Reconsidering online reputation systems

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Abstract. Social and socioeconomic interactions and transactions often require trust. In digital spaces, the main approach to facilitating trust has effectively been to try to reduce or even remove the need for it through the implementation of reputation systems. These generate metrics based on digital data such as ratings and reviews submitted by users, interaction histories, and so on, that are intended to label individuals as more or less reliable or trustworthy in a particular interaction context. We suggest that conventional approaches to the design of such systems are rooted in a capitalist, competitive paradigm, relying on methodological individualism, and that the reputation technologies themselves thus embody and enact this paradigm in whatever space they operate in. We question whether the politics, ethics and philosophy that contribute to this paradigm align with those of some of the contexts in which reputation systems are now being used, and suggest that alternative approaches to the establishment of trust and reputation in digital spaces need to be considered for alternative contexts.

Introduction

Trust is a fundamental component of social relations. It helps actors make decisions in situations where direct knowledge that can guide action and cooperation is not always immediately available. Trust helps reduce complexity in social interactions, allowing actors to take decisions in situations which entail some risk (Luhmann, 1979). Interactions in a digital environment are likely to require trust (Hsu et al., 2007; Usoro et al., 2007) even more than those in a

physical environment. While trust is often seen as a tri-partite relation between one individual (trustor) and another one (trustee) in relation to an object or outcome, it can also take a collective form in what is known as reputation, or how a community or group of people view the trustworthiness of another person or another entity.

The increase in the availability of digital data is having a significant impact on our opportunities to engage in social interactions and the ways in which they are enacted. Increased digitization leads to increased remote and mediated interactions. If we view humanity as a network: before the internet, interactions tended to be between nodes that were previously only separated by a few degrees; now the chances of creating a new connection/entering into a transaction or relationship with a previously very distant node are much higher, and the chances of the different parties to a social or economic transaction being physically co-located are much reduced (Shu and Chuang, 2011).

This has led to questions about how to establish trust in mediated interactions involving distant and/or unfamiliar actors, when:

- We don't know whether the person we're interacting/transacting with is who they say they are.
- We don't know whether they have the goods, skills or knowledge they claim to have.
- We don't know whether their digital presence will persist, and so whether we will have any continued relationship (and therefore a chance to reciprocate or for comeback).
- We can't rely on local knowledge and word-of-mouth (reputation).

One of the main ways in which online platforms have responded to this situation is through the development of reputation systems (Dellarocas, 2003; Jensen, Davis, & Farnham, 2002; Resnick et al., 2000). These are systems that collate data in the form of feedback, ratings, and digital interaction/transaction histories, process them through algorithms, and produce a synthetic and very often quantitative measure intended to give a guide to an individual's trustworthiness (Farmer and Glass, 2010).

In a context/mission creep mirroring that of other business-intelligence inspired data analytics (Wilson et al., 2017), such systems are becoming increasingly ubiquitous, no longer confined to the trading and expert knowledge-sharing sites they were originally developed for. Described by Masum and Zhang as a 'distributed court of opinion' (2004, n.p.) that will alleviate the strain on our overburdened 'individual processing capacity' (ibid.) in the face of vastly increased accessible data and so 'help the same number of hours in the day go further' (ibid.), great things are expected of them. It has been suggested they could play pivotal roles in the creation and maintenance of good governance,

transparency and accountability in public office and commerce, through either the creation of trust or even – paradoxically – the removal of the need for it (Litos and Zindros, 2017; Masum, Tovey and Newmark, 2012; Masum and Zhang, 2004; Picci, 2007). But as they, or components such as ratings systems, permeate into perhaps unexpected digital spaces – such as learning environments[1], community support groups (see, e.g., http://supportgroups.com) or even online communities of criminals needing to trust each other in the exchange of services and goods such as hacking and botnets (Décary-Hétu and Dupont, 2013; Dupont et al., 2016) – and as China moves to introduce a mandatory social credit system that incorporates elements of online reputation systems (Botsman, 2017) that attempts to reduce individuals to single measures of quality, we need to ask questions about whether their design is commensurate with the intentions of the systems they are being brought into.

