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Larner, Justin; Walldius, Åke

Article

The platform review alliance board: Designing an organizational model to bring together producers and consumers in the review and commissioning of platform software

Journal of Organization Design

Provided in Cooperation with:
Organizational Design Community (ODC), Aarhus

Suggested Citation: Larner, Justin; Walldius, Åke (2019) : The platform review alliance board: Designing an organizational model to bring together producers and consumers in the review and commissioning of platform software, Journal of Organization Design, ISSN 2245-408X, Springer, Cham, Vol. 8, Iss. 14, pp. 1-11, https://doi.org/10.1186/s41469-019-0055-8

This Version is available at:
https://hdl.handle.net/10419/217475

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Larner and Walldius *Journal of Organization Design* (2019) 8:14
https://doi.org/10.1186/s41469-019-0055-8

Journal of Organization Design
a SpringerOpen Journal

POINT OF VIEW Open Access

The Platform Review Alliance Board: designing an organizational model to bring together producers and consumers in the review and commissioning of platform software

Justin Larner[1*] and Åke Walldius[2]

* Correspondence: j.larner1@lancaster.ac.uk
[1]School of Computing and Communications, Lancaster University, Lancaster LA1 4YW, UK
Full list of author information is available at the end of the article

Abstract

Digital networking technology has helped to bring about the platform economy, in which online networking sites mediate between individual freelance workers and their temporary employers. However, the digital platform economy undermines traditional forms of collective action, particularly trade unions. Following reflections on 15 years of trade union software quality assurance initiatives, particularly the Swedish UserAward program, we realize that there are potential benefits in combining aspects of cooperative, guild, and trade union models in the context of the platform economy. We examine the role that these models could play in enabling new forms of collective action and we bring them together in the form of a conceptual model which we have called the Platform Review Alliance Board. We articulate the Platform Review Alliance model as a set of design patterns, which we invite stakeholders to comment on, refine, and ultimately subscribe to. We then apply these design patterns in the domain of transport. In this domain, we show how software producers, users of the software, and other stakeholders, including individual transport providers, can participate in a Review Alliance Board for the commissioning, production, and review of software platforms for transport systems. The contribution we make is to propose how membership in a Review Alliance Board can be an alternative strategy for both software producers and trade union representatives in taking collective action to assure the quality of workplace software in the context of the growing platform economy.

Keywords: Platform economy, Trade unions, Guilds, Cooperatives, Alliances, Collective action, Transport

Introduction

The platform firm in the platform economy

In this paper, we propose a Platform Review Alliance Board that can bring together guild-like and trade union-like models to promote collective action in the digital platform economy. This conceptual model contributes to the literature on institutional support for workers in the platform economy, where online digital platforms mediate

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between individual freelance workers and customers. The growing trend towards the platform economy (OECD 2017) is a concern, as workers take on tasks as and when they are given them, which undermines regular employment (De Groen et al. 2016). In the context of software production, the lock-in effect has been noted, where if a piece of software can gain enough market share, it gains further customers, complementary applications and eventually dominate the market (Bonaccorsi and Rossi 2003). In the platform economy, these network effects lead to one platform becoming dominant, reducing the power of workers to find alternatives (Kenney and Zysman 2016). These platforms benefit customers as they can find the lowest price for products and services worldwide, but workers do not have the job security, opportunities for collective action, or benefits that workers in more traditional organizations have. Although the Organization for Economic Co-operation and Development (OECD) reports that the platform economy is currently less than 1% of the total economy (OECD 2017), that proportion is growing rapidly.

Coase (1937) defined a firm as where an entrepreneur protects workers from the fluctuating market by acting as their employer. By working within the firm, workers get a regular wage, while the entrepreneur gets the assurance that they will have labor when they need it to satisfy market demands. Although the platform operator might claim not to be a firm in the traditional sense (Kenney and Zysman 2016), the firm (or corporation as it is now more commonly known) still acts as an employer in directing resources (Coase 1937) by using an algorithm in a market where transaction costs approach zero. Figure 1 shows how the platform firm uses an information system to isolate workers and their temporary employers.

