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The Collaborative Economy: A Disruptive Innovation or Much Ado about Nothing?

Panel

Michel Avital

Copenhagen Business School
Copenhagen, Denmark
michel@avital.net

Magnus Andersson

Viktoria Swedish ICT
Gothenburg, Sweden
magnus.andersson@viktoria.se

Jeffrey Nickerson

Stevens Institute of Technology
Hoboken, New Jersey, USA
jnickerson@stevens.edu

Arun Sundararajan

New York University
New York, New York, USA
digitalarun@nyu.edu

Marshall Van Alstyne

Boston University
Boston, Massachusetts, USA
mva@bu.edu

Deb Verhoeven

Deakin University
Melbourne, Australia
deb.verhoeven@deakin.edu.au

Abstract

An economy based on the exchange of capital, assets and services between individuals has grown significantly, spurred by proliferation of internet-based platforms that allow people to share underutilized resources and trade with reasonably low transaction costs. The movement toward this economy of “sharing” translates into market efficiencies that bear new products, reframe established services, have positive environmental effects, and may generate overall economic growth. This emerging paradigm, entitled the collaborative economy, is disruptive to the conventional company-driven economic paradigm as evidenced by the large number of peer-to-peer based services that have captured impressive market shares ranging from transportation and hospitality to banking and risk capital. The panel explores economic, social, and technological implications of the collaborative economy, how digital technologies enable it, and how the massive sociotechnical systems embodied in these new peer platforms may evolve in response to the market and social forces that drive this emerging ecosystem.

Keywords: Collaborative economy, Sharing economy, Sharing Society, Circular economy, Disruptive innovation, Collaborative consumption, Collaborative technologies, Economic impact, Social impact

Introduction

The *collaborative economy* has reached the mainstream media, spurring a discourse that its sentiment spans the spectrum between great excitement and prophecies of economic depression. An industry report by Vision Critical and Crowd Companies argues that "Sharing is the New Buying" (3 March 2014), and in contrast *Co.Exist* warns that "The Collaborative Economy is Exploding, and Brands that Ignore it are out of Luck" (3 March 2014). *Wired Magazine* pronounces proudly "How Airbnb and Lyft Finally Got Americans to Trust Each Other" (23 April, 2014), and in contrast *New York Magazine* argues that "The Sharing Economy isn't about Trust, it's about Desperation" (24 April 2014). The collaborative economy is clearly an emerging phenomenon that deserves further attention and thorough examination to help winnowing the grain from the chaff.

Early peer-to-peer platforms were designed to enable file sharing (e.g. Napster) and the trading of physical goods (e.g. eBay). What sets the new wave of peer-to-peer platforms apart from their predecessors is the enhanced capability to facilitate the provision of services and of financing. A nascent movement toward a peer-to-peer collaborative economy was first articulated in the idea of the Mesh by Gansky (2010), who foresaw the emergence of a social operating system facilitating less dependence on traditional hierarchies and more on fluid peer relationships and collectives. This core idea was later developed by Botsman and Rogers (2011) who noticed the disruptive shift into the so-called sharing economy or collaborative consumption that they believed would create market efficiencies that bear new products, reframe established services, and generate overall economic growth.

A substantive economy based on the exchange of goods and services between individuals has been growing continuously in the last decade thanks to the proliferation of internet-based platforms that allow people to disintermediate the traditional commercial channels and to share excess resources and trade with one another effectively at a reasonably low transaction cost. This emerging paradigm is already disruptive to the conventional company-driven economic paradigm as evidenced by the large number of peer-to-peer based services that mushroom in a wide range of economic sectors. For example, crowdfunding (e.g. Kickstarter), accommodation sharing (e.g. Airbnb), car sharing (e.g. RelayRides and Getaround), ride sharing (e.g. carpooling.com and BlaBlaCar), performing everyday tasks (e.g. TaskRabbit) and energy supply financing (e.g. SolarMosaic.)

