

## ARTICLE

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## VALUE CREATION IN HETEROGENEOUS COLLABORATIVE NETWORKS

*Criação de valor em redes colaborativas heterogêneas***Daiane Scaraboto**

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### ABSTRACT

Consumer research has examined the process of value creation in brand communities and similar collectives. Nevertheless, extant research falls short of explaining value creation that happens in heterogeneous collaborative networks, where a variety of participants, including consumers, entrepreneurs, and companies interact. Drawing from data collected through a blended ethnography and netnography of the collaborative network of geocaching, this study examines value creation in heterogeneous collaborative networks. Findings suggest that value creation initiates with value propositions negotiated by participants in use, across contexts, through time, and within relationships. These findings challenge arguments that co-created value is achieved by social consensus among beneficiaries, rather indicating that ongoing negotiation among participants may replace social consensus as the ultimate determinant of value. This study provides insight on the formation of cultures of co-creation, and explains how different moments in the process of collaborative value creation can be leveraged by marketers, entrepreneurs, and consumers who participate in value-creating networks.

**KEYWORDS:** Value creation, collaborative networks, negotiation, netnography, co-creation.

### RESUMO

A pesquisa sobre o consumidor tem examinado o processo de criação de valor em comunidades de marca e coletivos similares. Não obstante, a pesquisa existente é insuficiente para explicar a criação de valor que acontece em redes colaborativas heterogêneas, onde uma variedade de participantes, incluindo consumidores, empreendedores e empresas interagem. Com base em dados coletados por meio de uma combinação de etnografia e netnografia em uma rede de colaboração de *geocaching*, este estudo examina a criação de valor em redes colaborativas heterogêneas. Os resultados sugerem que a criação de valor se inicia com proposições de valor negociadas pelos participantes no uso, através de contextos, ao longo do tempo e dentro dos relacionamentos. Essas descobertas desafiam argumentos de que o valor cocriado é alcançado por consenso social entre os beneficiários, indicando que o decorrer da negociação entre os participantes pode substituir o consenso social como determinante final do valor. Este estudo proporciona entendimento sobre a formação de culturas de cocriação e explica como diferentes momentos no processo de criação de valor colaborativo podem ser alavancados por gestores de marketing, empreendedores e consumidores que participam de redes de criação de valor.

**PALAVRAS-CHAVE:** Criação de valor, Redes colaborativas, negociação, netnografia, cocriação.

## 1 Introduction

In alignment with a tradition of research on consumer culture (e.g. Muñiz and O'Guinn 2001; Kozinets 2001, 2007; McAlexander, Schouten and Koenig 2002), companies have recognized the creative potential of collectives and explored the benefits of engaging consumers in value creation processes. Enabled by social technologies and platform-based business models, consumers are now better equipped than ever to not only answer companies' collaboration calls, but also to coordinate efforts among themselves to create, share, and exchange value independently.

Researchers have made progress to uncover the process of value creation in collaborative contexts through studies of brand communities and similar collectives (e.g. Thomas, Price, and Schau 2012). This research stream has identified certain practices (Schau, Muniz and Arnold 2009) and structures (Kozinets, Hemetsberger, and Schau 2008; Seraj 2012; Stephen and Toubia 2010) that foster value creation within collectives. Nevertheless, critical gaps in our knowledge of collaborative value creation still exist. First, this literature has focused on brand-centered communities mostly populated by consumers. Consequently, it has left uncovered factors associated with the participation of other actors which may influence the process of collaborative value creation. I propose that collaborative value creation can be better understood by looking at heterogeneous collaborative networks, where a variety of participants, including consumers, entrepreneurs, and multiple companies who vary in resources, roles, and motivation interact. With the recent popularization of the so called "sharing economy" (Sundararajan 2016; Chase 2015), many such collaborative networks have flourished and include businesses built upon collaborative platforms such as Airbnb and Uber, as well as hybrid economies for collaboration such as Couchsurfing, Etsy, and Geocaching. Only recently, these heterogeneous collaborative networks have started to be examined for their potential to create value for its participants (Figueiredo and Scaraboto, 2016; Scaraboto 2015).

The second major gap in this literature pertains to our understanding of the nature of collaboratively created value. Proponents of the Service Dominant Logic (SDL) observe that co-created value is "always uniquely and phenomenologically determined by the beneficiary," the consumer (Vargo and Lusch 2008, 7). Other scholars have posited that, in collective contexts, determining value requires a certain degree of social consensus among participants about what the value of an object or experience is (e.g. Edvardsson, Tronvoll, and Gruber 2011; Deighton and Grayson 1995). In a recent study, Figueiredo and Scaraboto (2016) examine loosely organized, dynamic, and heterogeneous networks and explain value creation in them through a processual model that highlights object circulation and the organic integration of value-creating actions enacted by dispersed participants. Their study refers to the "alignments" made by networked participants to determine what is valuable for each participant individually as well as for the entire network, but does not point to the need for consensus among participants in order for the value-creation process to happen. In sum, empirical evidence is scarce and we do not know whether consensus is necessary to determine value in collaborative contexts, or how it is achieved.

This study addresses these gaps through an ethnographic investigation of a heterogeneous collaborative network guided by the following research question: *How is value determined in heterogeneous collaborative networks?*

Given the question it addresses and its deployment of ethnographic research, this study offers three distinctive contributions to the marketing literature. First, it sheds much needed light on the process of collaborative value creation. As identified here, this process initiates with propositions of value, and evolves as these propositions are negotiated in use, across contexts, through time, and within relationships. This study's findings challenge

conceptual arguments that co-created value is achieved by social consensus among the beneficiaries, indicating otherwise that ongoing negotiation among participants may replace social consensus as the ultimate determinant of value.

Second, in integrating this study's findings with those from prior studies, I offer a perspective on collaborative value creation that is more nuanced, dynamic, and complex than that which is portrayed in extant literature. As noted by Thomas et al. (2012), heterogeneity operates as a destabilizing force in consumer collectives, and requires participants to engage in work to align their interests, understandings, and practices in order to achieve common goals and preserve community continuity. Extending this understanding to the realm of value creation, I demonstrate that in complex, heterogeneous networks, theorizations of co-creation as a seamless and straightforward process are not sufficient to explain how value is determined.

