

Blockchain technology and organizations research symposium

August 15-16

Hosted by:

University of Connecticut School of Business
Connecticut Center for Entrepreneurship & Innovation
&
The Werth Institute for Entrepreneurship & Innovation
Stamford, Connecticut

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Background

New digital technologies increasingly challenge our understanding of how economic activity is organized. A decade ago, the Bitcoin whitepaper was published. In it, a peer-to-peer version of electronic cash is described together with the underlying digital infrastructure now commonly referred to as blockchain technology (Nakamoto, 2008). Since then, blockchain technology and its applications have drawn much interest in public, business, and academic circles. And with that interest, blockchain technology has evolved to a point where there exists multiple designs and use cases. Designs range from permissionless digital infrastructures without centralized coordinating entities or trusted third parties, to more centralized permissioned distributed ledger technologies that rely on centralized coordination and trusted parties. Use cases range from payment systems, to Turing complete virtual machines capable of executing sophisticated logic in so-called smart contracts that facilitate and enforce contractual performances (Szabo, 1996; Buterin, 2013).

Proponents of the technology argue that this high level of interest and the active experimentation with designs and use cases illustrate how blockchains and distributed ledger technologies have the potential to significantly shape and alter our economic and social systems (Iansiti & Lakhani, 2017). This potential includes, but is not limited to, deployment in financial applications, digital

goods tracking, provenance, digital rights management, security, digital identities, decentralized service offerings, counterfeit protection, and autonomous organizations (Goel, 2015; Catalini, 2017a). Furthermore, using smart contracts, economic activity can be coordinated around a shared state of data, performance differentials become ambiguous as inter-firm and market-firm boundaries become blurred, and trust characteristics are in part determined by protocol rules (cf. Catalini, 2017b). This is a direct challenge to the theoretical *status quo* surrounding organizational theories that rely on fundamental assumptions involving trust and network position, e.g., organizational ecology, institutional theory, transaction cost economics, resource dependence, and network theory (Seidel, 2018).

Thus, blockchain technology may have a foundational impact on our understanding of organizations, economics, and strategic management. With this symposium, we encourage early-stage submissions that investigate the theoretical boundaries of our existing knowledge base as the digital economy begins to import blockchain technologies into organizational phenomena. We are particularly interested in manuscripts that explore topics as described below.

First, existing *value logics* are being challenged by new forms of organizing where the value logic is part of a generative digital ecosystem consisting of a dynamic set of hierarchically independent, yet mutually co-dependent, heterogeneous actors (Risius & Spohrer, 2017). Literature evolving from work on alliances and networks, as well as cooperative strategies, can further inform the discussion around how blockchain-based organizational value logics are changing both from a theoretical and applied perspective. Also, as value logics change, so will the determinants of differential firm performance. The dominant thought within strategic management considers a firm's resources as the locus of differential firm performance (Wernerfelt, 1984; Conner, 1991; Barney, 1991; Teece, 1982; Helfat et al., 2007; Kraaijenbrink, Spender, & Groen, 2010). However, the conceptualization of firms as input-refinement-output systems where the market decides the value of productive output is challenged by notions of generativity where value creation and the development of new value offerings fundamentally takes place on a digital infrastructure in a distributed system (Tilson, Lyytinen, & Sørensen, 2010; Yoo, Henfridsson, & Lyytinen, 2010; Yoo, Boland, Lyytinen, & Majchrzak, 2012; Yoo, 2013; Hautz, Seidl, & Whittington, 2017).

Second, our understanding of *governance* needs to evolve to understand co-dependent peer-to-peer behavior that is generative and emergent (Risius & Spohrer, 2017). Blockchain based governance is not easily understood through existing lenses such as social contracts, markets, hierarchies, networks, and bazaars (Reijers, O'Brolcháin, & Haynes, 2016; Miscione et al., 2017). This is not to say that blockchain technology makes existing knowledge obsolete. Rather, as Davidson, De Fillippi and Potts (2018) argue, blockchain based governance has coordination properties of markets, a digitalized governance of the commons, and the

constitutional and legal properties of a nation state, all enforced by code where a monetary policy is written into the protocol. On the basis of these arguments, recent theoretical work, and emerging empirical findings, there is a need to rethink human agency in organizational governance, the role of transactions costs and social contracts, socioeconomic institutions, and the meaning of fundamental concepts such as trust, justice, decision-making, management, and consensus.