It is now fairly accepted in certain areas of research, that technology and technical artefacts (including information and communication technologies) are not politically or morally neutral. Winner (1980) argued that artefacts, very much like people, have their own politics which cause them to enact or contribute to particular types of ordered social system. He described the now well-known example of the low bridges on roads to Long Island from New York. Winner noticed that the low height of these bridges would exclude categories of people (those travelling on buses, generally working class people or African Americans) from certain actions, such as accessing a middle-class residential area. These low bridges thus embodied political decisions and enacted particular discriminations and exclusions.

In relation to reputation systems, an important question arises concerning the political and moral decisions that these systems embody and carry into the digital spaces they operate in. One episode of the TV series Black Mirror, Nosedive[2], takes the idea of ubiquitous reputation systems to the extreme; in so doing, it powerfully illustrates some of the political implications of reputation systems and their capacity to be the driver of social exclusion and inclusion. In it, people use an app on their mobile phone to rate each other during or after any real interaction. In a plot move that has echoes of the developing Chinese social credit system (Botsman, 2017; Hvistendahl, 2017), those with high scores have access to better apartments and other perks. On the other hand, those with low scores become social outcasts. This reputation system, then, constitutes an instrument for both upward and downward social mobility. Similarly to the low bridges

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[1] Virtual learning environments and learning management systems are increasingly making use of both the conceptual models and user-interfaces of business-intelligence applications, with examples such as the popular CANVAS system using 3-star scales to indicate student performance.

[2] https://www.theatlantic.com/entertainment/archive/2016/10/black-mirror-nosedive-review-season-three-netflix/504668/

described by Winner, the reputation system in Nosedive embodies a politics with rules of exclusion and inclusion which are enacted through and by the artefact.

We suggest that conventional reputation systems are loaded with not just the values they are designed for (trust, honest behaviour, reliability), but also a more extended and subtle value-system: the political and ethical paradigm of the competitive, capitalist free market based on self-interested individuals. Such systems are underpinned by a view of reputation that implicitly (and sometimes even explicitly) commoditizes it, positioning it as a capital (most explicitly in work such as Gandini (2016)) that is inherent to individuals, who can accumulate it, lose it and occasionally even speculate on it.

This might be appropriate for a digital system that is intended to serve as a competitive market, for example an e-commerce website, or to function within a platform capitalist model. However, this may not be the case in other contexts, where a different political, ethical or philosophical paradigm underpins the construction or enactment of the digital space.

In the following, we describe the main features of conventional reputation systems and show why we believe they embody and enact a fundamentally market-based, capitalist paradigm. We then examine various contexts in which such systems, or parts of them, operate, including trading sites (eBay/Etsy/gig economic sites), expert question-and-answer (Q&A), and supportive discussion forums, and ask whether the properties and features of these systems are likely to encourage the kinds of behaviours that participants in and designers of these sites may wish for. Finally, we offer some preliminary observations associated with a project we are working on in the area of Collective Awareness Platforms for Social Innovation, whose goal is to facilitate a novel form of welfare – termed commonfare (Fumagalli and Lucarelli, 2015) – among people who have experienced conditions of poverty or precariousness. We argue that the dominant model of a reputation system would clash with what the project aims to achieve.

Trust and reputation systems in digital spaces

Common features of online reputation systems

Online reputation systems are systems that draw on data about a user's activities to generate an indication of that user's standing within one or more online communities (Dellarocas, 2003; Jensen, Davis, and Farnham, 2002; Resnick et al., 2000). In some ways similar to the points systems and leader-boards common to

online games, in which points are sought competitively and assigned by the game; the "capital" nature of such points is made clear in those games that allow players to "spend" their points within the game-world.

Reputation systems outside of games have a stronger focus on providing users with a metric on which to base judgments about whether to trust other users or select them as partners for a transaction. They are now default parts of the design of e-commerce sites, where items are bought and sold in conventional financial transactions. They are also integral to the increasing number of sites based on a "gig" (Friedman, 2014) or "sharing" (Hamari, Sjöklint, and Ukkonen, 2015) economic model. (In the former, members offer their skills and services for money but in a freelance capacity; in the latter, they provide or/and seek resources such as tools, transport or accommodation without the exchange of money.) In addition, many expert Q&A sites (usually based on discussion forum rather than trading structures) employ reputation systems so that questioners can judge whether or not to trust an answer, or community members can build up their own reputation as experts (see, e.g., Movshovitz-Attias et al., 2013). For participants in these latter sites, high reputation scores may also be seen as badges of achievement or honour – measures of kudos, as indicated by the name of the reputation scores in the online expert coder community StackOverflow (Movshovitz-Attias et al., 2013; Bosu et al., 2013). The inclusion of reputation systems in a digital space may thus also be seen as a form of gamification, providing motivation to contribute more and higher quality postings or items in a knowledge-sharing community.