Finally, by sharing the results of a long-term qualitative investigation that covers value creation developed in a network since its origins, this study provides insight on how cultures of co-creation come into being, opening avenues for future research to explore the particular cultural aspects of heterogeneous collaborative networks that have implication for their development as sites of value creation. In the following sections, I review current research on collaborative networks, describe the research methods employed and the context studied in this investigation, summarize the findings, and conclude by noting the contribution of this research for marketing theory and practice.

## 2 Collaborative Networks

Collaborative networks (or value-creating networks) are sites of interdependent and co-developed social and economic activity enabled by social media where networked participants depend on each other to create, produce, and exchange value. These networks thus differ from “networked markets” or “value networks” as defined in Economics, the main characteristic of the latter being the presence of individual networks exogenous to the market or of joint investments by trading partners (White 2002). Nevertheless, these concepts share an underlying principle: the social embeddedness of economic transactions (Polanyi 1944; Granovetter 1985). With participants who interact in multiple social platforms, value-creating networks highlight the relevance of social ties for shaping market dynamics. Adopting a cultural theory approach, this research acknowledges those ties without considering them a definitive influence on market action. Here, markets are seen as an ongoing process that is continuously formulated in the interaction between participants. Social and market order, then, are perceived as formed by and embedded in “collective cognitive and symbolic structures” (Reckwitz 2002, 245) that shape their participants, but are also shaped by them.

Collaborative networks as defined here also differ from brand and consumption communities as studied by consumer culture researchers (e.g. Schau et al. 2009). Extant conceptualizations of brand and consumption communities usually do not consider marketers and companies as members of these communities, and the activities of consumers in such communities are centered on specific brands or products. Most collaborative networks, on the other hand, initially form around an activity or experience and, at that point, no established brand or company is present. The networks then evolve to incorporate multiple companies and entrepreneurs alongside a community of consumers, becoming similar to the heterogeneous communities examined by Thomas et al. (2012). That is why I refer to them here as *heterogeneous collaborative networks*. In doing so, I refer to both individuals and organizations as participants; thereby avoiding the problematic characterization of some as producers and others as consumers (Humphreys and Grayson 2008), for all participants regularly engage in activities of value creation and exchange. Depending on the stage of

development of a collaborative network, it may also include other types of participants such as governmental organizations, the media and, in some cases, objects (Latour 2005).

### **Determining value in collaborative contexts**

As seen from the SDL perspective, value is contextual, experiential, construed by multiple actors (that is, co-created), meaning-laden, and dynamic, being always embedded in social relationships (Lusch and Vargo 2006; Vargo and Lusch 2004). The SDL highlights that value-creation processes occur when consumers use a product or service, not when the output is manufactured. In this sense, companies can only make value propositions – and the realization (i.e. creation) of that value happens in the combination of the firm's value proposition and consumers' use. In a revision of the SDL propositions, Vargo and Lush (2008a, 2008b) observe that “the venue of value creation is the value configurations — economic and social actors within networks interacting and exchanging across and through networks. Consequently, value creation takes place within and between systems at various levels of aggregation.” Accordingly, while attempting to disentangle the concept of value in co-creation contexts from the notion of meaning frequently employed by Consumer Culture Theory (CCT) scholars, Peñaloza and Mish (2011) observe: “[c]onsistent with CCT perspectives, we view markets as cultural clearinghouses in which multiple actors engage in valuation and signification processes within and across specific domains that in turn stabilize and destabilize their relations.”

Kozinets et al. (2008) have considered collective innovation orientation and concentration in classifying online creative consumer communities, and observed that “[w]hether an online community is organized by a company for commercial gain or not does indeed seem to be another important and useful distinguishing factor,” also suggesting that communities could be “either self-organized and nonprofit or corporately planned and profit generating, or even hybrids of these forms.” (345). In SDL, the roles of producers and consumers are not distinct, meaning that value is always co-created, jointly and reciprocally, in interactions among providers and beneficiaries through the integration of resources and application of competences. While this stream of research has contributed much to our understanding of value creation in collaborative contexts, it does not address issues of how value is collaboratively created when participants in a collective likely disagree on what is valuable, or on where to focus their value-creating efforts.

### **Dynamics of collaborative value creation**

Studies focusing on value-creating interactions in collectives or networks can be grouped in three categories, depending on their perspective on how consumers and companies interact to determine value: Collaboration, Confrontation, and Compromise. The first perspective, Collaboration, refers to positive and productive sums of forces between participants to create value. It comprises phenomena such as crowdsourcing (Brabham 2010) and collective innovation (Kozinets et al. 2008). Here, consumers and companies interact, most frequently online, to solve problems and produce innovation and marketing insight (Bonsu and Darmody 2008), agreeing on the value of the desired outcome. As explained by Hamilton and Hewer (2010, 275), “while the value added of most individual contributions may be low, the aggregate value and effects of collective contribution will be high, and, in this way, the consumption ... becomes inseparable from production.” In most cases, companies do not offer economic rewards to consumers who collaborate in value creation. Even then, this perspective explains, consumers willingly collaborate with companies because they derive other benefits from participating (Arvidsson 2008), and because they see value on the outcome of collaboration.

The second group of studies focuses on Confrontation between value-creating participants. It includes studies of consumer activism (Kozinets and Handelman 2004; Kozinets 2002a; Peñaloza and Price 1993), resistance (Giesler 2006, 2008), market co-optation of subcultures of consumption and movements of counter co-optation (Thompson and Coskuner-Balli 2007). In this perspective, consumers confront companies and challenge extant market practices that are not aligned with consumers' preferences, beliefs, or understandings. Here, the value consumers envision is different from that offered by companies. Therefore, consumers collectively work to develop alternative tastes, practices, and products that are more valuable to them than those being offered by companies on the mainstream market (Dolbec and Fischer 2015). Attempts by marketers to capitalize on these counter-cultural sources of value frequently aggravate confrontation. Occasionally, however, marketers' reaction to consumer confrontation fosters value creation by motivating collectives to engage in additional efforts to escape, resist, or change the market.