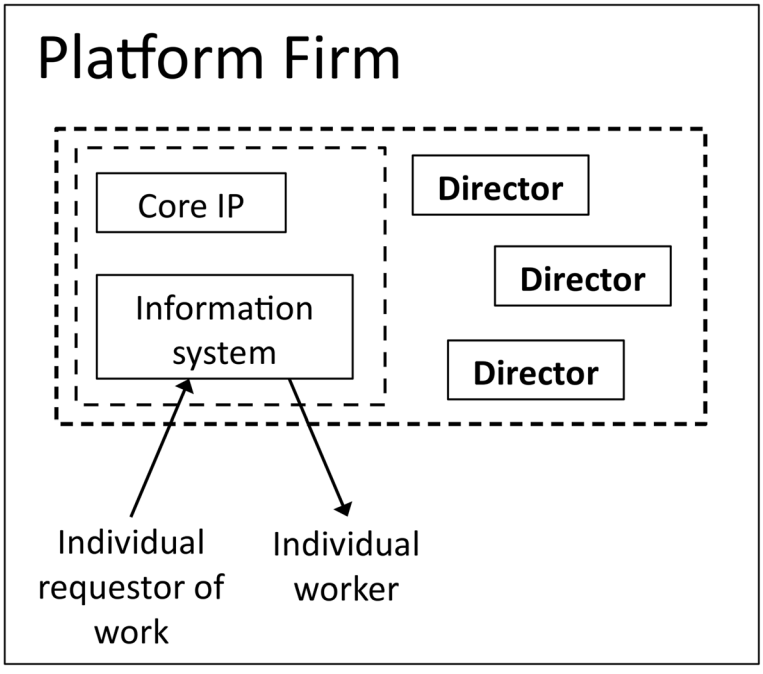

Fig. 1 The platform firm and its relationship with workers. This figure shows how the platform firm uses an information system to ensure that freelance workers can only interact with requestors of work through the firm.

Collective action in the platform economy

Collective action was defined by (Olson (1965, p. 1) as where "groups of individuals with common interests usually attempt to further those common interests." Olson (1965) also claimed that, unless there is coercion or some other mechanism, individuals will not act collectively except in small groups. One problem with collective action is gaining a critical mass, or where a relatively small group can mobilize others to achieve a public good (Oliver et al. 1985). More specifically, Oliver and Marwell (1988) find that a small minority with resources, including independence from oppressors, are key to establishing social movements. Further work by Marwell et al. (1988) indicates the importance of centralization in the success of collective action, where organizers at the center of the network choose to allocate their resources in recruiting individuals who can make the largest contribution. The digital platform economy can potentially offer resources to enable collective action by enabling communication between a smaller group and a wider network of activists (Vlachokyriakos et al. 2017), which could be particularly helpful to individuals who wish to take collective action. We define collective action in the digital platform economy as where a small group can unite based on common interests and then recruit a wider network of activists through the network.

The platform economy can be seen as a continuation of the Industrial Revolution, where technology enabled centralization of the means of production (Fuchs 2014). The platform economy thus creates a labor market which resembles nineteenth-century laissez-faire, where the platform operators set the rules (Fabo et al. 2017); thus, the problems of worker power are just as relevant in the platform economy as they were in the era of centralized factory production. In the platform economy, workers are connected individually by a software algorithm to their temporary employers via a software system, which deters collective action (Healy et al. 2017) through information asymmetry between workers and platform operators (Heeks 2017), leading to power asymmetry (Vandaele 2018). Despite this deterrence, there has been some collective action by workers in the platform economy to date, including the 2016 strike by Deliveroo food couriers in London, where they were able to use messaging apps and other smartphone technology to mobilize around the shared issues of pay and working conditions imposed by the platform (Vandaele 2018). Amazon Mechanical Turk, a crowdsourcing labor platform, has been the focus of a number of attempts to mobilize collective action. Dynamo (2019) was created by researchers at Stanford University but appears to have not gained critical mass, the last activity being in 2015. Turkopticon (2019) aimed to add a review facility to Mechanical Turk but seems to have suffered a similar fate, currently in "read-only mode." Mturk Crowd (2019), however, is a thriving forum for Mechanical Turk workers to share tips on requesters for work, issues with "Turking," and how to operate the platform more effectively.

