
Understanding Bitcoin Entrepreneurship

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Abstract

We know little about how to theorize entrepreneurship as a practice emerging from new technologies such as Bitcoin. What makes Bitcoin interesting is that it rests upon an emerging technology - Blockchain technology, which is developed dynamically in open-source communities. Creating new entrepreneurial ventures based upon such emerging technologies requires an understanding of certain particular conditions that are specific to these technologies. Our interest in this paper is to start unpacking the nature of these special conditions, since this is the first step to theorize entrepreneurship in CHI and CSCW.

Author Keywords

Fabrication; Entrepreneurship; Innovation communities; Bitcoin; Open Source.

Introduction

Digital fabrication, industrial production, and hobbyist making are all growing out of the emerging spaces and places of making. Interestingly, these new ways of thinking about digital fabrication also impact the way we think about entrepreneurship, as it occurs in emerging sites of innovation and based upon emerging technologies. In this paper, we will argue that there are three particular conditions to be aware of when trying to understand entrepreneurship based on

emerging technologies. First: technology-founded knowledge and advice that goes beyond business principles is important for start-ups working with new technologies. Second: Emerging technologies are often not proprietary, and therefore they cannot be protected by start-ups as an “unfair advantage”. Instead start-ups need to be aware of the decision making processes in the open source communities that drive these technologies forward and understand how these decisions influence the nature of the technology and the types of business opportunities available. Third: Emerging technologies are socio-material in the sense that the technology is meshed with the dynamic communities that create them and move them forward.

In this paper, we will present the three conditions and illustrate our points by drawing upon empirical work on Bitcoin which we have done over the last 9 months. We propose that these conditions are important for beginning to theorize entrepreneurship in CHI and CSCW.

Theoretical framework

Within CSCW, a body of literature on fabrication and new sites of innovation is emerging. This body of literature looks at makerspaces and DIY communities from a practice based perspective. Some of the main contributions to this emerging literature focuses on cultural and political aspects of making [8], personal design practices within making [2], and the transition from hobbyist fabrication to industrial fabrication [9]. Several geographical sites have been examined, among others China [8] [9], India [6] and Palestine [3]. Although this literature gives good insight into the practices taking place within these new sites of

innovation, it does not address entrepreneurship as it occurs within these sites.

The study of entrepreneurship on the other hand generally deals with (i) intrinsic cognitive features of entrepreneurs [13] [5] [1], (ii) entrepreneurial action, both as outcomes [4] and antecedents [7] and (iii) effectual mindsets that create entrepreneurial opportunities [12]. While this body of literature does address various aspects of entrepreneurship as it occurs, it does not look specifically at tech-entrepreneurship taking place in the emerging sites of innovation described above.

Results

Our study focuses on entrepreneurial practices building on the emerging phenomenon of Bitcoin/blockchain. We use the story of one of our informants in Dublin as the main illustration of our arguments. We also supplement this story with other examples taken from the tech startup environment.

The case of Bitcoin start-ups

Looking at Bitcoin technology as a new space for innovative tech start-ups, it is crucial to understand how the nature of the technology and its continued development is directly impacting the ways in which new entrepreneurship emerges. In particular we found that in the case of bitcoin, there are three areas of knowledge critical for entrepreneurial decision-making which are not captured by current approaches to entrepreneurship. These areas are what ‘makes the context’ of bitcoin technology as a space for new innovations.

From generic business mentoring towards technologically-founded mentoring

Current entrepreneurship literature refers to innovation and entrepreneurship in very general terms – as it in principle does not matter whether your company makes chocolate or technological solutions. However our empirical data demonstrates that this is not the case. In the following example, one of our informants working out of Dublin explained to us during an interview, how the first business accelerator he was part of did not provide the right kind of skills and competence that he and his Bitcoin project needed.