Finally, the third perspective on value creation within collectives focuses on Compromise: a point somewhere in the middle of a continuum marked at its ends by Collaboration and Confrontation. Consumer researchers have proposed that "mutual adaptation between consumers and companies can be regarded as a form of value creation" (Cova and Dallı 2009, 316) and suggested that consumers and companies make attempts to adjust to each other as they interact in creating and determining value (Chan, Yim, and Lam 2010). In addition, most forms of value-creating interaction between consumers and companies do not consist in pure confrontation or collaboration. Although they may collaborate with companies most of the time, sometimes consumers will engage in power disputes over value (Cova and Pace 2006). Conversely, activist consumers, who oppose the market most of the time, will sometimes employ non-confrontational strategies and attempt to engage marketers in their cause (Scaraboto and Fischer, 2013). Nevertheless, studies looking at the middle ground in value-creating interactions between consumers and companies are sparse. An exception is Peñaloza and Mish (2011) work on the nature and process of value co-creation in triple bottom line (TBL) firms. The authors found that TBL companies negotiate value with "consumers, suppliers, policymakers, competitors, and citizens in the form of cosmological beliefs, standards, and individual judgments and interpretations" (Peñaloza and Mish 2011, 27). Finding that meanings are not equally valued by all participants in a market, the authors call for further work to examine "disjunctions of signification and valuation" (27) across market actors and domains.

### 3 Research Methods and Context

In my endeavor to understand the dynamics of value creation in heterogeneous collaborative networks, I engaged in a 3-year (2008-2011) online and offline qualitative study of the value-creating network of geocaching. Since its creation by a community of GPS enthusiasts in 2000, Geocaching has evolved to become a complex network of participants who engage in value creation and exchange activities. The network is centered on the hobby of Geocaching, a high-tech treasure hunt game with online and offline components. The main website concentrating information essential to the hobby is a commercial enterprise (owned by Groundspeak Inc.) to which hundreds of volunteer players willingly contribute, and thousands of other participants subscribe.

A large number of open-source developments unfold on this website and in social media platforms linked to it. In Geocaching, it is the responsibility of players to create and maintain hidden treasures called caches, which are the essential component of the hobby. The guidelines for placement and maintenance of these caches, however, are developed in collaboration with Groundspeak's commercial business. Local and regional communities of players organize meetings and events, most of them free to participants and sponsored by Groundspeak or other companies. Several players, while devoting time and effort to



geocaching, have become entrepreneurs or developed professional careers out of the hobby. These players have created online stores for Geocaching gear and accessories, produced podcasts and movies, published books and magazines, and created travel packages focusing on Geocaching. Animated by these value-creating activities, the network of Geocaching is a rich context in which to study the lived complexity of the commercial intertwining with the communal and the reflections of this interplay on the nature of value and its multiple forms of exchange.

During the course of this research, I engaged in several online and offline activities related to geocaching. I regularly observed and participated in geocaching hunts, pub meet-and-greet nights, and weekend-long local and international events. I frequently engaged in casual conversations with geocachers during these events as well as on discussion forums, social media groups and personal accounts, and through e-mail exchanges.

**Table 1 – In depth interviews**

Informant	Gender	Role	Location	Interview mode
res2100*	Male	Geocacher, expert	Georgetown, ON, Canada	Face-to-face, video recorded
Grizzly	Male	Geocacher, entrepreneur	Halton Hills, ON, Canada	Face-to-face, audio recorded
Geos.o.s.	Female	Geocacher	Mississauga, ON, Canada	Phone, audio recorded
Bryan Roth**	Male	Groundspeak co-founder and partner	Seattle, WA, USA	Skype, audio recorded
Joan Mose	Female	Groundspeak Volunteer Program Manager	Seattle, WA, USA	Skype, audio recorded
Annie Love*	Female	Groundspeak Product Development Manager	Seattle, WA, USA	Skype, audio recorded
Double Double	Male	Geocacher	Burlington, ON, Canada	Face-to-face, video recorded
Free_World	Female	Geocacher	Burlington, ON, Canada	Face-to-face, video recorded
Mr. Montgomery	Male	Former member of Groundspeak volunteer team	Irondale, AL, USA	E-mail
ON_Trekker	Male	Geocacher	Guelph, ON, Canada	Face-to-face, voice recorded
KhloeS	Female	Geocacher, newbie	Montreal, QC, Canada	Face-to-face, voice recorded

\*Informants' real caching names \*\*Informant's real name. All other names have been replaced by pseudonyms.

Many of these conversations or informal interviews (Fetterman 2012) were captured in detail in my field notes. In addition to informal interviews, I conducted 11 in-depth interviews with participants in the value-creating network of geocaching (Table 1) to understand their perspectives on the activity, their relationship to other participants, and to obtain information about specific aspects of the network.

As a participant in this value-creating network, I also practiced the hobby, purchased or traded several items with other participants, shared food, space, rides, information, and countless geocaching stories with my informants. I also collected documents and media texts related to geocaching since its origins.

The final dataset comprised a large volume of data in several formats: field notes (86 single-spaced pages), downloaded text (3,683 single-spaced pages), video (7.2 GB recorded and 28 YouTube videos), pictures (382), audio files (26 podcasts), and artifacts. I coded the data looking for emergent patterns of similarities and contrasting themes. I further refined these preliminary codes and organized them in thematic groups. I used different forms of data as a triangulation tool, and based my interpretation of the phenomenon on several iterative movements between theorization and close readings of the data.

The combination of ethnography and netnography proved invaluable in helping me move from low-level description of the phenomenon to theoretical explanation. A blended ethnography/netnography, as described by Kozinets (2010, 65) is a combination of approaches to data collection, “including data gathered in face-to-face as well as online interaction.” The combination of online and offline data was necessary in this research to capture a complete picture of the network of geocaching and its activities of value creation and exchange.

## 4 Findings

Data analysis reveals that value, in heterogeneous collaborative networks, is negotiated by participants in use, and across contexts, time, segments, and relationships. I refer to the value outcome of this set of negotiations as “culturally negotiated value”. I also identify the four pillars sustaining the creation of culturally negotiated value in heterogeneous collaborative networks: values, narratives, practices, and structures. This set of pillars is essential to the emergence and endurance of value-creating networks, consisting in the core components of a culture of co-creation. These findings are detailed in the following sections.

### Value is negotiated across context

Data analysis reveals that participants in the geocaching network engage in negotiations to import and adapt value-assessment criteria from other contexts they participate in. These value-assessment criteria are then used to evaluate products within the network. Prior research has established that what is considered valuable depends on the social context (or culture) in which evaluative judgments are made (e.g. Holbrook 1994, 1996; Belk, Wallendorf, and Sherry Jr. 1989). Nevertheless, the emergence of value-creating networks raises new questions about the contextual nature of value (e.g. how are valuation criteria selected in new contexts? Do value appraisals change to follow changes in contexts?). These questions suggest that further investigation of the contextual aspects of value creation is warranted.