Whereas the growth of the collaborative economy is catalyzed by grassroots groups such as OuiShare and Peers that aim to empower citizens, public institutions and companies to create an "economy based on sharing, collaboration and openness, relying on horizontal networks and communities," it is also fuelled by major corporations at the front of innovation, such as GM, BMW and Amazon that explore ways of participating in this emerging ecosystem and benefit from it.

The discussion about the future and prospects of the collaborative economy has just begun and we can contribute to the discourse with our understanding of the relationship between information, technology and people.

Positions and Exploration

In this panel, we will explore and debate the potential prospects of the collaborative economy, its possible effects on the economy and social order, how information technology is likely to play a role in enabling peer-to-peer sharing, and how information technology may evolve in response to the market and the social forces that drive this emerging ecosystem. Following an introduction, we envision a panel discussion on the collaborative economy that explores a diverse range of related economic, social, and technological implications and can consolidate them into a rich repertoire in the context of information technology. Discussion will cover, but is not limited to, the following:

The Economic Impacts of Peer-to-Peer Platforms (Arun Sundararajan)

The continued consumerization of digital technologies suggests that we may be on the cusp of a fundamental "reengineering" of consumption (Sundararajan 2013), a choice of access over ownership facilitated by the widespread adoption of peer-to-peer shared access models, which could fundamentally alter economic demand models based on ownership, and supply models based on corporate production. The collaborative economy can lead to productivity growth and efficiency in a number of ways: by

lowering marketplace transaction costs; by facilitating ‘production’ that is more efficient, allowing a greater level of output to be created from the same level of physical assets and labor; and by creating production and exchange opportunities that were not previously possible. It is also likely that peer marketplaces will be new engines for innovation, creating vast new ‘micro-entrepreneurship’ opportunities that empower individuals previously constrained by employment at traditional corporations.

However, the scope of this transformation is unclear. Understanding the economic impacts requires (a) developing appropriate metrics for measuring the employment, innovation and new business being created by the collaborative economy, and (b) a deeper understanding of whether consumption in the collaborative economy is achieving legitimacy among early adopters, and at what pace it is becoming “normal” versus remaining on the fringes. The panel will discuss the challenges and opportunities in assessing these supply and demand side effects, and debate whether collaborative economy models will have an eventual positive or negative impact on economic growth, welfare and income distribution. Next, the shift of commercial activities from professional to casual has induced a number of regulatory challenges for the suppliers to peer-to-peer platforms (Sundararajan 2012; 2014). Some believe these are necessary barriers for ensuring public safety, while others see this as a case of regulatory ‘misfit,’ wherein new business models do not fit into existing, and perhaps dated, regulatory boxes. The panel will highlight the changes in the social contract induced by peer-to-peer exchange, discuss the risks associated with the unraveling of our current system of capital contributions to society, and examine whether a shift in regulatory responsibility to digital platforms might be the solution. Finally, over the longer run, broader economic changes may occur, including (a) a shift in the organization of economic activity from organizations to new market-like institutions like Airbnb/Uber as well as new franchise-like institutions like the Food Assembly, and (b) a shift in the ownership structure of these new institutions from shareholder corporations to worker cooperatives. The panel will debate how likely it is that different kinds of economic activity will shift from firms to markets, as well as discussing the social and economic benefits and risks of cooperative ownership models.

The Dark Side of the Sharing Economy & How to Lighten It (Marshall Van Alstyne)

In September of 2014, a German court banned the operation of Uber throughout the entire nation. The decision hinged on evidence that Uber’s basic consumer level service did not meet licensing requirements, carry sufficient insurance, or require drivers to honor all fares (Eddy 2014). In June of 2014, the mayor’s office of San Francisco issued cease and desist orders to MonkeyParking. Using a standard smartphone app, this service offered rewards to people who were about to vacate their public parking space, effectively auctioning a public good (Cote 2014). Studying several Texas towns, a Boston University study found that each 1% rise of Airbnb listings predicted a .05% drop in hotel revenues across the board. In his book *Who Owns the Future*, technologist and musician Jaron Lanier (2013) argues that spare capacity exchange, where one pays for only the task at hand and shedding all overhead just mortgages the future. Wages cover only marginal costs and leave nothing for new skills, health care, or retirement.