Another thriving platform for collective action in the platform economy is Ride Share Drivers United (2019), which is a "rideshare advocacy group," focusing on common issues experienced by drivers for platforms such as Uber and Lyft, where they claim that it is "only through large scale collaborative effort that we can send a strong message to the ride share companies." Ride-share drivers act as the central group in this collective action, communicating with participating drivers through a mobile app, which alerts the driver when collaborative action is planned for their area. They go beyond advocacy, however, to offer their own platform, ZicXoc Rides (2019), which is

an "app based booking system, designed to connect drivers with riders directly, enabling drivers to run a truly independent business, while offering passengers a better service for better value." This alternative platform could enable individuals offering a driving service to develop their identity as independent drivers rather than operate under the identity of an existing platform. The question of identity becomes important when considering how trade unions can operate as mechanisms for collective action in the platform economy.

Trade unions in the platform economy

The Frankfurt Paper on Platform-Based Work (2016, p. 2) notes that workers as independent contractors in the digital platform economy are "typically excluded from the legal and social protections established for employees over the last hundred years" and that the platform economy undermines traditional forms of collective bargaining, particularly trade unions. The authors of the Frankfurt Paper (2016) also highlight that "worker organizing has for decades been correlated with the economic well-being of working people" (p. 6) and call for a "co-operative turn," "in which workers, clients, platform operators, investors, policy makers, and worker organizations work together to improve outcomes for all stakeholders" (p. 3). This call is reinforced by Vandaele (2018), who calls for guild-like organizations and worker-led platform cooperatives, aligning with trade unions in the platform economy. Unions have been the main mechanism for collective action in the working environment since their origins in the 1920s as craft unions, through their shift to collective bargaining with a single employer from the 1930s onwards, then to their current strategic role as work becomes more fragmented between employers, including forging alliances (Benner 2003) and setting quality standards (Walldius et al. 2009). This strategic role thus becomes key to how unions might be relevant in the platform economy.

Many writers have proposed different measures of institutional redesign to address the negative consequences of the platform economy, for example, Lanier (2014) predicts that, in a not so distant future, traditional businesses could be replaced by individuals selling data and services through new kinds of cooperative organization. Organizations can be seen in terms of enabling cooperation amongst individuals and groups who would otherwise be in conflict (March and Simon 1993), where Hargrave and Van de Ven (2006) highlight how a few individuals can organize a network to bring about institutional change, where conflict shapes new institutions. In this case, the conflict is between platform firms and workers who interact with these firms individually via software algorithms, from this conflict can arise new institutions for collective action. In creating a new model for collective action in the platform economy, we start with the proposal from Unionen (2016), the biggest Swedish trade union for white-collar workers. Unionen proposes that employer and employee organizations jointly create an institution to certify platform owners who are prepared to sign collective agreements that both enables and facilitates transactions on the platform-based labor market that are sustainable for all stakeholders. This form of platform institution is what Söderqvist (2017) describes as a two-sided form of self-regulation, representing both capital and labor. Our model focuses on a specific aspect of the platform economy, user participation in the review and certification of workplace software.

Institutional redesign to bring together producers and consumers

User certification of workplace software

In this paper, we reflect on opportunities for institutional redesign geared towards creating the organizational conditions for such review activities. In this reflection, we draw on the experience gained with the UserAward program in Sweden. The UserAward software certification program was launched in 1998, initiated by the Swedish Trade Union Confederation (LO) in cooperation with the Swedish Confederation for Professional Employees (TCO) (Walldius et al. 2005). The main activities of the UserAward program were to involve users of the software in its deployment, use, and eventual redesign in the workplace through a process of user-driven software quality assessment, where a key finding of an evaluation of the program was that it needed to consider its effects on both direct and indirect stakeholders (Walldius et al. 2005, 2009, 2015).