Negotiations of value across contexts are essentially textual, given that most of these negotiations happen on and around online platforms. For this reason, comparative textual artifacts, particularly metaphors and analogies, are participants' tools of choice to negotiate. Narratives are also instrumental in aiding participants to negotiate the import and adaptation of valuation criteria from other contexts to their network.

The following discussion among participants in the value-creating network of geocaching is an example of the negotiation of value across contexts. Concerned about the “degradation of geocaching” he perceives as inevitable if participants keep ignoring that some players log “false finds” online, player OTH posts to the geocaching forums:

I've been around long enough to notice an increase in what I'll refer to as 'false logs'. I am talking about cachers logging finds when they didn't even come anywhere close to the cache. ... I've seen these false logs, and I've participated in many forum discussions on these issues, and while there are many people that object to the practice of 'false logging', there are also many with the opinion that “if it's not directly affecting you, then you shouldn't worry about what other people do.” I personally think that this latter attitude, as it relates to false logs, will ultimately have a very negative impact on geocaching. ... False logs degrade the game/hobby/sport/activity of geocaching, and what it means to be a geocacher. I am proud to be a geocacher. I fear that one day most geocaching will be done without leaving the computer, and we'll have allowed it to come to this by 'looking the other

way' on false logs. I won't be such a proud geocacher then. (OTH, January 29 2008, 02:16 PM)

At stake in this negotiation is the value of one particular guideline for playing geocaching which affirms that cache owners should delete from a cache profile page all logs that appear to be false. Deleting false logs allows cache owners to cancel the points earned by players for false finds. More generally, what is being negotiated here is the lack of guidelines reinforcement (which player OTH perceives as value-destructive) spurring the practice of logging false-finds. In starting the discussion thread, OTH points to a division of opinions evidenced in "many forum discussion on these issues." Clearly, the current status of the practice is at odds with his individual valuation of it and he feels the need to rekindle a discussion on the value of guidelines reinforcement. In order to do so, he draws an analogy comparing false logs in geocaching to unconventional moves in golf:

A good analogy would be the game/hobby/sport/activity of golf. Could you imagine a person who routinely played golf by merely throwing or kicking the ball around the course? Do you think the other golfers in the foursome would allow this? Do you think the club would allow this? I guarantee nobody would be saying, "It's not hurting anyone so don't worry about it". One might say that golf is a bad analogy because golf is a competition, and geocaching is not. Well I'm not talking about the PGA or a golf tournament. I'm talking about how most people are involved with golf. Although golfers may play a round with other golfers, it's primarily about how that golfer plays related to how they normally play. They are competing with themselves. However this still does not allow them to change the rules so much that they bastardize the game. Sure golfers might place friendly wagers on their game, but there is just as much friendly competition in geocaching. I am not proposing that everyone must adhere to a very strict set of rules, but false logs are getting a little ridiculous. (OTH, January 29 2008, 02:16 PM)

Another participant, Jaguar, questions OTH's analogy and offers an alternative one:

You gave an example using golf, but the fact is that MANY golfers in fact DO play by their own standards when they're just by themselves having fun and not in a tournament. Mulligans, do overs, unlimited balls in the lake until they get a good one, etc. But as you pointed out nobody thinks of golf generally as a cheater's game. Monopoly is another good example of a game played between friends and different rules are often used. The monopoly game I play with my family at my house doesn't keep you from playing strictly by the MAONA Rules (Monopoly Association of North America), and we'll both have fun doing it. (Jaguar, January 29 2008, 06:20 PM)

Other participants soon join the discussion about guideline reinforcement, mostly aiming to better understand and define the boundaries of the value-creating network where the value of guidelines reinforcement is being assessed. The comparison of geocaching with golf, for example, inspire other participants to compare it to "mini-golf, not real golf;" to a playground ("Some children want to walk up the slide instead of slide down it. ... [Is it] against policy? Probably not. Do they hurt the playground? No. Do they diminish the experience for other children. Absolutely yes." [Heraclites, January 30 2008, 09:39 AM]); and to Olympic sports (I have lived long enough to see professional volley ball ... and Jogging/10K road races/Marathon/ runs turn pro and Olympic... Orienteering is becoming a recognized sport with rules and a sanctioning body. Perhaps in the next decade we will see a national Geocaching league with rules against the use of steroids and shows on ESPN G highlighting the 'sport'" [Beer\_maker, January 30 2008, 12:12 PM]). Improvising in the negotiation of the value of guidelines, some participants push the contextual boundaries further and relate the skills needed to make value attributions in geocaching to those needed



to make moral judgments in societal contexts. The fictional narrative created by DustLizzard and the invocation of popular sayings crafted by Rune Scape illustrate this negotiation move:

This is like me sitting in front of a bank and watching a bank robber come out the door with the loot. I may not own the bank or even do business with that bank, but I certainly have the right to pass judgment when I see this happening with my own eyes. Same with caching, if for whatever reason, I see a false log come in, whether it's my cache or not, I reserve the right to pass judgment on the liar. (DustLizzard, January 31 2008, 11:15 AM)

You have two things tied up here. Passing judgment on the find is just fine. If it's bogus and they have seen the proof, great. Call it a BS find. The other one though hits a different concept. At least for Christian types. Don't worry about the splinter in someone else's eye when you should be worried about the plank in your own. I'm not sure that was one of the better translations...but the concept is 'Mind your own issues before you go out of your way to mind someone else's'. (Rune Scape, January 31 2008, 11:16 AM)

As the discussion thread and the negotiation happening on it unfold, participants highlight the similarities and dissimilarities geocaching has with each of the contexts invoked in metaphors and analogies. In doing so, participants cooperate to develop a collective assessment of the value of geocaching guidelines that is unique to their value-creating network. Simultaneously, their discussions work to selectively reinforce and establish the values (note the plural) of the value-creating network. In this particular discussion, the values of honesty, trust, and participation are being questioned. For example, when OTH manifests his worries that the general attitude "if it's not directly affecting you, then you shouldn't worry about what other people do" will negatively affect geocaching, he is also questioning other participants' preference for accruing benefits to the individual rather than the collective.