Reputation systems can base reputation measures on data from a range of sources, processed in a range of ways (Costagliola, Fuccella and Pascuccio, 2014; Hendrikx, Bubendorfer and Chard, 2015; Vavilis, Petković and Zannone, 2014). They may employ data generated directly from a user's activities, such as how many times they visit a site, how long they spend on a site, how many transactions they complete, the ratio of completed to started transactions, how many contributions they make to a discussion, how many network ties they have, and so on. They may also draw on ratings of that user's contributions/behaviour provided by other users: for example, through "likes," up- and down-votes, ratings against particular reputation-items such as helpfulness, reliability, promptness etc., or qualitative feedback in the form of text-based reviews. When reputation systems are intended to support transactions of a trading nature (whether as part of the conventional, gig or sharing economy), an entity's reputation score might be based on customer feedback about reliability, product quality, speed of response, etc. When they are intended to support expert discussion forums or interest groups, reputation scores may be based on other users' judgments of the quality of an individual's contributions to the site, number of contributions, and so on. In either case, reputation metrics are intended to serve as proxies (Floridi, 2015) for

prior experience and personal knowledge, on the basis of which predictions of future interactions can be made.

Whichever factors are included in a reputation system, they are often used to generate a numerical measure of the user's overall behaviour/reputation/ranking within the relevant community (despite Masum and Zhang's caution that 'No person can be reduced to a single measure of "quality"' (2004, np)). Reputation "scores" may be made public to other community members, so that they can make decisions about how and with whom they interact; or they may be known only to the site administrators (or an automated process) and used to make decisions about allowing or removing privileges within, and even access to, services and users within the space. In the former case, they will also be visualized on the interface of the service (e.g., using star-ratings or badges). Scores may be aggregates or averages; the data used to calculate these scores may be unweighted or weighted according to a range of factors, including the reputation of the user submitting the ratings and the age of the rating.

Trust and reputation as forms of capital

The notion of online reputation has received substantial attention in recent years, with some authors suggesting that the increasing digitization of transactions and interactions is leading to a "reputation society" (Masum, Tovey and Zhang, 2012) and others proposing that reputation is in fact social capital in a "reputation economy" (Gandini, 2016).

As evident from the description in the previous sub-section, online reputation systems have been developed for two general purposes: as tools to help users of web-based platforms make decisions about whom to trust; and as motivators for more and higher quality participation in certain web-based activities or communities. Such systems are based on the premise that 'reputation becomes visible, tangible and, under certain conditions, even measurable … through algorithms and metrics that elaborate online reputation scores' (Gandini, 2016, 28). Some authors suggest that this kind of measurement and sharing of reputation information could radically shift the balance of power in society, as 'peer networks will confer legitimacy on people emerging from the grassroots' (Newmark, 2012, ix).

We can explore more what kind of politics may be embodied in conventional reputation system designs, and see how this politics is re-inscribed back into online communities. These systems appear to be based on individualism, the free market as the ideal (political) economy and liberalism as the essence of social relations. For example, Dellarocas, one of the most influential theorists of these type of systems, states that '[t]he new platforms may be all about harnessing crowds and communities, but in the end, those crowds and communities are

nothing but a sum of individuals' (2010, 33), an attitude that neglects the sometimes strong and complex social, political and cultural mechanisms that couple individuals and result in emergent, collective behaviour. Similarly, Picci explicitly positions his arguments as rooted in rational choice theory, positing that 'individual social actors act to advance their self-interest' (2007, np) and claiming that reputation systems 'allow selection forces to weed out the least fit' (ibid.). Gandini's claim that reputation is social capital rests on the belief that it is 'an eminently economic concept' (2016, 30) that 'functions as a form of currency enabling trust among strangers' (ibid., 32) and that is 'a resource that may be mobilized and that remains with the individual … as a capital that is invested, traded or managed … as an investment in social relations with expected economic return' (ibid., 36), a view that combines individualism with a clear commoditization of reputation.

