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Adding value with blockchain: an explorative study in the charity retail sector

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Abstract: The paper explores the potential for deploying blockchain within existing organisations to support value creation and capture. Drawing from the study of a charity retail organisation, the paper finds that within incumbent business models, blockchain's potential for value creation and capture arises from enabling more efficient transactions and from creating the mechanisms to support new forms of transactions embodying new value propositions. The analysis also highlights the role that the blockchain technology has in delivering such value: strengthening trust, demonstrating accountability, and supporting decentralisation of selected central management activities.

Keywords: blockchain; business model; value of technology.

1 Introduction

Over the past years, blockchain, a new technology emerging in the last decade to support Bitcoin, a digital cryptocurrency, has developed a reputation for representing the next Internet, a transformative technology enabling organisations to fundamentally change how they create and capture value (Iansiti and Lakhani, 2017). Blockchain is a distributed ledger of economic transactions which is both transparent and, in principle, incorruptible

(Tapscott and Tapscott, 2016). The technology rapidly expanded beyond its origins in cryptocurrency to a range of applications from smart contracts to identity management, and from governance to supply chain auditing (Elsden et al., 2018). Fespite growing interest in applications beyond cryptocurencies, most blockchain research focuses on Bitcoin, with less than 20% examining other applications (Yli-Huumo et al., 2016). Research examining blockchain value creation potential is still in its early stages, focusing on mapping emerging applications (Elsden et al., 2018), considering almost exclusively new firms (Kane, 2017) and envisioning disruptive applications. Indeed, many blockchain applications in the real world are deliberately disruptive to existing business and organisational models. Nevertheless, many established firms are experimenting with the technology to understand how it can be harnessed and deployed to add value within the confines of existing business models (see Pilkington, 2016).

Very little research however examines existing organisations to understand how they deploy blockchain as part of their operations to add value. The objective of this paper is to address this gap by *exploring the potential of deploying blockchain technology to add value within organisations*.

2 Theoretical framework

To examine how blockchain may add value in organisations, we draw from the business model concept. We adopt Zott and Amit (2007)'s definition that emphasises the role of transactions in explaining how organisations create and capture value. The business model depicts "*the content, structure and governance of transactions*" (Amit and Zott, 2001, p. 511) that allow organisations to create and capture value for all its exchange partners (Zott and Amitt, 2007). Business models include different components, which can be grouped around four broad value-related categories: value proposition, value networks, value delivery system and value capture (Ojala, 2016).

The product/service offering concerns the **value proposition (VP)** that the product/service creates for customers and partners (Osterwalder and Pigneur, 2010). Value proposition is mostly considered in economic terms, i.e. the price paid for goods. **Value networks** depict the relationships of the organisation and key stakeholders: partners and customers (Al-Debei and Avison, 2010). **Value delivery system** explains how value is exchanged with stakeholders, and includes the channels through which the organisation reaches customers, and key activities and resources which explain how the organisation delivers the value proposition to customers (Osterwalder and Pigneur, 2010). **Value capture** explains how an organisation makes money and concerns the realisation of exchange value (Bowman and Ambrosini, 2000). Some of this value is passed onto stakeholders (as cost). It is therefore important to consider how stakeholders are involved, as the ability of organisations to capture value from customers is relative to the bargaining power of stakeholders (Bowman and Ambrosini, 2000).

Understanding how blockchain allows organisation to add value involves mapping the consequences that blockchain deployment has on these business model components.

3 Research design

In view of its exploratory nature, the research follows a qualitative case study research design. The case is Oxfam, a large international charity organisation headquartered in the UK, who set out to consider the potential for adopting blockchain solutions to address the requirements for circular economy.

Data was collected during 2017 through (1) semi structured interviews with area managers, store managers and volunteers, and (2) ethnographic data through shadowing in store to observe valuation practices, and organising two workshops at Oxfam headquarters with senior managers and representatives of other units (apart from retail) from Oxfam. The research covered a diversity of stores (city centre, market town and boutique). The interviews and observations allowed for the collection of in depth data which fulfilled the exploratory nature of the research aim, also allowing for a rich understanding of the context in which the technology was supposed to be deployed.