Eventually, OTH's initial post amassed an impressive 1845 replies and the discussion it initiated was alive on the forums for almost 2 years, until a forum moderator ended it. Since then, other threads have been initiated that further discuss the value of reinforcing guidelines in geocaching and the practice of false-logging. As new participants join or leave, the value-creating network constantly changes and the negotiation continues. Valuation skills from several other contexts are continuously assessed by participants. While some external valuation skills and criteria are rejected, others are adapted and adopted by participants in the value-creating network of geocaching, impacting on the collective assessment of products within the network. That is, at least, until a new turn of negotiations initiates.

Holding an alternative perspective on the negotiation of value across contexts, Çalışkan and Callon (2009) describe the process observed here as one of separation and division of a provisionally defined market, not one of importation of valuation criteria from outside to a pre-given inside. In their perspective, negotiation does not happen across contexts, but it is used to define the boundaries of a context. This dynamic is evident in the negotiation described above. The metaphors and comparisons made by participants suggest that there is also contestation around defining geocaching either as "just a game," or as a sport, one with rules and structures controlled by a system of governance akin to that of more traditional sports. Because some participants make high investments (of time, effort, money, emotions) in geocaching, they perceive benefits in structures of governance that would work to preserve their investments, that is, to preserve the value of geocaching for these players.

Hence, what the findings presented here mean to highlight is that participants in heterogeneous collaborative networks are constantly negotiating the appropriateness of criteria borrowed from other contexts to shape evaluations of products within their network as

*well* as the boundaries and definitions of that network. As demonstrated above, analogies, metaphors, and narratives are important tools in this essentially textual negotiation process.

### **Value is negotiated in use**

In my investigation of the value-creating network of geocaching, I found that participants negotiate value in use as they directly or indirectly experience a product. Note that this is different from what has been termed, in classical political economy (and particularly on Marx's critical account of political economy), as the use value of commodities. Here I refer to how experiences can affect value assessments, not to the utility of a given product. Following Holbrook (1999, 8), who observes that value resides "not in the product purchased, not in the brand chosen, not in the object possessed, but rather in the consumption experience(s) derived there from," and Mathwick, Malhotra, and Rigdon (2001, 41), who propose that value is based on "interactions involving either direct usage or distanced appreciation of goods and services," I observe that negotiations of the value of a product frequently include value judgments based on its actual or imagined use.

One of the core experiences for participants in the value-creating network of geocaching is to hide and seek caches. Overall, geocaching players attribute higher value to experiences that involve hiding and seeking puzzling, challenging caches that offer trips to beautiful sceneries, stimulating hunts, or include surprising containers and contents. Generalizations aside, preferences for a particular type of geocaching experience, as any other preference, vary individually. Data analysis shows that distinct individual preferences do not co-exist in harmony within the value-creating network, motivating participants to constantly negotiate the weight of their individual experiences in the collective determination of the value of products. This type of negotiation is more hands-on than the forum discussions presented above, and it involves making use of the network's characteristics to foster preferred uses and experiences. For example, by hiding more caches of the type they like to find, players contribute to increasing the opportunities available for participants to have positive experiences with these types of caches and, consequently, to increasing the weight of these experiences in the collective assessment of caches. Player Geos.o.s.'s profile at geocaching.com, for example, indicates that she owns 10 caches which she characterizes as "family oriented." Geos.o.s. explains: "[The caches are] easy to access. There are a couple of them that are wheelchair accessible, and within areas where you'll find playgrounds, parks, so children can go too, families can get to. The terrains are very simple, easy to go by and easy to find. I try to put as many hints, easy hints, to make it easy for them and make it a fun find rather than a hard find" (Interview, November 30, 2010). Not coincidentally, "family oriented" caches are the type of cache Geos.o.s. prefers hunting for. A classification of her finds according to difficulty and terrain indicates that the majority of her 4,000 finds (as of March 2012) are caches classified as 1.5 difficulty and 1.5 terrain, which place lower on the 1-5 difficulty and terrain scales and consist in easy, accessible hides.

Like Geos.o.s., other players contribute to the development of the game in directions that are aligned with their own abilities and skills. Hiding caches is an opportunity to customize the hobby to their preferences, attracting to the activity more players who are similar to them in many aspects, populating the network with people who are more similar to them, and facilitating consensus around the experience-based value of a particular type of cache. This form of negotiation relates to findings presented in studies of flow and optimal experiences (e.g. Csikszentmihalyi 1990; DelleFave, Massimi, and Bassi 2011). According to such studies, "any activity contains a bundle of opportunities for action, or 'challenges,' that require appropriate skills to realize. For those who don't have the right skills, the activity is not challenging; it is simply meaningless" (Csikszentmihalyi 1990, 50). In geocaching, searching for caches that are too easy or too difficult for one's set of skills can make players either bored or anxious. It follows that, as Csikszentmihalyi (1990, 52) points out, "enjoyment

comes at a very specific point: whenever the opportunities for action perceived by the individual are equal to his or her capabilities.” In this sense, Geos.o.s.’s attempts to create more opportunities for players like her to join the network reflects her intention to have more caches hidden (by others) that match her skills and provide her with more enjoyment and optimal experiences. Overall, as these examples illustrate, it is through accounting for lived experiences and creating opportunities for additional optimal experiences, that participants negotiate in use the value of products within a value-creating network.

### Value is negotiated through time

Another aspect of value creation revealed by data analysis is that value, in heterogeneous collaborative networks, is essentially dynamic. Its nature, therefore, is constantly negotiated by participants through time. Looking at objects’ life stories, Appadurai (1986) and other scholars following him (e.g. Kopytoff 1986; Thomas 1991; DiMaggio 1994) have started to uncover the trajectory of value within markets and cultures and across time. In my investigation of the value-creating network of geocaching, I traced the life story of several objects, and found that objects not so much move from one valuation to another, as they are framed and reframed by participants as more or less valuable, and more or less “exchangeable” at different points in time, depending on these objects’ availability, their impact on players’ reputation, and on the geocaching goals participants set for themselves. One interesting example of these dynamics is the story of *Mission 9*, a geocache hidden outside of Seattle, U.S., which I retrace below.