"So, (at the first business accelerator) when we came there, most of the mentors never heard of Bitcoin before. So when you have to explain, it's like being an internet company and having to explain the internet before having to explain your product. It's really hard, and it's not what you should do. You shouldn't have to explain the technology. You should have just to explain what you do. So yeah, we had to explain it, like everything: about finance, about how it works, about security particularly. And we shouldn't have to do that. When we went to the Fintech lab the people knew exactly what we were talking about. So much easier. We could just explain what was our solution, and we could explain in thirty seconds what we were doing and they get it."

As our informant explains above, the first business accelerator, which the company was admitted into did not have the technical expertise to even comprehend the basic technology which was the foundation for the business venture. This meant that our informant never received the right questions to further develop the idea.

In addition, the lack of technical knowledge also threatening his idea, since mentors at the business accelerator advised him to move away from the niche market that he was planning on serving towards a more mainstream idea, which turned out to weaken the whole business proposal.

"But we were kind of encouraged to move to not a niche market, but something more mainstream. And it was a disaster. So we shouldn't - we shouldn't have listened to some of the mentoring."

What clearly stands out from this example is the importance of the technological (and not just business-related) knowledge available for tech start-up companies and how the current approaches to entrepreneurship neglect this vital aspect.

From proprietary technology towards open-source technology

In the entrepreneurship literature, competitive advantage is often considered in terms of the development or acquisition of proprietary technology, and the protection of this technology as a source of "unfair advantage" [11]. However, when we examine our example of Bitcoin, we found that one of the fundamental characteristics of this technology, is that its development takes place outside of the direct control of a given start-up, and in shared open-source communities. This basic nature of start-ups building on open source technology, places certain conditions for how the innovators need to engage with technology development. In example, we saw how, in the case of bitcoin, decisions on the technology are discussed within online fora such as Reddit, and adopted by

consensus by the Bitcoin core development team. This consensus mechanism sometimes creates tensions and deadlocks as illustrated by the current “block-size” debate in Bitcoin. As our informant puts it:

"Right now (the main debate focuses on) Block size. And that's the number of transactions. Kind of the number of transactions we can have per second on the network. So it's really small. Right now Bitcoin can only handle three, hmm- three transactions per second, so it's nearly nothing. And of course it's going to scale. We are already at more than half of the capability of the network, so in less than six months it will be full, meaning you will have to pay more fees if you want your transaction to be processed, if you don't pay enough it will never be processed. Some people want that to happen, and some people just want to increase the number of transactions per second you can do. It's very, very easy to change. It's just one number in the code, it's not a technical limitation. But there is way too much money in play, because some venture capitalists have invested a lot of money into some companies trying to fix this problem. And there is a lot of lobbying of people trying to block the problem of Bitcoin just to get some companies taking off, and some others want to improve it, so yeah. It's just competition between companies and they are lobbying against Bitcoin."

What we see above is that the core developers behind bitcoin technology make decisions on behalf the whole community, which have direct consequences for the technical design of the tech start-up. If the block size is kept as it is, it will allow for certain start-ups to develop so-called “side chains”. Side chains can be best conceptualized as open tabs, where many transactions are recorded off the bitcoin blockchain, and then re-

consolidated with the blockchain as one transaction. This will allow for a much higher number of transactions without increasing the transaction cap that is built into the Bitcoin protocol. A prerequisite for the success of these start-ups working on side chain technology, is that the bitcoin block size remains unchanged, otherwise the core value proposition of the start-up will be greatly diminished. On the other hands certain start-ups are in favor of increasing the block size because it would be an advantage for their specific business (e.g. large Bitcoin miners).

This example illustrates how entrepreneurs in a tech-start-up cannot ignore outside decisions made in the open-source communities that they build on. It also shows that it is critical that they consider these core technology decisions and ongoing lobbying when making decisions about the direction of their business venture. The importance of understanding the link between decision-making in open source technologies, and opportunities for start-ups is a point that is not part of the current entrepreneurship literature.