One might ask whether reputation systems as currently developed are more likely to reinforce self-interested individualism, since they are grounded in a methodological individualism which sees social groups as aggregations of individuals, each aiming at self-satisficing egoistic behaviour, under the often not explicit idea that this is done for the benefit of the whole group. As Adam Smith famously stated, 'It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own self-interest' (Smith 1838, 7).

Paradoxically, some aspects of this kind of thinking appear to have been taken to extremes in the (nominally socialist) Chinese government's recent experiments with and planned national roll-out of a combined social and personal-financial credit system (Botsman, 2017; Hvistendahl, 2017). In these, conventional measures of financial credit-worthiness are being combined with behavioral metrics including shopping habits, friendship networks and the sharing of 'positive energy' (Botsman, 2017, n.p.) online to produce a single trustworthiness or social credit score.

However, if reputation is viewed as a currency or marketable commodity, resulting from action of self-interested individuals, then it may be exposed to the same risks and problems that arise in financial markets, including questions related to ownership, fairness and control. Indeed, the global financial crisis has led to renewed questions as to the validity of competitive, free-market models and suggestions that approaches that recognize the strong coupling of different components in the system should be developed (Helbing and Kirman, 2013). Within the economics of reputation and trust that reputation systems are helping to create, there is already evidence for the kind of problems that arise when financial gain can be made by adopting certain behaviours, including the use of multiple or fake personas to acquire undeserved reputational credit/value, exaggerated reciprocity, individualised reciprocity resulting in clique formation, retaliation and clique-based attacks.

For example, there have been several studies of eBay's reputation system and the impact it has on participation in the system (see, for example, Cabral and Hortaçsu, 2010; Dellarocas, Fan and Wood, 2004; Houser and Wooders, 2006; Hui et al., 2014; Resnick et al., 2000; Resnick and Zeckhauser, 2002; Resnick, Zeckhauser and Swanson, 2006). The main findings of this research suggest that feedback contributions on eBay are not strongly driven by altruism (Dellarocas, Fan and Wood, 2004), and instead are more strongly driven by an expectation of reciprocity. Resnick et al. (2000) suggest that users not only reciprocate but also retaliate. They also suggest that users of the site become less likely to participate in the feedback process once they have accumulated experience (and "respectable" reputation scores). This observation is consistent with the suggestion that users' participation in the feedback process is not strongly driven by altruism, as it may imply that once users have built up a secure reputation, they no longer feel the need to elicit ratings from others by providing ratings themselves. Resnick, Zeckhauser and Swanson (2006) showed that reputation is, however, important, and that the same items, sold by the same seller under two different identities, attracted an 8% lower price when sold through a newly-established identity with low reputation, as compared to the seller's "real" (well-established, high reputation) identity. Cabral and Hortaçsu (2010) studied the impact of negative feedback, finding that the first time a seller receives negative ratings/feedback has a more significant impact on his/her sales than subsequent negative ratings, but also that once a seller receives a negative rating, they are much more likely to receive more. They also found that sellers with low reputations are more likely to exit the system. Reputation systems, then, may not only enact a market-based, accumulative and acquisitive capitalist paradigm in whatever digital spaces they are employed – but also risk introducing behaviours that are detrimental to the health and sustainability of those spaces.

While a market-based view of reputation may be acceptable and even desirable in a business-focused trading site, it may undermine the intentions and purported values of other types of site. For example, although expert Q&A sites could be viewed as markets for knowledge, with competition among providers to supply the best quality knowledge, they are not real markets in the sense that there is no obvious cost to those seeking (and presumably consuming) the knowledge on offer and knowledge-providers retain the knowledge that they give out. Instead, a closer comparison might be with school or university learning environments, or sites of professional learning, where knowledge, once created, can be distributed and shared at no loss to any party to the sharing transaction. Rather than the power dynamics of a market, governed by competition and differentiation in wealth, expert Q&A sites are more likely to be characterised by dynamics of pride and commitment to the advancement and promotion of particular forms of knowledge and skill. In this kind of context, reputation might still take the form

of something to be accumulated, but not so much at the expense of other actors competing for the same resources and capital.