*Mission 9* was one of the fourteen A.P.E. caches originally placed around the world in May 2001. The A.P.E. caches series was created in a partnership between Groundspeak and 20<sup>th</sup> Century Fox to generate publicity for the remake of the movie “Planet of the Apes.” When first hidden, A.P.E. caches were considered extremely valuable within the value-creating network of geocaching because Fox announced that each A.P.E. cache would contain special prizes for the first player to find it. As geocacher Markwell recounts on his website, “the idea was to see who would get there first and claim the special prize out of the cache box. Most of the items appeared to be... items from the movie [set]: a torch, leather blinds to shield human’s eyes, a knife, etc. Not very expensive stuff, but interesting conversation pieces.” (<http://www.markwell.us/projectape.htm>).

A year later, the first change in the status of A.P.E. caches can be observed. In May 2002, six of the 14 original A.P.E. caches had been archived, that is, the containers were removed from where they had been hidden and the online profiles for the caches deactivated on geocaching.com. The remaining A.P.E. caches had lost much of their attractiveness after the special swag was gone, as the forum posts quoted here illustrate:


I did [find cache] Number 7 in Maryland last week while up there on business...it’s really deteriorated with nobody taking care of it. I did leave one of my special geo-tiles in there, but the rest of the contents are bordering on trash if I recall correctly. (Bookworm, 30 May 2002, 06:52 PM)

Mission 10b was missing last time I checked the hiding place. I was short of time, and I’ve been meaning to get back to it to see whether it’s just been misplaced, or whether it has actually been removed. (SleepyLeo, 30 May 2002, 09:03 PM).

At this point, the value of A.P.E. caches as understood by participants was low: players were not keen to making extensive efforts to find the caches (and when they did find one, they were disappointed); Groundspeak did not have any special policy for these geocaches; and 20<sup>th</sup> Century Fox had long stopped supporting the project, evidently having treated it as a temporary promotional tool for the movie launch. As a result of this

combination of time passage and lack of engagement from participants, A.P.E. caches became drastically depreciated.

A new reframing happened when geocaching.com started to display distinct icons for each type of geocache found (e.g. virtual, traditional, multi), in 2004. Project A.P.E. caches, for their particular nature, received an exclusive icon on the website. A few geocachers set up as a goal for themselves to collect all icons in their profile pages and A.P.E. caches became highly coveted by these players. As these geocachers mentioned their personal challenge on discussion forums and on personal websites, they incited others to pursue similar milestones and the value of A.P.E. caches was one again being negotiated: "I want to get every possible icon on my profile page, so I want to find every type of cache and coin, and hide every type. I'm too late to get a virt[ual] or locationless [cache] approved, but I'll do the others for sure. I just need to find a Project APE cache)." (Surfing Pals, 16 June 2004, 04:06 PM).

Most players who entered the community after 2001 were not aware of the promotional stunt run by Fox and did not know what A.P.E. caches were. Seeing the unique icon available on geocaching.com, these participants resorted to the forums for information: "I see people who, in addition to regular caches, multi-caches, virtual caches, puzzle caches, etc. have APE caches accompanied by this icon . What's an APE cache and where are they listed?" (JeepLee, 18 August 2004, 05:27 PM). Experienced participants replied to such questions by recounting the origin of A.P.E. caches and commenting on their experiences with those caches, frequently alluding to the increased value of the remaining ones. At that point, only four of the initial fourteen A.P.E. caches were still active. All others had been archived for diverse reasons, and were no longer accessible to be found by geocachers.

Their increased rarity, in addition to the exclusive icon created by Groundspeak, gave rise to yet another framing, which consisted in seeing A.P.E. caches as sacred objects. Around 2005, players started to organize trips to the remaining A.P.E. cache locations and to call them "pilgrimages," as the following posts illustrate: "When I am rich enough to go to the US I will make sure I go near [an APE cache]. Pity the European project ape caches got mugged. I trust that [Groundspeak] will always keep at least one available for people who make the pilgrimage for that last icon?" (BenandSue, Posted 08 May 2005, 12:41 PM) In this post and others similar to it, geocachers call upon Groundspeak to maintain the remaining A.P.E. caches. Groundspeak took responsibility for one geocache, *Mission 9*, which is the closest to its headquarters, in Seattle, and which became known in the value-creating network as "The A.P.E. cache." Player Doc Doug refers to *Mission 9* in the post quoted below:

Hey NW folks, my wife [player name] and I will be leaving the kids with my parents in Portland and making the pilgrimage to the APE cache on July 6th. Anyone who hasn't been there yet or just wants to make the trek again is welcome to join us. After that we're going to downtown Seattle to spend the night. If anyone is interested we can set-up times and such. (Doc Doug, 16 June 2005, 05:39 AM)

In 2011, *Mission 9*, under the care of Groundspeak, was one of only two remaining A.P.E. caches. All other caches in the series had been archived. The other remaining cache, *Mission 4: Southern Bowl*, is hidden in Brazil. The inaccessibility of its location, a reserve of Atlantic forest, works to reduce its value because fewer geocachers consider making the trip to search for it. In contrast, the A.P.E. cache hidden in Seattle became part of what is known as "The Geocaching Triad," described by Groundspeak as "the crowning achievements of geocaching." Completing the triad requires finding *Mission 9*, visiting the location where the first geocache was placed, and visiting Groundspeak's headquarters. As collectors pursue rare items that would add uniqueness and distinction to their collections and, per extension,

to themselves (Belk 1988), geocaching players pursue unique geocaches or challenges in order to create a profile that would distinguish them from the average player. Hence, the value of *Mission 9* and of the Geocaching Triad is high for those who take on such challenges – as long as the value of having found the cache or completed the triad is acknowledged within the network as a significant accomplishment. The process through which a product becomes highly valuable through time, based on the collective outcome of several participants' actions, is reflected on player brunobz's post, quoted below. In his post, brunobz also highlights the commercial opportunities that emerge from the framing of "the triad" as a significant geocaching accomplishment:

I think part of those changes includes how people feel about this cache. I don't think the term 'Triad' existed in 2006. But in the intervening years it has gradually grown into a 'thing'. Groundspeak's Triad geocoin was first offered for sale a couple of years ago, challenge caches started popping up, WSGA [Washington State Geocaching Association] has been chartering buses to take groups to the trail head, Groundspeak started trumpeting the APE cache on the site as 'one of the crowning achievements in geocaching' and used it as a lure to Seattle [Groundspeak's Block Party to celebrate 10 years of geocaching] last summer... None of that was sudden ... It was a completely organic evolution of how thousands of geocachers feel about Mission 9. (brunobz, 16 June 2011, 08:42 AM)