However, a weakness with user certification is that it was reactive and lacked strategic alliances with software providers, two shortcomings that are not seen to the same extent in its predecessor, the TCO Certified program for computer hardware. In the light of the recent renaissance of guild-like cooperative social formations, external review and certification could offer a mechanism for software producer guilds to involve external stakeholders in the commission, review, and certification of software. We identify there is an urgent need for a systematic scientific and scholarly review of how these propositions could succeed, but, as the Frankfurt Paper (2016) highlights, there is a lack of systematic review of software systems, also of resources to deal with the lack of review. In this paper, we propose a multi-stakeholder review alliance to promote long-term scientifically based reviewing activities that can support future collective bargaining processes regarding the design, development, and deployment of platform-related software. The proposed software producer-user alliance model can involve both internal and external stakeholders as participants in the process of software review and commissioning.

The Platform Review Alliance Board model

To make the diverse set of stakeholder interests explicit and negotiable, in particular the needs and requirements of different user groups who could otherwise be in conflict, we propose the forming of review alliances that can act as facilitators for user organizations, employer and employee organizations, universities, and relevant public authorities to initiate this kind of transparent and multi-stakeholder reviewing and policy deliberation activities. These alliances can be branch-specific, national, and international. Establishing a Review Alliance Board will entail gaining critical mass (Oliver et al. 1985) which can be achieved through a national or international trade union organization providing the resources to establish the Board and recruit key stakeholders. We also propose that these activities should build on the knowledge base provided by the more than 20 years of research and development activities within the value sensitive design and the pattern language communities. The proposed Review Alliance model is hierarchical in the sense of having "protocols, processes, and infrastructures that enable multi-actor collaboration" (Fjeldstad et al. 2012, p. 739), together with a commons of resources that actors can share and develop. The Review Alliance model is an example of a collective actor (Dolata and Schrape 2016) that operates in the

platform economy and is thus enabled by both a social and a technological infrastructure, including the Board as a core structure. As with previous initiatives that enable collective action in the platform economy such as Ride Share Drivers United (2019) and San Mateo County Alliance (2019), the Review Alliance Board can operate in the platform economy, benefiting from its fluidity and network effects. The proposed model is also an example of a deliberative form of bureaucracy (Joyce et al. 2013), where the platform, like Wikipedia, "provides affordances which allow for a wide variety of rich, multifaceted organizational structures" (Butler et al. 2008, p. 1108), which can enable platform workers to enter into alliances with consumers and regulators. We introduce the Platform Review Alliance Board model as a design pattern in the next section.

The Platform Review Alliance Board model as a design pattern

As well as trade union models, we draw on the medieval guilds, where guilds have been linked with open source by Merges (2004) and developed further by Larner et al. (2017) as the open-source guild model. The open-source guild model and experiences gained from user-driven quality review activities contribute to potentially complementary organizational patterns in that each can help address an identified weakness with the other. Evaluation of the UserAward model (Walldius et al. 2015) indicates that the process needs to be developed to involve a range of software providers and researchers, including both indirect and direct stakeholders in the review and commissioning of platform-related software. We propose a network that brings together representatives from software producers and trade union which does the following:

1. Draws on the open-source guild model to support the creation of guild-like cooperative structures for software producers
2. Draws on the experience of the UserAward program to involve trade union representatives in software review
3. Draws on the research aspect of the UserAward program to involve universities in relevant research
4. Involves the management of workplaces where the software will be used

Design patterns were introduced by Alexander et al. (1977) in the context of urban architecture, where a design pattern is abstracted in a standardized format from practical experience, so it can be applied to future design problems in the same domain. Dearden and Finlay (2006, p. 50), while investigating the application of design patterns in computer science, defined a pattern as "a structured description of an invariant solution to a recurrent problem within a context" and a pattern language as "a collection of such patterns organized in a meaningful way." A design pattern typically takes the form of the following:

- *Context*. Where the pattern links to a higher-level pattern
- *Name*. That clearly states the central idea of the pattern
- *Example*. An example of the pattern as used in a real-world context
- *Problem definition*. The issue that the pattern is intended to address
- *Forces*. These further define the problem

- *Solution*. A generic statement of how the problem may be addressed
- *Supporting patterns*. Lower level patterns that the pattern links to

This paper has presented the problems with existing organizational structures for the production and review of workplace platform software and offered the Platform Review Alliance Board as a potential mechanism to overcome them. A design pattern approach, in this case creating a propositional design pattern, can help with implementing this model. Considering the Platform Review Alliance model as a propositional design pattern that builds on existing established patterns, we can present the model as follows:

- *Context*. Platform economy, trade union, cooperative, software producer guild
- *Name*. The Platform Review Alliance Board
- *Example*. There are examples of components of the Review Alliance Board model, the UserAward program is an example of unions working with universities and user groups to review software, while the San Mateo County Union Alliance (2019) is an alliance of unions that engage in reviewing the design, deployment, and use of UrbanSim software. The Software Guild (2019) offers training and development from a group of masters to apprentices in software. The Swedish trade union Unionen (2016) proposes to create a certification body for platform owners, which could also be a mechanism that is applicable in the Alliance Board model.
- *Problem definition*. The platform economy pattern, where centrally owned online servers facilitate workers and employers to interact individually, undermines collective action.
- *Forces*. A mechanism for centralized interaction means workers interact individually with each other rather than in groups. Existing organizational patterns, particularly trade unions, guilds, universities, and small work groups are being bypassed by the platform economy pattern.
- *Solution*. Create a Platform Review Alliance Board that can be a central body to link together and strengthen existing organizational patterns, particularly trade unions, guilds, universities and small work groups in the context of workplace software production and review. Individuals who are members of these organizations can interact via their organization and the Review Board. The Review Board is responsible for performing and reporting on transparent and standardized software reviews and local user and management satisfaction surveys.
- *Supporting patterns*. User software satisfaction survey, users' software review, master and apprentice

The Platform Review Alliance Board pattern can potentially overcome the inward focus of both trade unions and software producers by encouraging closer co-operation between them and thereby contributing to the strategic development of both parties. Applying this pattern can further contribute to the development of innovative and high-quality workplace software through the involvement of universities who can contribute fundamental research and workplaces who can feedback how the software is used and applied. Figure 2 shows how the Platform Review Alliance Board model can work in practice.

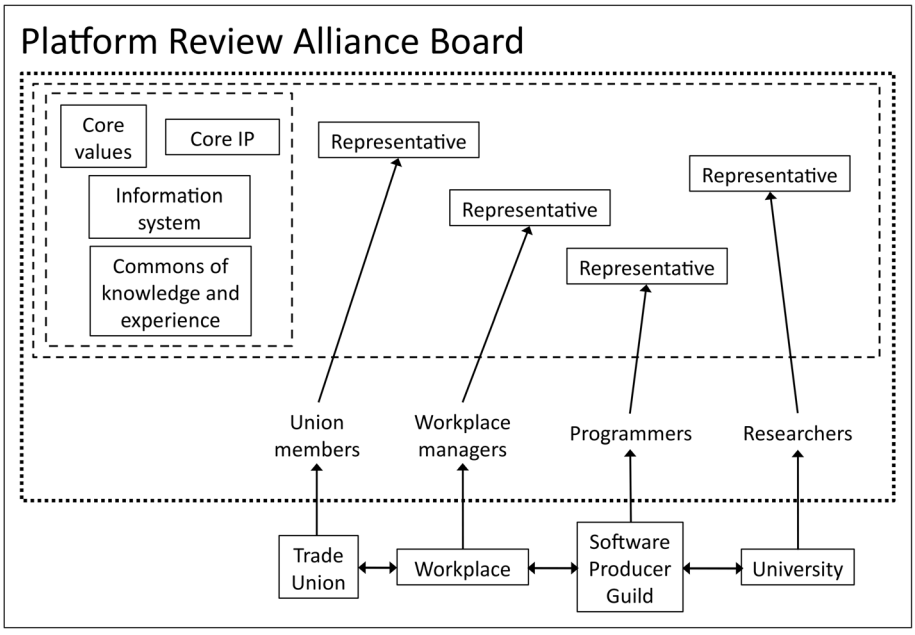

Fig. 2 The Platform Review Alliance Board model. This figure shows how the Platform Review Alliance Board model can work in practice to encourage closer co-operation between trade unions, software producers, workplaces, and universities. In the Review Alliance model, an information system is used to create a commons of knowledge and experience that all representatives can both benefit from and contribute to.

