technology is most often associated with digital currency Bitcoin, but Jessi Baker is using it in her company, Provenance, to track where products come from.

Rachel Botsman is a global authority on the power of collaboration and trust.

Fish. It's not the first thing that typically comes to mind when you think of technology. But Jessi Baker is figuring out how the blockchain, the technology underpinning Bitcoin, could be used to track the supply chain of fish, from fisherman to plate.

Thirty-two-year-old Baker is what you might call a hybrid thinker. She has an impressive background in design and engineering. She thinks in big abstract ideas but also knows how to make them functional and real. Baker first got obsessed with supply chains and their transparency, or lack thereof, when she was writing a dissertation on the clothing retailer American Apparel. At the time, she was doing a master of engineering at the University of Cambridge in England. She wanted to know not just how products were made but where they came from. Take a plain white T-shirt. Baker was struck by how much effort was required to make a relatively simple product. But when that T-shirt finally got into the hands of consumers, they had no idea what went into making it.

In 2013, she started hearing people talk about the peer-to-peer currency called Bitcoin. Intrigued, she dug into the technology behind it and stumbled into the world of blockchain. A light bulb went on. If the blockchain can transfer and track Bitcoins in a transparent way, why couldn't it become a public ledger for product attributes such as the type of ingredients or the history of its production?

This brings us back to why she wants to be the first to put fish on the blockchain. In 2014, she launched Provenance, a company that uses blockchain technology to track the journey of materials as they move along the supply chain.

Recently, Provenance started a large pilot project with the tuna industry to track where the fish comes from. The potential is huge in terms of enabling businesses to comply with traceability legislation, giving the consumer concrete information about ethical sources, and even preventing the loss of billions of dollars in counterfeit products.

Put simply, the technology could empower consumers to find out precisely if products are what they claim to be. It's early days, but Provenance is using innovative mechanisms to become a new kind of broker in digital trust.

You describe yourself as a design technologist. How did you come up with that label and what does it mean?

Design for me is about problem solving. It's about trying to understand needs and then turning that into something. It's a process I do a lot and like doing. The technology is the medium: it's what I'm using to solve the problem.

Where does your passion for making things traceable and transparent come from?

Growing up, my family always bought local stuff. This influenced me to try to understand where the food I buy comes from. Later on, at university, I specialised in manufacturing engineering, which led me to visit all kinds of supply chains, from car parts to makeup to clothing.

Looking deeply into those supply chains made me realise the enormity of the gap between advertising and marketing and the reality of operations behind businesses. It frustrated me that we could not find out about the crazy networks of production I knew were behind all of these products. The supply chain is so secret. And it never sat right with me.

How did you join the dots between making products transparent and traceable, and the potential of blockchain technology?

A lot of my design work was about transparency, the future of the internet and how we might know more about the world (not just products). I wanted to explore this idea further, so I quit working in branding to do a PhD. I wanted to look at how the consumer, brand and supply chain could come together in an authentic way.

I started doing a lot of research into new technologies. In 2014, I met the Ethereum team who had a unique vision for the potential of blockchain; they saw that it could be used beyond financial applications. It could be a trading certificate and a broker for transactions of different things. At that point, I thought, "OK, yeah, this is going to be huge".

Can you give an example of how Provenance uses blockchain to ensure products come from ethical or sustainable sources?

Up until now, the methods of knowing that something is sustainable or organic has been through certification. For example, a bag of coffee beans is certified to have product attributes that are labelled as fair trade or organic. But it's quite tricky to track certification data because it's not digital.

PHOTOGRAPHY Ioulex

Recently, we did a six-month pilot of tracking two types of tuna fish through Indonesia. The fish were caught with pole and line techniques, which drastically increase the socio-environmental sustainability of the product. When the fishermen make their catch, the fish inherits digital attributes such as its freshness, the day it was caught and whether it was handled in a socially and environmentally compliant manner. The information is verified by on-the-ground local NGOs.

The sustainable attributes are stored in a token that is carried along the blockchain. This allows the fisherman to trade the digital version of the fish.

Has anything surprised you about the conversations you've had with retailers when you tell them about Provenance?

What surprised me is how little retailers know about where their products come from. They definitely have a mission to find out more, but there is a certain comfort in turning a blind eye to some things.

So what specific questions do brands ask you about Provenance?

They have a lot of questions. I mean it's a new idea for brands to view transparency of their supply chains as a competitive advantage. I think the bigger companies are sceptical and a little bit of afraid of what they might discover. They are used to the idea of data being behind a Fort Knox system administrator. So deciding to commit all data to public infrastructure is very scary. But we are finding some are very progressive and committed to a new era of trust and transparency such as the Co-op, which is the fifth largest supermarket in the UK.

What are the challenges in getting companies to understand the potential of blockchain?

It's taking a lot of time trying to make people see the potential for the underlying technology of the blockchain beyond the bad reputation it's had for a while. For example, maybe the only thing people know about blockchain is the Silk Road debacle, which is really not helpful for us. I think we're at the foothills of the technology and there's definitely a few years to go before this is going to be a mainstream thing that could really be applied at a large scale.

How does having a background in science and design help you to start and build things?

I like having a mix of skills and having a foot in two camps. When you're a generalist, you'll never be awesome in any one thing but you will get the show on the road. You can start building things. When I started Provenance, one minute I was designing the brand, writing copy, building the website, and then moved on to thinking about the business model. You have to crack on and give everything a go if you want to start something.

Is this hybrid way thinking something that came naturally or was it something you learnt?

When I was at school, I enjoyed maths and designing stuff, and these subjects didn't go together. So I tried to conform and join in one camp or another, but I never really fit in either very well. I think when you're a teenager, you don't really have the confidence to say, "No, I want to do both." The good news is that in UK, the school and the university system has changed a lot in the past few years; there are far more courses that mix creativity and design with science and mathematics.

At what stage of developing ideas do you come into your own? On the flipside, where do you recognise you are not helpful to the business and step aside?

Coming from engineering and having built a lot of stuff before, I think I'm better at creating products. I haven't been good at the sales pitch: proactively going out there and looking at the problems businesses have now and saying how Provenance solves it. I'm still learning that part.

Research by Mia de Villa

HACK THE MINDSET: JESSI'S RULES

1

If things don't fit, they're not necessarily wrong. Don't be afraid to smash two random things together because great ideas can come from weird combinations of technologies or use cases.

2

Learn to articulate your ideas well. It does not matter how great your idea is if you can't communicate it clearly.

3

Have blind determination. It can be tough but if you really believe the problem is worth fixing, don't give up.