There is no doubt that the burgeoning collaborative economy has benefited producers and consumers. From a macro-economic perspective the use of excess capacity and the micro-entrepreneurialism is a huge social gain. Prices are more affordable. People with few options are accessing new opportunities. However, there are several dark sides that need to be addressed before the collaborative economy becomes the real economy. This talk will highlight several issues such as regulatory arbitrage, tax avoidance, and the selling of public goods that are hindrances to social advancement. Yet, there are solutions. This part of the panel will also offer ideas for bringing light to a handful of problems. These will include having the service absorb risks in order to benefit the ecosystem, as Airbnb has done when guests have trashed homes of their hosts. Regulators can develop intermediate levels of licensing, as Amsterdam did recently, so that individuals as contractors pay a fair share of increased demand for city services. It can also involve investing in individual contractors, as Elance-oDesk does, to give them new skills, increasing their wages, benefitting the buyer, the contractor, and the platform alike

Sustaining Peer Production and Collective work (Jeffrey Nickerson)

The central issue in the collaborative economy right now is not the viability of sharing: many of these models appear to work (Benkler 2006). The issue is sustainability: how long these models can continue to work. This in turn depends on how workers are compensated. Crowd worker models involve pay (Kittur et

al. 2013), but there are different levels of pay: the requesters and the platform owners are paid under a different structure than the workers. Contests reward the winners – or those who contribute to winning (Boudreau et al. 2011), while Wikipedia relies mainly on volunteer labor. The Wikipedia workers at the inner core, however, are paid by the foundation, or embedded in other paying organizations. Citizen science projects are voluntary (Wiggins and Crowston 2010), but the scientists who initiate the projects are paid. Similarly, Task rabbit pays for neighborly favors. By contrast, time banks work on a kind of generalized reciprocity, in which one does tasks for others for free, and can then request tasks. Will this generalized reciprocity eventually turn into payment schemes, or are there advantages to encouraging reciprocal bonds? Open source platforms Github and Thingiverse (Kyriakou et al. 2012) provide an infrastructure for the free sharing of source code and object designs, respectively. But these platforms are owned by companies. By contrast, platforms such as Quirky encourage sharing by providing a payment scheme for those whose ideas become commercially successful (Majchrzak and Malhotra 2013). All of these systems present economic and ethical quandaries. From an economic perspective, which of these models can be sustained over time? From an ethical perspective, are systems that train workers well but pay them less than the prevailing market rate exploiting the workers for profit or educating them for free?

The Case of Co-producing Research through Crowdfunding (Deb Verhoeven)

The Crowdfunding revolution has harnessed social networks and the collaborative economy to raising venture capital and gaining invaluable unbounded access to primary markets. Crowdfunding is on the rise with estimated volume of 1.5 billion dollars in 2011, 2.7 billion in 2012, and 5.1 billion in 2013. The trend is quite clear and crowdfunding platforms and business models mushroom globally. Entrepreneurs were quick to discover that in addition to cash, they also get as bonus free market information and an opportunity to develop relationships with their market base. In this panel, we will discuss these issues through detailed exploration of a successful pilot project to crowdfund university research (Research My World). The project, a collaboration between Deakin University and crowdfunding platform pozible.com, intended to secure new sources of funding for the 'long-tail' of academic research. More broadly, it aimed to improve the digital capacity of participating researchers and create new opportunities for public engagement. We will examine how crowdfunding and social media platforms alter academic effort (the disintermediation of research funding, reduction of compliance burden, opportunities for market validation and so on), as well as the particular workflows of scholarly researchers themselves (improvements in “digital presence-building”, provision of cheap alternative funding, opportunities to crowdsource non-academic knowledge). To conclude, we will underscore the enabling role of digital media in transforming contemporary academic practices across a range of disciplinary instances and enabling a new form of engagement-led research.