Implementing the Platform Review Alliance Board Model in the context of transport

Little attention has been given to the potential for design patterns in the context of transport design, with the exception of Kisgyörgy and Ungvarai (2015), who consider how design patterns can contribute to highway design. The Platform Review Alliance Board model could be helpful in providing a framework to implement design patterns in the context of transport, which is making increasing use of software. The work of Friedman et al. (2008, p. 305) in the context of UrbanSim can be helpful in implementing the Platform Review Alliance pattern. UrbanSim is an open-source land-use computer modeling system that has been in development since 1996 to assist urban planners in evaluating the potential impacts of planning decisions (Borning et al. 2008). It was developed using a value sensitive design (VSD) methodology, which aims to foster human values in technological design, where both the values implicit in the system and those of stakeholders need to be considered in the design process (Friedman et al. 2002). Friedman et al. (2008) developed the VSD methodology further in UrbanSim, to enable indirect stakeholders to become direct stakeholders through the Indicators Perspectives Framework. This framework "provides a mechanism for different partner organizations to present their own perspectives on major land use and transportation issues, on which indicators are most important, and on how best to evaluate alternative scenarios of land use and transportation" (Friedman et al. 2008, p. 3).

Transport is a domain where software developments have enabled innovative systems that promote the more effective use of public transport. The experience of using and developing UrbanSim since the 1990s showed how transport was key in urban

development (Borning et al. 2008). More recently, projects such as OneBusAway (Ferris et al. 2010) offer an indication of how transport could be transformed using networking technology. However, this technology has also led to other developments that reinforce the corporate platform economy through centralized apps that link individual drivers in their own cars to individual passengers (Belk 2013). These individual drivers could be part of a structure for collective provision of transport, but such a system will need an effective software platform to make it work. The starting point for creating this software platform can be to implement the Review Alliance pattern in the production of software for transport systems. In the domain of transport, there is an additional group of stakeholders, the general public who use transport systems, and increasingly in the platform economy, provide them as well. We propose that these stakeholders can be represented through universities, who can undertake research with transport users that can inform the development of software to run transport systems. This research can use interview techniques with stakeholders, where the design pattern presented in this paper offers a framework for interview design and data analysis.

Conclusions

In this paper, we have presented a conceptual model of how trade union-like and guild-like models can be brought together to promote collective action in the context of workplace software, which we have called the Platform Review Alliance Board. Drawing on the historical experience of guilds and cooperatives, the UserAward program and the development of UrbanSim, we propose that the Review Alliance Board model includes not only guild-like cooperative software producers and trade unions, but also universities and the workplaces where the software platforms will be deployed. We propose that a value sensitive design process that takes into account both direct and indirect stakeholders is appropriate to implement this model. The contribution we make is to propose how a Review Alliance Board model can be an alternative strategy for both software producers and trade unions to take collective action in assuring the quality of workplace software in the context of the growing platform economy, where individual providers are the new workplaces.

We have also considered in this article how the Platform Review Alliance Board model could be implemented in the context of software platforms for integrated transport systems that could include individual transport providers. Future work in the domain of transport can start with a pilot project in one city, which focuses on how software platforms for transport services are designed, deployed, and used. A trade union organization could establish the Board and then invite transport authorities, transport providers, universities, and software providers to become members of the alliance. The university can then undertake a research process with the other members and stakeholders of the alliance to establish both its core values and how it can operate in practice.

Abbreviations

LO: Swedish Trade Union Confederation; OECD: Organization for Economic Co-operation and Development; TCO: Swedish Confederation for Professional Employees; VSD: Value sensitive design

Acknowledgements

The authors wish to thank Lancaster University and KTH Royal Institute of Technology for supporting the collaboration that made this paper possible, also the researchers at the Centre for Sustainable Communications and Media Technology and Interaction Design department at KTH for their valuable input and ideas.

Authors' contributions
We confirm that both authors have contributed to the drafting of this manuscript. Both authors have read and approved the final manuscript. Both authors have agreed to be personally accountable for the accuracy or integrity of any part of this work.

Authors' information
Not applicable

Funding
This work is partially funded by the UK Digital Economy Programme (RCUK Grant EP/G037582/1), which supports the HighWire Centre for Doctoral Training. The funder has had no direct input in the design of the study or the writing of this manuscript.