To summarize the trajectory described above, throughout time *Mission 9* went from being a highly valued object (at its creation), to being ordinary (post FTFs and movie release), to a collectible (with launching of icons), to a sacred item (when only one other, virtually inaccessible, A.P.E. cache remained). By the end of 2011, as I was leaving the research field, *Mission 9* was stolen. While many geocachers pleaded to Groundspeak for the stolen cache to be replaced with a new container, others saw no point in replacing the original cache with an inauthentic cache. Finally, Groundspeak's decision is made public on the discussion forums:

Sadly, the APE cache was archived this evening. Here is what Mou10Bike posted in the cache log tonight: "After careful deliberation with Jeremy, Bryan and others, I've decided that the best course of action with this cache is to archive it. I'll be sad to see it go; needless to say I've become rather familiar with the location over the last 10 years! Many thanks for all of the great logs posted to this cache over the years, and my most sincere apologies to those who wanted to visit it but were denied the chance." A sad day indeed. (MP393, 13 June 2011 - 07:03 PM)

This recent episode, alongside with talks of the launching of Project A.P.E. II in anticipation of the release of the sequel movie to Planet of the Apes, suggest that the negotiations of the value of a product through time do not cease to unfold, even after the material object is extinguished. In the example discussed here, geocachers have continued to frame and reframe the value of the A.P.E. caches after their disappearance, now focusing on recreating the Geocaching Triad, displaying the icons collected, and discussing the experiences of finding those caches when they existed.

### Value is negotiated among segments

In heterogeneous collaborative networks, different participants (or groups thereof, which I will call segments) generate and negotiate distinct meanings for products. This finding is aligned with prior consumer culture studies which have reframed value to include meanings that are developed, negotiated, represented, and put into use by consumers (e.g. Baudrillard 1988; Arnould and Price 1993; Thompson and Troester 2002). In this literature, meaning creation most frequently unfolds within subcultures or consumer collectives, and



represents an extension, variation, or negation of the meanings put forward by marketers in products, brands, and advertising. In contrast, participants in heterogeneous collaborative networks negotiate meaning for products they co-create, not to products introduced by an actor external to the network. Divergent meanings generated for the same co-created product become easily known within the network, fostering frequent negotiations.

Several cases of meaning – and therefore value – negotiation among segments are present in the heterogeneous collaborative network of geocaching. These can be illustrated by the dynamics played across three distinct segments as participants negotiate the meanings associated with Numbers in the value-creating network of geocaching. *Numbers* refer to the points collected by a player for each cache found or hidden, and for each event attended or trackable item moved. *Numbers* are not only symbolic representations of experiences, but also signs of expertise and accomplishments within the network. There is usually a correlation between high *Numbers* and a player's reputation, since the accumulation of numbers requires either enduring or intense commitment to the hobby. As the literature on reputation explains, "[r]eputations emerge if an actor's future partners are informed on his present behavior. Reputations depend on the 'embeddedness' of interactions in structures or networks of social relations. They illustrate the effects of such embeddedness on the outcomes of interactions" (Raub and Weesie 1990, 626). While *Numbers* do offer important information that allows participants to assess one another's reputation, these signs are not read equally across the network.

While every geocacher has a personal *Number* displayed in her online profile, the value of *Numbers* as symbols varies across segments within this value-creating network. Three main segments and their respective preferred meanings can be observed in relation to Numbers: (1) "Play for the Numbers," (2) "It's not about the Numbers," and (3) "Numbers are just numbers." Geocachers in the first segment pay close attention to hobby-related statistics and have developed tools to break the total number of finds down into multiple categories, and to rank geocachers based on their *Numbers*. The website CacherStats, for example, publishes an up-to-date ranking of all geocachers in the world who have found 200 or more caches. For some time, the top player in this ranking has been ElBaber, who found more than 63,000 geocaches (as of March 2012) in the ten years he has been a geocacher. ElBaber is a California resident who describes his occupation as "professional cacher." He has been dubbed "the Michael Jordan of geocaching" (Gillin and Gillin, 2009), "The King of Geocaching Hill," and "top cacher" by other players on online forums. While ElBaber represents an extreme case of geocacher who plays for the *Numbers*, counting finds is similarly important for other players in this segment, who are also known as "power cachers." Some of the practices of power cachers, such as frequent attempts to break records (e.g. finding the most caches in a 24 hour period), the posting of short, "cut and paste" logs on cache profile pages, and their attribution of equivalence between *Numbers* and a geocacher reputation are contested by those for whom "It's not about the Numbers." Considering the general equivalence between high Numbers and the expertise of a player, power caching is perceived, by the "It's not about the Numbers" segment, as a shortcut to increasing Numbers, that is, an illegitimate attempt to acquire reputation. These players prefer to refer to the quality (instead of quantity) of finds when assessing reputations within the network, as Fox Set statement suggests: "In my book geocachers with the highest average terrain rating for found caches are legends" (Fox Set, 02 August 2010, 01:27 PM).

Some seasoned players who recognize this dispute as a result of different perspectives on a multifaceted game, compose the third segment: "Numbers are just numbers." Participants in this segment avoid joining the negotiations related to the meaning of numbers and, when they occasionally participate in discussions, they avoid taking sides, as the comment posted by Opt1c\_lens on a blog post about Numbers illustrates: "Stats are evil; they encourage greed. None the less, it is as natural for people to keep records as it is to scrutinize them. Frankly, I find all the flap about numbers amusing, in the same distorted

way I enjoy reading the news daily” (6 June 2006, 0:01 PM). For players in this segment, assessing reputation within the network requires more information than what is displayed in a player’s online profile. Usually, those who care little about *Numbers* focus on firsthand accounts of past interactions with a player in order to determine his or her reputation. Contributions to the development of the activity are also taken into account, as the following quote illustrates:

We have several legends in my area: [player name] (for a great sense of humor and wonderful caches ...; [player name] for his inexhaustible determination to carry ammo cans to the furthest reaches of places that can only be visited by bushwhacking down to the steep side of lakes that are only accessible during drought years; [player name] for his relentless optimism, his infallible geosense, and obsession with the game. ...[player name] used to live in our area and still is famous for his wonderfully crafted hides and photography... The people I have met while caching are indeed legendary for making the game what it is. (geobowling, 02 August 2010, 01:29 PM)

Negotiations around the meaning of *Numbers* unfold on discussion forums, in events, and on the trails, whenever geocachers meet. These negotiations gain relevance as participants realize that each understanding of *Numbers* implies in supporting or rejecting different guidelines for the activity and different structural arrangements within the network. As detailed above, different meanings also suggest different systems of reputation and bring different values to the forefront of the value-creating network. Therefore, it is important for participants to defend the meaning they have adopted, and to make other segments’ meanings seem less desirable in comparison.