The case of Peer-Based Mobility (Magnus Andersson)

Using information systems to coordinate capacity and needs among peers, sharing services in all kinds of industries are growing fast. Sharing in the personal mobility sector is estimated as reaching 4% in the US, UK, and Canada and projected to double over the next year (Owyang et al. 2013). Why? First, mobile and embedded platforms are becoming common, increasing the number of potential users. Second, demand for personal mobility is increasingly becoming an issue in urban settings. New transport patterns must emerge, where greater numbers of travelers coordinate movement to their destinations (see e.g. European Commission 2011). Yet many sharing services struggle or fail early on. Designs for providing similar services are highly varied, and so are the business models.

What are the primary design patterns of successful peer-to-peer services? In a multiple case study of ride sharing services we found that the nature of the service had more impact than the capability of the digital platform through which it was delivered (Andersson et al. 2013). Major services such as Carpooling.com or Blablacar grew using a plain matching portal. In contrast, entrants with advanced technologies including mobile apps, social networking, and electronic payment failed to accumulate a critical mass of peers. Our findings resonate with others. For example, only 13% learned about peer-to-peer services through social media, and 47% through word of mouth (Owyang et al. 2013). As Lyft and Uber gain momentum, taxi business has mobilized in defence. At the same time, GM has integrated the Relay rides peer car rental service into their OnStar platform. What role do their technological platforms play in forming incumbent's strategies for the collaborative economy? Gearing a flexible digitalized platform to pursue a multitude of business models is becoming a critical advantage and IS as a field is ideally positioned to study and guide industry and the society in this development.

Controversy and Discussion Format

The panel topic is intended to generate varied responses to several specific questions. Panelists will be asked to draw on their rich experience in the field and their intimate knowledge of various flavors of the collaborative economy to answer two initial questions, as follows:

- The collaborative economy: A disruptive innovation or much ado about nothing?
- Would you characterize the collaborative economy as a positive or a negative development, from social, organizational, and personal perspectives?

After the discussion induced by these framing questions and following the current debate in the discourse about the future of our discipline (e.g., Avital 2014), we take a forward-looking turn and focus on the implications of the collaborative economy to IS research and to the prospects of our community at large. Questions for this portion of the panel discussion are as follows:

- What are the most important IS research questions for the next decade that are raised by the emergence and growth of the collaborative economy?
- The collaborative economy has spread rapidly in many industries and markets. What roles do you see the collaborative economy playing in academic research and education?

The panel is designed to stimulate an engaging discussion that not only appeals to a broad audience but also provides practical insights and lively debate. We have assembled a team of six panelists who have experience conducting research on the edge of the collaborative economy and can take economic, social, and technological perspectives on the underlying issues. All panelists will provide illustrations of their respective positions on the collaborative economy and draw insights from their own recent empirical research.

The panel will follow a roundtable discussion format. Following an introduction by the moderator, the panelists will be given about 4 minutes each to address either or both of the two initial questions, for a total of 20 minutes. Panelists will be encouraged to respond to one another and to the audience's initial input as they make their remarks. At this point, the audience will be invited to voice their opinion in response to the panelists' remarks or question them about the topic. The topic is in the news daily and we expect that many in the crowd will have something to contribute to the discussion. About 15 minutes will be allotted for the discussion.

Then, we will move to the forward-looking phase of the discussion. Panelists will be asked to predict the effects of the collaborative economy on the IS field and the academia at large. Panelists will be given about 5 minutes each, for a total of 25 minutes. Questions from the audience will again be solicited in the final 15-20 minutes. The moderator will summarize the main points and facilitate audience participation.

In summary, we seek to evoke provocative ideas and generative thinking that can initiate research on the collaborative economy in the IS discipline and perhaps also contribute to the general discourse thereof. At minimum, we hope that the panel will stimulate new insights about the modus operandi of the collaborative economy and the potential role of information technology in its development.