Availability of data and materials
Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Competing interests
The authors declare that they have no competing interests.

Author details
[1]School of Computing and Communications, Lancaster University, Lancaster LA1 4YW, UK. [2]Media Technology and Interaction Design, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden.

Received: 13 March 2019 Accepted: 15 July 2019
Published online: 29 July 2019

References
Alexander C, Ishikawa S, Silverstein M (1977) A pattern language: towns buildings construction. Oxford University Press, Oxford
Belk R (2013) You are what you can access: sharing and collaborative consumption online. J Bus Res 67:1595–1600
Benner C (2003) "Computers in the Wild": guilds and next-generation unionism in the information revolution. International Review of Social History 48(S11):181–204
Bonaccorsi A, Rossi C (2003) Why open source software can succeed. Research Policy 32:1243–1258
Borning A, Waddell P, Förster R (2008) UrbanSim: Using simulation to inform public deliberation and decision-making. In: Chen H, Brandt L, Gregg V, Traunmüller R, Dawes S, Hovy E, Macintosh A, Larson CA (eds) Digital government: e-government research case studies and implementation. Springer, New York, pp 439–464
Butler B, Joyce E, Pike J (2008) Don't look now, but we've created a bureaucracy: the nature and roles of policies and rules in Wikipedia. In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, April 2008. ACM, New York, pp 1101–1110
Coase RH (1937) The nature of the firm. Economica 4:386–405
De Groen PW, Maselli I, Fabo B (2016) The digital market for local services: a one-night stand for workers? An example from the on-demand economy. CEPS Special Report 133. Centre for European Policy Studies, Brussels. https://www.ceps.eu/publications/digital-market-local-services-one-night-stand-workers-example-demand-economy. Accessed 5 Feb 2019.
Dearden A, Finlay J (2006) Pattern languages in HCI: A critical review. Human-Computer Interaction 2:49–102
Dolata U, Schrape JF (2016) Masses, crowds, communities, movements: collective action in the internet age. Social Movement Studies 15:1–18
Dynamo (2019) Powering change on MTurk. https://web.archive.org/web/20190517144009/http://www.wearedynamo.org/. Accessed 18 Jun 2019.
Fabo B, Karanovic J, Dukova K (2017) In search of an adequate European policy response to the platform economy. Transfer 23:163–175
Ferris B, Watkins K, Borning A (2010) OneBusAway: Results from providing real-time arrival information for public transit. In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Atlanta, Georgia, April 2010. ACM, New York, pp 1807–1816
Fjeldstad ØD, Snow CC, Miles RE, Lettl C (2012) The architecture of collaboration. Strategic Management Journal 33:734–750
Frankfurt Paper (2016) Frankfurt Paper on platform-based work. https://media.arbeiterkammer.at/wien/PDF/studien/digitalerwandel/Frankfurt_Paper_on_Platform-Based_Work_-_EN.pdf . Accessed 5 February 2019.
Friedman B, Borning A, Davis JL, Gill BT, Kahn PH Jr, Kriplean T, Lin P (2008) Laying the foundations for public participation and value advocacy: interaction design for a large scale urban simulation. In: Proceedings of the 2008 International Conference on Digital Government Research, May 2008. Digital Government Society of North America, Montreal, pp 305–314
Friedman B, Kahn P, Borning A (2002) Value sensitive design: theory and methods. University of Washington Technical Report, pp 2–12
Fuchs C (2014) Critique of the political economy of informational capitalism and social media. In: Fuchs C, Sandoval M (eds) Critique, social media and the information society. Routledge, New York, pp 51–65
Hargrave T, Van de Ven A (2006) A collective action model of institutional innovation. Acad Manag Rev 31:864–888
Healy J, Nicholson D, Pekarek A (2017) Should we take the gig economy seriously? Labour Ind 27:232–248
Heeks R (2017) 'Decent work and the digital gig economy: a developing country perspective on employment impacts and standards in online outsourcing, crowdwork, etc'. Paper No. 71, Centre for Development Informatics, Manchester. http://hummedia.manchester.ac.uk/institutes/gdi/publications/workingpapers/di/di_wp71.pdf. Accessed 18 June 2019.
Joyce E, Pike JC, Butler BS (2013) Rules and roles vs. consensus: self-governed deliberative mass collaboration bureaucracies. Am Behav Sci 57:576–594