5 Findings

The tentative business model of Oxfam's retail unit is depicted in Figure 1. The analysis revealed multiple value propositions offered to different customer segments, supported by a complex value network including in addition to customers, volunteers, donors, and third parties. The most critical resource is store location (that determines both its capacity for value creation, in terms of the range of donors and their ability to donate high quality items, and its ability for value capture, in terms of the target customer and their willingness to pay) and the manager's local and tacit knowledge of the value of items donated and the local market. The key activity is sorting to add value. The main revenue mechanism is in store selling, which represents a key revenue for Oxfam as represents funds with no conditionality in spending. There are also some limited revenues raised through online channels.

<table>
<tr>
<td rowspan="2">KEY PARTNERS
Donors
Suppliers of stock – big retailers
Other service providers
Music Magpie, Nectar, Cooperative bank (Oxfam credit card) ...

KEY RESOURCES
(stock) donations of quality second-hand goods
(store) store location
(store) store space
(store) store access
(store) windows / window displays
(human capital) volunteers time
(human capital) volunteer skills
(human capital) manager's skills
(HQ) logistics infrastructure & Head office support</td>
<td rowspan="2">KEY ACTIVITIES
Sorting donations into sellable or not sellable
Pricing stock
Storing stock
Re/arranging stock in stores to appeal to customers
Displaying in stores
Uploading stock online
Staffing the store, taking payments and interacting with customers
Culling tired stock
New stock management
Marketing the store
Reporting to Head Office
Tidying the store
Doing window displays
Running seasonal and promotional displays</td>
<td rowspan="2">VALUE PROPOSITION
(product) Rare and unusual merchandise
(product) Low cost essential items
(product) New Oxfam branded merchandise – brand and message
(experience) "Feel good and buy cheap" shopping experience: aiding charity & finding a bargain
(experience) "Feel good" shopping experience: aiding any charity
(experience) Seeking community: engaging with the community (rather than with the shopping)
(mission engagement) Seeking charity (Oxfam in particular) engagement, and contributing to achieving Oxfam's mission
(mission) "Zero waste" – contributing to achieving environmental mission</td>
<td>CUSTOMER RELATIONSHIPS
Transactional – one off
Recurrent – based on reliability
Collaborative – based on trust
Wide and long term – engagement on different fronts</td>
<td rowspan="2">CUSTOMER SEGMENT
Mass market
- Women (predominant – and in search of shopping experience) vs men
- (very) low income (buying essential items) vs middle income (looking for a bargain or in search of shopping experience)
- Middle class fair trade shoppers (for the brand and message)
Volunteers</td>
</tr>
<tr>
<td>CHANNELS
The store
Online – store ad hoc
Online – Oxfam ebay
Third party resellers
Wastesaver</td>
</tr>
<tr>
<td colspan="2">COST STRUCTURE
Store rent
Clothing bins
Utilities; Card charges; Store maintenance; Business rates
Logistics services
Council services
Manager / deputy manager salary
Equipment (new) & Consumables (paper, printer costs, etc)</td>
<td colspan="2">REVENUE STREAMS
Selling assets in store at a fixed price
HRMS / Gift Aid
Oxfam Unwrapped
Auctioning online</td>
</tr>
</table>

Figure 1 Oxfam's retail unit business model

The original approach was to consider blockchain as a process innovation, deployed within one activity: the internal supply chain of products, to address a particular problem: inefficiencies (waste) due to poor cascading practices between stores. Through a series of design workshops, ideation and reflection between the research team and Oxfam staff, and informed by the data collected from the stores, the team envisaged few tentative applications of blockchain. Three of these propositions were related to the original focus on deploying blockchain in stores, and are evaluated in terms of their potential for value creation and capture by considering their effect on the Oxfam stores' business model.

(1) Building an *internal market for goods* by *enabling new forms of transactions between the stores*. Blockchain would be used to create a coin (Oxcoin) to incentivise trusted volunteers to upload items onto the online store network and to request items from other stores, thus stimulating the exchange of items between stores. These exchanges across the store network would, in theory, enable items to move to stores where the potential exchange value is higher, in terms of the willingness of local customers to pay for particular items. The Oxcoins would be accumulated by volunteers and be used to either buy items in shops, or as a community currency. The key role of blockchain here would be to incentivise stores to cascade goods that would sell higher elsewhere. Currently, the only incentives store managers have to do so within the existing cascading programme is driven by a shared sense of values and community between stores in the same region. The role of blockchain here would be to explicitly account for this value exchange by providing the means to account for the stores' contribution to the Oxfam retail network.