Participants

Michel Avital is Microsoft Chair and Professor of IT Management in Copenhagen Business School. Digital innovation is the leitmotif of Michel's work that focuses on examining the crossroads of information, technology, and people. Building on positive modalities of inquiry, his research focuses on information and organization with an emphasis on the social aspects of information technologies. He has published over 100 articles on topics such as big data, open data, open design, generative systems design, creativity, innovation, green IT and sustainable value. He is an editorial board member of nine leading IS journals and serves in various organizing capacities in major international conferences such as ICIS, AOM, ECIS and other topical conferences. Michel is an advocate of openness and an avid proponent of cross-boundaries exchange and collaboration.

Magnus Andersson is a Research Manager at the Viktoria Institute. He received his PhD in informatics from Gothenburg University in 2007. His research focuses on open innovation using mobile digital services with a particular emphasis on transport and automotive industries. The research is action

oriented and as part of his PhD studies, he initiated together with industry partners a standardization organization (MSI group) that strives to improve mobile transport systems integration. Magnus has led a number of ITS-related research projects and has helped form the current Swedish ITS strategy. He has published his research in journals and proceedings such as *Information Systems Journal*, *Journal of Strategic Information Systems*, *ICIS* and *ECIS*.

Jeffrey Nickerson is Professor and the Director of the Center for Decision Technologies in the Howe School of Technology Management at Stevens Institute of Technology. His research and teaching interests include decision making, information systems design, and collective intelligence. He is currently the principal investigator of NSF-funded projects researching time banks, crowd creativity, and online community-driven policy design. He has published in *MISQ*, *Decision Support Systems*, and *ACM Transactions on Computer-Human Interaction*. Recent work includes an article on the Future of Crowd Work and a book chapter on Human-based Evolutionary Computing.

Arun Sundararajan is Professor and Rosen Fellow at the Stern School of Business, New York University, and also heads the Social Cities Initiative at NYU's Center for Urban Science and Progress. His current interests include the governance of digital spaces, collaborative consumption and the sharing economy, online privacy, contagion in networks and digital pricing. His award-winning research has been published widely in journals that include *Management Science*, *ISR*, *MIS Quarterly*, *PNAS*, *Social Networks* and *Network Science*. His recent academic findings and expert views have been featured in *TIME Magazine*, *the New Yorker*, *the New York Times*, *the Wall Street Journal*, *Fast Company* and *Forbes*, and he has been an invited expert on *Bloomberg*, *CNN*, *BBC*, *CNBC*, *NPR*, *PBS*, *TechCrunch* and numerous international news channels. Over the last four years, he has published over fifteen op-eds, for outlets that include *Harvard Business Review*, *the Financial Times*, *The New York Times*, *Wired* and *Bloomberg*.

Marshall Van Alstyne is Associate Professor of Information Systems and Dean's Research Fellow at Boston University. Marshall is one of the leading experts in network business models. He conducts research on information economics, covering such topics as communications markets, the economics of networks, intellectual property, social effects of technology, and productivity effects of information. As co-developer of the concept of "two sided networks" he has been a major contributor to the theory of network effects, a set of ideas now taught in business schools worldwide. Awards include two patents, National Science Foundation IOC, SGER, SBIR, iCorp and Career Awards, and six best paper awards. Articles or commentary have appeared in *Science*, *Nature*, *Management Science*, *Harvard Business Review*, *Strategic Management Journal*, *Wired*, *The New York Times*, and *The Wall Street Journal*.

Deb Verhoeven is Chair and Professor of Media and Communication at Deakin University, Deputy Director of the Centre for Memory, Imagination and Invention and a Chief Investigator in the ARC Centre of Excellence for Creative Industries & Innovation. She is the Project Director of Humanities Networked Infrastructure (HuNI), a two-year project funded by NeCTAR (National eResearch Collaboration Tools and Resources). She served as inaugural Deputy Chair of the National Film and Sound Archive of Australia (2008-2011) and as CEO of the Australian Film Institute (2000-2002). She holds current appointments on the Find and Connect Web Resource Advisory Committee (Department of Families, Housing, Community Services and Indigenous Affairs), the executive of the Australasian Association of the Digital Humanities (aaDH) and the Tasmanian Government's Digital Futures Advisory Council. In 2012 Professor Verhoeven initiated Research My World, a collaboration between Deakin University and the crowdfunding platform *pozible.com* to pilot the micro-financing of university research and in 2013 she was named one of Australia's top five research innovators by *Campus review* for this venture.