Indeed, it seems that some reputation systems used in expert Q&A sites, such as that incorporated in StackOverflow, reflect some of these differences. StackOverflow is a Q&A site where programmers can ask and answer questions relating to technical issues, and it has probably the best-known and most elaborately-developed reputation system in a Q&A site (Bosu et al., 2013; Hart & Sarma, 2014; Movshovitz-Attias et al., 2013). In StackOverflow's reputation system, users can up-vote and down-vote questions and answers provided by others, actions that not only contribute to reputation-building but also move questions up and down in terms of the order of display, and so make them more or less visible. Users gain and lose reputation in a variety of ways, including through the up- and down-voting of questions; there are many more ways to gain reputation than to lose it. The most significant way to lose reputation points involuntarily is if a post is flagged as offensive or spam; points can also be "spent" (transferred to another user) in a bounty system for those seeking quick and accurate answers to complex or esoteric questions.

In StackOverflow, points are converted into privileges: for example once a user has 15 points, they can vote up a question or answer; once they have, 20, they can talk in a chat; once they have 125, they can vote down questions or answers; and so on. At 1500 points users are allowed to add new tags to the site (questions are tagged as corresponding to particular topic areas, such as SQL or java); at 200, users can edit other users' questions and answers. At 10000 points users gain moderation rights; at 25000, they have access to the site's analytics. Thus there are incentives to build one's reputation that go beyond the acquisition of reputation for its own sake, or in order to gain the trust of other users.

However, this reputation system is still grounded in an individualistic, accumulative and competitive paradigm, which may have negative consequences for the diffusion of professional knowledge. For example, Movshovitz-Attias et al. (2013) found that while the majority of questions on the site were posted by novice users with low reputations, on average higher reputation users ask more questions than lower reputation users, simply because they contribute more often to the site. StackOverflow has also been found to (unintentionally) exclude or discourage female participants (Vasilescu et al., 2012), which has been partially attributed to the reward system. Thus StackOverflow's reputation system, while already incorporating some features that better reflect the aims of expert-community knowledge sharing and creation, may still to some extent undermine its aims and ethos.

Moving away from the traditional spaces in which reputation systems were developed, systems based on the same principles are also increasingly being incorporated into digital spaces that set out to bypass commercial transactions and achieve cooperative or mutualistic transactions. For example, the

accommodation-arranging platform Couchsurfing.com positions itself as setting out to achieve a social good: 'We envision a world made better by travel and travel made richer by connection. Couchsurfers share their lives with the people they encounter, fostering cultural exchange and mutual respect' (Couchsurfing, 2016). Couchsurfing.com relies on substantial levels of trust between strangers, as users share their homes with each other without any monetary exchange.

Lauterbach (2009) showed that there are significant levels of both direct and generalized reciprocity within the overall couchsurfing community. Couchsurfing's reputation system is based on systems used in conventional economic trading sites but has two unusual features. The first is in its use of friendship ties. Users can identify the type of relationship they have with other users, choosing from: Haven't met yet, Acquaintance, CouchSurfing friend, Friend, Good friend, Close friend, and Best friend. Couchsurfers who have hosted or stayed with other members are permitted to submit private feedback (to Couchsurfing) and public references for 14 days after a stay. Members must have a couch request with the "Yes" "Maybe" or "Confirmed" status in order to leave a Surf/Host reference. Other members may create references under the "Other" or "Friend" reference designations (as opposed to "Surf" or "Host"). Users' publicly visible reputation information is simply the number of references they have been given, and the number of those that are positive and have been confirmed (i.e., the user has confirmed the host/guest exchange). Other users can see free text references left by former guests/hosts.

It seems that this qualification of feedback based on the nature of relationships may be an attempt to mitigate the pure free-market nature of a conventional ratings-based system, in which every opinion counts the same, no matter how well-informed. However, Couchsurfing has a second unusual feature, which may be an example of how a reputation system can undermine the stated ethos of a platform. After some years of operating with the system described above, Couchsurfing.com introduced an additional "vouching" system, to allow some users to increase their reputation levels. This very restrictive system allows users to vouch for other users only if they have received three or more "vouches" themselves, effectively restricting vouching to an elite core: in, 2009, only 6.8% of members were able to vouch (Lauterbach et al., 2009). Thus the use of a conventional reputation system – albeit with some modifications – may in fact represent a misalignment with Couchsurfing's stated values of opening up sociocultural spaces and recognizing the contribution to this endeavour made by anyone who is willing to open up their home to a stranger.