Kenney M, Zysman J (2016) The rise of the platform economy. Issues Sci Technol 32:61–69
Kisgyörgy L, Ungvarai A (2015) Design patterns. https://www.researchgate.net/publication/281448592_Design_Patterns_In_Transport_Design_The_New_Way_Of_Powerful_Designing. Accessed 5 February 2019.
Lanier J (2014) Who owns the future? Penguin, London
Larner J, Cheverst K, MacDonald M, Hoile C, Soutar A (2017) The open source guild: creating more sustainable enterprise? Journal of Management Development 36:71–80
March JG, Simon HA (1993) Organizations revisited. Ind Corp Chang 2:299–316
Marwell G, Oliver PE, Prahl R (1988) Social networks and collective action: a theory of the critical mass. III. Am J Sociol 94:502–534
Merges RP (2004) From medieval guilds to open source software: informal norms, appropriability institutions and innovation. Paper presented at the Conference on the Legal History of Intellectual Property, University of Wisconsin, Madison, 13 November 2004. Available at https://www.law.berkeley.edu/files/From_Medieval_Guilds_to_Open_Source_Software.pdf. Accessed 5 Feb 2019.
Mturk Crowd (2019) Welcome to MTurk Crowd. https://mturkcrowd.com. Accessed 18 Jun 2019.
OECD (2017) Employment outlook 2017. Organization for Economic Co-operation and Development, Paris
Oliver P, Marwell G (1988) The paradox of group size in collective action: a theory of the critical mass. II. Am Sociol Rev 53:1–8
Oliver P, Marwell G, Teixeira R (1985) A theory of the critical mass. I. Interdependence, group heterogeneity, and the production of collective action. American Journal of Sociology 91:522–556
Olson M (1965) The logic of collective action. Harvard University Press, Harvard
Ride Share Drivers United (2019) Mission statement. https://ridesharedriversunited.com/mission-statement. Accessed 18 June 2019.
San Mateo County Union Alliance (2019) SMC Union Community Alliance. https://web.archive.org/web/20190109200234/http://smcuca.org/. Accessed 5 Feb 2019.
Söderqvist F (2017) A Nordic approach to regulating intermediary online labour platforms. Transfer 23:349–352
The Software Guild (2019) From apprentice to master. http://www.thesoftwareguild.com. Accessed 5 Feb 2019.
Turkopticon (2019) Turkopticon. https://turkopticon.ucsd.edu. Accessed 18 Jun 2019.
Unionen (2016) Plattformsekonomin och den Svenska Partsmodellen. Unionen, Stockholm
Vandaele K (2018) Will trade unions survive in the platform economy? Working Paper 2018, vol 05. European Trade Union Institute, Brussels
Vlachokyriakos V, Crivellaro C, Wright P, Krüger A, Schöning J, Jones M, Lawson S, Karamagioli E, Staiou E, Gouscos D, Thorpe R, Oliver P (2017) HCI, Solidarity movements and the solidarity economy. In: Proceedings of the SIGCHI conference on human factors in computing systems, April 2017. ACM, New York, pp 3126–3137
Walldius Å, Gulliksen J, Sundblad Y (2015) Revisiting the UsersAward programme from a value sensitive design perspective. In: Proceedings of The Fifth Decennial Aarhus Conference on Critical Alternatives, August 2015. Aarhus University Press, Aarhus, pp 1–4
Walldius Å, Sundblad Y, Bengtsson L, Sandblad B, Gulliksen J (2009) User certification of workplace software: assessing both artefact and usage. Behav Inf Technol 28:101–120
Walldius Å, Sundblad Y, Borning A (2005) A first analysis of the usersaward programme from a value sensitive design perspective. In: Proceedings of The Fourth Decennial Aarhus Conference on Critical Alternatives, August 2005. ACM, New York, pp 199–202
ZicXoc Rides (2019) Welcome driver! https://zicxoc.com/portal. Accessed 18 Jun 2019.

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