All the participants have accepted our invitation to serve on the panel if the proposal is accepted. In case of unforeseen circumstances that prevent the participation of any of the above panelists, an equivalent substitute will be provided.

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References

- Andersson, M., Hjalmarsson, A. and Avital, M. 2013. "Peer-to-Peer Service Sharing Platforms: Driving Share and Share Alike on a Mass-Scale," *Proceedings of the 34th International Conference on Information Systems (ICIS)*, Milan, Italy.
- Avital, M. 2014. "Constructing the Value of Information Systems Research," *Communications of the Association for Information Systems* (34:42), pp. 817-822.
- Benkler, Y. 2006. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale Univ Pr.
- Botsman, R., and Rogers, R. 2011. *What's Mine Is Yours*. London: Collins.
- Boudreau, K.J., Lacetera, N., and Lakhani, K.R. 2011. "Incentives and Problem Uncertainty in Innovation Contests: An Empirical Analysis," *Management Science* (57:5), pp. 843-863.
- Coté, J. 2014. "SF Cracks Down on 'Monkey Parking' Mobile App".
<http://blog.sfgate.com/cityinsider/2014/06/23/sf-cracks-down-on-street-parking-cash-apps/>
- Eddy, M. 2014. "German Court Bans Uber Service Nationwide" New York Times Bits Blog September, 2.
- European Commission. COM. 2011. "Roadmap to a Single European Transport Area: Towards a Competitive and Resource Efficient Transport System." Brussels.
- Gansky, L. 2010. *The Mesh: Why the Future of Business Is Sharing*. New York: Penguin Group.
- Kittur, A., Nickerson, J.V., Bernstein, M.S., Gerber, E.M., Shaw, A.D., Zimmerman, J., Lease, M., and Horton, J.J. 2013. "The Future of Crowd Work," *2013 ACM Conference on Computer Supported Collaborative Work (CSCW '13)*.
- Kyriakou, H., Engelhardt, S., and Nickerson, J.V. 2012. "Networks of Innovation in 3d Printing," *Workshop on Information in Networks*.
- Lanier, J. 2013. *Who Owns the Future?* Simon & Schuster.
- Majchrzak, A., and Malhotra, A. 2013. "Towards an Information Systems Perspective and Research Agenda on Crowdsourcing for Innovation," *The Journal of Strategic Information Systems* (22:4), pp. 257-268.
- Owyang, J., Tran, C and Silva, C. 2013. "The Collaborative Economy," A Market Definition Report, Altimeter Group. www.altimetergroup.com
- Sundararajan, A. 2012. "Why The Government Doesn't Need To Regulate The Sharing Economy," *Wired Magazine*. Available at <http://www.wired.com/opinion/2012/10/from-airbnb-to-coursera-why-the-government-shouldnt-regulate-the-sharing-economy/>
- Sundararajan, A. 2013. "From Zipcar to the Sharing Economy," *Harvard Business Review*. Available at <http://blogs.hbr.org/2013/01/from-zipcar-to-the-sharing-eco/>
- Sundararajan, A. 2014. "Trusting the Sharing Economy to Regulate Itself," *The New York Times*. Available at <http://economix.blogs.nytimes.com/2014/03/03/trusting-the-sharing-economy-to-regulate-itself/>
- Wiggins, A., and Crowston, K. 2010. "Developing a Conceptual Model of Virtual Organisations for Citizen Science," *International Journal of Organisational Design and Engineering* (1:1), pp. 148-162.