Reputation systems in supportive groups

Finally, we consider another context in which reputation systems sometimes appear: that of supportive discussion forum sites. On the surface, these may seem to be similar to the expert Q&A forums considered in the previous section – discussion boards to which users can post questions that they are seeking answers to from community members with similar interests and pre-occupations. However, there are some fundamental differences to the aims and use of such sites.

First, expert Q&A sites such as StackOverflow are professional/technical interest community sites. Their users tend to be people who already have some degree of technical expertise (and therefore knowledge and cultural capital) and are seeking more. Several things follow from this:

- Questions on sites such as StackOverflow are technical in nature, seeking specific solutions to specific coding, implementation or operating system problems.
- They are likely to have answers which can be clearly judged as right, wrong or useful, depending on whether these answers lead to solutions that the questioner (and other members of the community) can implement. Where there may be more than one correct answer/workable solution, some will be more efficient or simpler to implement than others, and can be judged better on those grounds.
- Because users have some existing level of expertise, their judgment as to the value of answers might be expected to be reasonably reliable.
- Users are often enthusiasts for their work, and so are discussing something they enjoy doing. They are also proud of their expertise and are keen to provide answers if they have them.
- Questions (and answers) on sites such as StackOverflow are almost never personal or emotional; they are rarely likely to be of dramatic importance to the questioner's life or living conditions.

In contrast, the stories that may be told, and the advice and guidance sought and given on community support discussion forums, for example relating to health issues or financial problems, may relate to issues which are of substantial personal significance to users. There are many such communities, some facilitated by charities, health systems, or other authoritative figures or structures, but others having a more grass roots or community-driven character (see, for example, Barak, Boniel-Nissim and Suler, 2008; Chung, 2013). Many are associated with particular illnesses, whether physical or mental (see, for example, Eysenbach et al., 2004; Griffiths et al., 2009; Wright and Bell, 2003). Some discussion forums and mailing lists have developed to provide a safe space for minority groups such as the LGBTQI community (Mehra, Merkel, and Bishop, 2004). Others provide

discussion forums for larger groups, a good example being the parenting forum Mumsnet (Pedersen and Smithson, 2013).

While reputation scores are not yet widespread among such sites, they have found their way into some of them. For example, the set of discussion forums hosted by the platform supportgroups.com, which includes forums dedicated to financial problems, homelessness, anxiety, and other mental and physical health issues, has a linked reputation system so that users can acquire points for contributing across the forums they contribute to. The use of reputation systems in digital spaces that might attract vulnerable, socially-isolated or excluded people may be of particular concern. There is a well-established correlation between poverty/financial uncertainty and depression/anxiety (see, for example, Belle Doucet, 2003; Galea et al., 2007; Murali and Oyebode, 2004; Murphy and Athanasou, 1999; Paul and Moser, 2009; Vinokur, Price and Kaplan, 1996), which is not surprising given the potential for experiences of precariousness, social exclusion and social isolation, and feelings of inadequacy and decreasing hope. While people may well have positive stories and strategies to share, they may often be describing how they overcame a difficulty that was quite an unpleasant experience. Similarly, those visiting the site in order to find help and advice may well be seeking the emotional, as well as practical, support that can be provided by a community of people experiencing similar difficulties. We might speculate on the potential impact of inscribing a capitalist-oriented reputation system into such an environment. While on the one hand users might value trust creation processes as they decide who to interact with and seek support from, it is easy to imagine situations in which reputation scores might have negative impacts, for example on users' self-esteem. Given the value-system inherent in the design of conventional reputation systems, reputation may represent another form of capital in which users can find themselves to be poor, and so another benchmark of failure, inadequacy and inequity.