From distinct community towards socio-material communities

Bitcoin technology was originally developed as a reaction to the financial crisis – as an alternative to the excessive power held by large banks in the global economy. It was about shifting the power to the individual, and allowing anyone to have the right to hold onto and spend their money feely – A totally decentralized peer-to-peer system for digital cash [10]. However, as the bitcoin technology developed it did not only function as a tool for decentralizing power, it also was a new type of technology, which banks found

interesting and potentially useful. As one of our informants explains:

"... (The bitcoin community) is a really diverse thing actually. So Bitcoin started with mainly anarchists, so really a niche community, and then there was some interest from the security people as well. At some point finance took over, so right now it's a lot of finance people. We don't even hear about the anarchists anymore, which is really good for the ecosystem because we need to think about generating revenue if we want to grow as an ecosystem, not just about privacy or hiding phones or whatever. So it's evolving quite a lot. There are a lot of technical people, but right now a lot of finance people are jumping in. So sometimes I don't really know what the technology is doing, sometimes I do. So it causes a lot of confusion. Sometime you have announcements that just don't make sense from a technical side of things."

So what we see here is that it is vital for tech start-ups working with bitcoin technology to also consider who the members of the community are, and understand that although certain groups are not involved in the community, they might become part of it at a later stage (e.g. banking). As these new stakeholders join the bitcoin community, new use cases emerge, and the technology adapts in order to support these new business opportunities. Our informant expands on this by showing how the start-ups working with bitcoin technology are changing from a business-to-consumer focus to a business-to-business focus.

"... right now the finance people see that there is a lot of money there and so they are really interested to jump in. The venture capitalists also help a lot on that."

At the beginning the V.C.'s were investing in wallets (i.e. software applications allowing individual users to store their bitcoins). So that would be investing in people... like customer adoption. That was like 2013. And starting in 2014 and now you can see that the V.C.'s don't invest in these type of things anymore. Right now they are investing in deep technology, so they, they know that we are going to work on the technology side of things, not on customers anymore. And that's basically for banks. So we completely changed the focus from BtC to BtB. And that's really interesting. So right now what we see is people from Wall Street leaving a really, really well paid job to go in startups in the Blockchain world. So that's a completely different approach. Because they know the problems. Bitcoin was fixing a problem that nobody had. And right now some people know exactly what the real problems are in finance, they are moving in. And that's since we the tech people we don't have a clue how it works in the bank, so it's pretty good."

This example illustrates the socio-materiality of Bitcoin. The bitcoin communities are meshed with the technology, and it is through their participation that the technology develops and adapts to stakeholder needs. One cannot conceive of the technology as detached from the community whose practices bring it to life and determine its future course.

The consideration for how technology communities (such as bitcoin) develop, and how this matters for the new forms of tech entrepreneurship is not part of any current literature. However, it is changing the ways we think about tech- start up entrepreneurship. We found that it is crucial that new innovators are able to identify the tech community relevant for them, and monitor

changes within these communities in terms of participants (entering banks), which might directly impact their value proposition and overall business model.

Based on our overview of the particularities of entrepreneurship in the Bitcoin domain, we propose the following two assumptions, which we plan on expanding in a conference paper later this year: (i) Tech Entrepreneurship is embedded in multiple and sometimes distributed or overlapping practice ecosystems, and (ii) Entrepreneurship is an inherently collaborative endeavor, not just between members of a team, but also in and between the multiple, distributed and overlapping ecosystems that entrepreneurial action is embedded in.

Conclusion

In this position paper we have addressed some of the special conditions that are relevant to tech-

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entrepreneurship as it builds on emerging technologies such as Bitcoin. Firstly, we have shown that unlike more traditional forms of entrepreneurship, start-ups in the Bitcoin domain need to be aware of the importance of technologically-founded advice and mentorship. Secondly, since Bitcoin technology is not proprietary, we have emphasized the importance of understanding how decision making in the open source community influences the nature of the technology, and as an extension of this impacts the business opportunities available to start-ups. Finally we have shown how communities play an important role in these types of tech start-ups as they are dynamic and meshed with the technology itself in a socio-material way: as new entrants join the community, the technology adapts and opens up new business opportunities.

We propose that this paper should be seen as a very first step towards theorizing tech entrepreneurship within CHI and CSCW.

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