(2) Enabling *new forms of value exchanges to take place in shops* by *enabling new forms of transactions between the stores and customers*. The proposition was based on the idea that stores could charge more for items that originate from unsustainable sources (e.g. a non-fair trade cotton t-shirt from a fast fashion chain would have a "sustainability charge" on top of the normal price tag to incentivise customers keen on supporting the zero waste mission to donate more money). These new sustainability exchanges with the customers would enable the stores, in theory, to realise more value from a given item (the "normal" exchange value plus the sustainability charge). The blockchain would be used to record these transactions and automatically direct this proportion of the sustainability charge from the item's realised value to a dedicated sustainability cause supported by Oxfam.

(3) Rethinking the future of giving by *enabling new forms of transactions between the charity and its customers and donors*. Blockchain would be used to create a decentralised (semi) autonomous organisation (DAO) that would manage a proportion of funds to be spent on specified Oxfam aid projects. The DAO would allow individuals to donate money either directly or through the purchase of an item in stores and become a shareholder in the DAO. Donors would then be able to make decisions on allocation of funding to causes, or they could delegate these decisions to Oxfam. Causes would be identified by allowing potential beneficiaries to make an application to the DAO for support. The DAO may support participatory voting mechanisms based on a customers' stake or share in the DAO, or it could rely on smart contracts to enforce particular rules about how funds should be allocated. By offering the opportunity for customers in stores to associate their purchase with a DAO and become donors, this proposition would enable Oxfam to deepen the relationships with their in-store customers (by attracting them to be more directly involved with their donations) and potentially increase the volume of donations (purchase) from individual customers who become more engaged. A

role of blockchain here would be to demonstrate accountability of donations and decentralise decisions of funding allocation to courses to individual customers.

All three applications enable the creation of value, partially by supporting the mission related value proposition. Some applications include trade-offs against other components of value proposition, so that the increase in value for some customers comes at the expense of others. The strongest impact is on value delivery (and networks) as the deployments alters how value is transmitted between the stores and its partners, affecting mostly interactions with volunteers and logistic partners to support the transaction between the stores (first proposition), the interaction with volunteers, retailers – partners and customers (second proposition), and the interaction with customers and donors (third proposition). The increase in value capture is envisaged through improvements in realised exchange value (first proposition), creating a new source of exchange value related to sustainability charges to the normal exchange value of the item (second proposition), and potentially increase in the volume of sales through repeat purchases (this proposition).

6 Discussion & Conclusions

We find that within incumbent business models, blockchain's potential for adding value arises from enabling more efficient transactions and from supporting new forms of transactions embodying new value propositions. This suggests that blockchain may enable both efficiency driven and novelty driven business model (Amit and Zott, 2001), through its ability to enable new forms of interactions between organisations and stakeholders.

Our experience suggests that blockchain offers organisations the opportunity to rethink their portfolio of interactions, and consider new avenues for value creation and capture. We suggest that blockchain deployment might be best envisaged as an assemblage of different distributed ledger technologies that provide different "solutions" to different organisational problems.

As the work was driven by the search of applications for blockchain, a key question to consider is why blockchain? Blockchain is mostly seen as a way of recording transaction and dealing with the lack of trust – its deployments often encourage transactions between partners when trust is absent. In our case, the charity was a trusted intermediary and there was little need to record transactions apart from creating incentives. Oxfam could achieve an internal market through changing accounting procedures, they could add a sustainability charge manually, and local fundraising (e.g. through green tokens in supermarkets) to achieves participatory budgeting. This assumes that Oxfam trusts its staff/volunteers that they trust each other, and that customers trust Oxfam. So why blockchain? Our exploration suggests blockchain may be required to strengthen such trust, to demonstrate accountability and to support partial decentralisation. The challenge is thus not only understanding how blockchain may be useful (how value may be created), but why (why blockchain should be deployed to create that value).

7 Areas for feedback

There are two areas that I seek feedback on, both related to the positioning of the paper:

(1) Thinking through the justification for the research. The paper explores how and why blockchain may be deployed within existing organisations to support their value creation activities. The justification is based on existing research focusing on (1) blockchain deployment to support Bitcoin or another cryptocurrencies and (2) disruptive applications. But is understanding how blockchain may enable value creation within established business important? Why?
(2) Theoretical development. The paper draws from the business model concept to explore how blockchain may create value, but the theoretical grounding of the paper is week, the empirical research being driven by a focus on designing propositions for Oxfam. The work points to how technology can be applied to create value, and pinpoints to thinking about why should blockchain be deployed. What are the potential theoretical lenses that I could use to make sense of these findings?

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