Third, *venture capital* has had a massive disruption. The Initial Coin Offering (ICO) and the concept of token airdrops have democratized venture financing. An extension of crowdsourcing, ICOs need to be considered in light of the wave of funds being raised in such large amounts to support innovation. Considering the crowdfunding literature (Greenberg & Mollick, 2017; Mollick, 2014; Mollick & Nanda, 2015), further examination is necessary to understand the theoretical extensions, boundaries, and limitations of this increasingly popular methodology of fundraising.

With this symposium, we encourage both theoretical and empirical approaches into the above described topics. In addition, it is clear that there is a need to investigate existing theories that underpin our current understanding of organizations, economic activity, and strategy in light of blockchain technology and the digital transformation occurring in our economy. For each of the aforementioned topics, potential research questions may include but are not limited to:

Value logics and strategy

- What is the logic of value creation and value capture in a blockchain-based economy?
- What are the determinants of performance differentials?
- What determines the value of productive outputs in a transparent and distributed ecosystem?
- What are the generic strategies and core design principles for blockchain-based economic activity?
- How does blockchain technology improve our understanding of how innovation processes unfold in established firms, startups, and distributed ecosystems?
- How does blockchain technology impact taxonomies of existing business models?
- How can non-contractual value co-creation be fairly distributed?
- What are the economic, organizational, and strategic implications of a world that is generative and reprogrammable, where innovation needs to be fast while mistakes may be irrevocable?

Governance and structure

- What is the decision making logic and what is the locus of decision making power in blockchain-based organizations?

- What are the mechanisms for settling contentious issues in blockchain-based organizations?
- What are the coordination mechanisms that underlie emergent peer-to-peer behavior?
- What does the interplay between consensus around the shared data state and consensus on the social layer look like?
- How can we utilize socioeconomic insights to prevent forks?
- How does blockchain technology alter taxonomies of existing governance solutions?

Venture Financing and Other Applications

- How do ICOs differ from other forms of crowdfunding (i.e., equity-based, rewards-based, peer-to-peer lending)?
- How does token type (i.e., security, utility, asset-backed) influence blockchain-based firms' post-ICO performance?
- How does ICO regulation impact innovation amongst blockchain-based firms?
- What contexts (industries, market categories, etc.) are suitable for blockchain applications?
- What are the required resource reconfigurations for incumbents who seek to adopt blockchain technology?
- How does the context impact the choice of suitable design parameters for the underlying blockchain protocol?
- How do institutional factors affect the success and failure of blockchain projects?
- Can we move beyond mere disintermediation and substitution of the existing to create new value co-creation systems? If so, what would these look like?
- How does blockchain complement other means of information generation and processing in organizations (i.e., big data, machine learning, artificial intelligence)?

Theory development

- What does a financial infrastructure look like with the introduction of processual trust (in addition to existing macro-institutional and social trust logics)?
- How does blockchain technology affect transaction costs, asset specificity, VRIN characteristics of resources, and capability development?
- How does blockchain technology extend our understanding of cognition, evolutionary processes, and decision making?
- What are novel methods for studying blockchain-based activity?
- What, if any, are the barriers of growth and generative capability in blockchain-based ecosystems?
- What are suitable units of analysis for blockchain research?

Submission process and deadlines

Guidelines: No more than six pages for paper sessions relating to theme of the workshop. Only original unpublished work is sought; but you may have presented this paper at a conference previously. Theoretical or empirical papers are encouraged.

Submission deadline: June 9.

Invitations to participate in workshop: June 15.

Doctoral Students are encouraged to apply for support. More information can be gained by emailing david.noble@uconn.edu.

Location and contact information

Workshop starts August 15 at 12 - noon; Workshop ends August 16 at 4pm.

University of Connecticut will host the workshop at their Stamford Campus.

Accommodations: Hilton Stamford Hotel & Executive Meeting Center, 1 First Stamford Place, Stamford, CT 06902, Phone (203) 967-2222. A block of rooms have been secured under the UConn School of Business name for both August 14 & August 15. The rate is \$119 + tax.

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