Toward the Commonfare.net platform: Trust, reputation and shared values

We are involved in a Collective Awareness Platform for Social Innovation project which is currently building a mobile and web platform called commonfare.net. The goal of this digital space is to foster a new form of bottom-up, community welfare, called commonfare (Fumagalli and Lucarelli, 2015). The project hopes to help alleviate the consequences of the 2008 global financial crisis in Europe and the failure of state-based approaches to welfare to improve the living conditions of those at risk of or experiencing precarity and social exclusion. The project (Botto and Teli, 2017) adopts a participatory design approach and the

original intention was to include a fairly conventional reputation system based on user ratings. Evidence from both the analysis of existing reputation systems and preliminary results from working with community members contributing to the design process strongly suggested that this might undermine the values and ethos of the site. Moreover it became clear that having solutions promoting this ethos is far more important to them than having access to individualistic reputation metrics.

In the following, we provide a brief description of the commonfare concept and of the Commonfare.net platform and initially suggest that in this platform genuine trust is unlikely to be facilitated by conventional reputation systems based on an individualistic, acquisitive market paradigm. We then present a set of points which will guide our future work designing a reputation system for the platform.

The Commonfare.net project is dedicated to the development of a mobile-first, web-based platform through which to improve the lives of people experiencing economic and social exclusion or precarity in Europe, through the promotion and facilitation of commonfare, an alternative approach to social welfare (Fumagalli and Lucarelli, 2015). A commonfare approach is grounded in the recognition that the social and economic are not separate spheres, but instead are inextricably and intricately connected. Commonfare is:

- bottom-up
- socially equitable
- cooperative

Key features of a commonfare approach include proper management of the common (both physical commons such as water, land and so on and immaterial commons such as knowledge and affect); an unconditional, basic income for all; and the development of complementary financial circuits. Any digital space that attempts to encourage a commonfare approach must therefore have design processes and features that are consistent with its core principles of bottom-up, socially equitable and cooperative action.

Participants in the design process include individuals and community members representing unemployed and precarious young people (Croatia), precarious workers (Italy and the Netherlands), non-Western migrants (the Netherlands) and benefit recipients (the Netherlands). Commonfare.net is intended to be a collective awareness platform that facilitates the development of commonfare approaches to social welfare among its users. Commonfare.net will offer a complementary channel for the provision of social welfare, allowing users to take better advantage of State offerings as well as to create their own alternative support and empowerment mechanisms. (For more detail, see Botto and Teli (2017).)

As is evident from the above, the philosophy behind commonfare.net is one that values the provision of mutual support and activities that lead to communal benefit rather than self-interested individualism. To an extent, it is more similar to

the case of community support groups than to those of an e-commerce website or a technical Q&A site. This means that cooperation and collaborative action will be essential to the development of a strong and valuable commonfare. To achieve this, the platform will offer various ways for people to interact; commonfare.net will be a digital space that enables information provision, inspiration/motivation and community building through story-telling, and cooperative/mutually beneficial actions. This last might include exchanges of goods, skills, knowledge or services in a sharing economy, group creation/cooperation, and forums for supportive Q&A. Trust will be important in facilitating and encouraging all of these interactions and some kind of trust facilitation or reputation system is needed; however our analysis of existing reputation systems and initial results from empirical research show the need for a novel approach, which is not based on individualistic principles. Rather, what is needed is an approach that reinforces relationality and community cooperation. Our preliminary proposals for the reputation system for the commonfare.net platform are that it should be based on the following explicitly political, values-driven principles:

- Rejection of individualism in the face of a widespread desire to feel part of a community with shared values, especially one which cooperates and acts in a mutualistic way to increase the quality of life of the many.
- Valuing self-determination, autonomy, and freedom from conditionalities such as those imposed by the State, non-governmental authorities such as NGOs, and capitalist entities such as employers and big businesses, when they provide welfare support and help. The reproduction of trust models often associated with these entities will not necessarily facilitate the achievements of the project goals.
- Acknowledgement that building (and warranting) trust in the platform will be as or even more important than trust in the individuals a user might potentially interact with.
- Recognition of the danger of creating, and a desire to avoid, new forms of rather fragmented solidarity that may result in overly-segregated group formation and hence obstacles to the diffusion of knowledge and good practice. This may necessitate the public availability and active sharing of information that shows the different groups' levels of contribution and commitment to the shared goal of building the commonfare.

These principles, which have emerged strongly and consistently in our participatory research activities, appear to be fundamentally at odds with the methodological individualism of a competitive, acquisitive market in reputation as a form of capital. They thus direct us to re-think reputation and trust facilitation in our developing digital space.

Acknowledgments

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