I identified two tactics participants employ when negotiating value across segments: (1) mobilization of allies among their segment, and (2) careful construction of their – and destruction of the opponents’ – arguments. The post quoted below initiates a long discussion thread on the forums of geocaching.com which illustrates the application of the both tactics in negotiating value across segments:

There are new rules being discussed over on the Get Satisfaction site meant to limit the ability to create new power trails. [link] So far most of the participation has been from people who oppose power trails seeing them as some kind of threat to geocaching. I wonder if the pro-power trail folks are unaware of the proposals yet or if the structure of the Get Satisfaction site simply encourages more participation by those agreeing with an idea. I find it difficult to debate the pros and cons of a proposal on that site. I posted some concerns and they were dismissed by Jeremy. (emojung Aug 28 2010, 09:36 AM)

In his post, emojung refers to a potential change on the guidelines for the creation of “power trails<sup>1</sup>.” He not only attempts to mobilize “pro-power trail folks” (members of the “Play for the Numbers” segment) to join the discussion, but also questions the usefulness of the Get Satisfaction platform to advance their perspective, which consists in disagreeing with the new proposed rules. Get satisfaction, as Facebook, is a social media platform which has a “like” button that participants can use to support an opinion or message, but not a “dislike” button that they could use to manifest disagreement. By initiating a discussion on the geocaching.com forums, emojung opens another channel for the “Play for the Numbers” segment to expose their arguments, one that is less limited by the technical features described above.

<sup>1</sup> While its definition is contested, the term “power trail” is usually employed in reference to a large number of geocaches (usually on the hundreds) placed in close proximity to each other alongside a trail.

Arguing for new rules limiting the creation of power trails, the “It’s not about the Numbers” segment fears that the practices of players who “Play for the Numbers” will cause environmental damage, given that power trails attract far more than people than most individual caches. Power cachers are seen as a threat because “in their zeal to rack up numbers they’re far more likely than most cachers to take shortcuts, drive where they shouldn’t and tread heavily” (peterseed, August 29 2010, 05:22 AM). Considering the arguments put forward by their opponents, participants who “Play for the Numbers” negotiate by sizing their segment down, as the quote below, in which a particular power trail (E.T.) is referenced, illustrates:

With respect to the E.T. Trail: There is a small group of players who are driven to spend significant time and resources to tackle this particular adventure. Travelers from various locations in North America and Europe have seen this critter and been lured into the desert. The tiny subset of cachers who are lured out onto a Power Trail represent a miniscule portion of our worldwide caching community it might be illuminating to discover the various driving forces. What are the motivators? What is the lure? An analysis of stats reveals *cachers with small numbers* and cachers with mega numbers so *I am not certain that number pumping is the primary motivator.* (hummingbird, August 29 2010, 02:09 PM [italics added])

In addition to sizing down the segment, to which he refers as “a tiny subset” or “minuscule portion” of all geocachers, player hummingbird collects evidence, through an “analysis of stats” to suggest that the main motivation of geocachers who hunt in power trails is not to “rack up numbers,” as suggested by those in the “It’s not about the Numbers” segment.

Bluffing, predictions of doom, exaggerations, and tweaking of facts are common in such negotiations, and participants are aware that these tactics will be employed by others. For this reason, and because guidelines and structures are at stake in negotiations across segments, participants are very careful in constructing their arguments and checking the facts in their opponents’ posts. For example, in response to emojung’s post mobilizing the “Play for the Numbers” segment, player Raffs Tribe writes:

I had to go back and read the entire [discussion on Get Satisfaction] again, as this was certainly not my first impression. Having reread it, I still don’t see anyone posting anything even mildly suggesting that mindless repetition is a “threat” to geocaching. What I do see is someone posting an idea, and others posting their thoughts on the idea, which I believe was the original intent of the feedback site. Exaggerating someone’s position is a great tool in a verbal debate, where folks listening don’t usually pay strict attention to details. Doing so in a written format doesn’t bode so well, as it just takes a couple clicks to prove you wrong. (Raffs Tribe, August 28 2010, 01:45 PM)

Joining the discussion, another player thoroughly verifies the argument put forward by hummingbird, adds new evidence that counters his sizing of the “Play for the Numbers” segment, and challenges participants to offer other arguments. His post, dense with statistics and researched facts, is quoted below:

Sorry, I’m not buying it. Picking a random cache (#252) I looked at the logs. There are 134 finds (no DNFs). Of those 134 finds, there was only two [geocachers] with less than 1000 finds. There was a handful with just over 1000. One log in particular was from someone that had 1132 finds and they wrote that they found 1100 caches in about 11 hours. I’m not sure what you consider small number but in many areas 1000 is considered quite a few finds. I also counted a whopping 33 finders that have more than 10,000 finds. To put that number into perspective, according to cacherstats.com

there are only 3 geocachers in the state of NY with more than 10,000 finds, and only 150 or so in the entire world. I also took a look at a nearby cache with a 3.5 terrain that wasn't on the PT. It only has 28 finds (since 2008), none since the E.T. trail was created. The evidence is pretty clear to me that the motivation for doing the power trail is to find as many caches as possible in a short period of time, effectively turning geocaching into a race. I'm willing to listen to some other reason why geocachers are doing the ET trail, other than to try and find a lot of caches in a short period of time but I've yet to see anything convincing. (KayakNY, August 29 2010, 03:18 PM)

In sum, this example illustrates that, by mobilizing participants in their segment, and constructing or destroying arguments depending on their goals, participants negotiate distinct meanings of a product among segments. Although such negotiations are rarely settled, they contribute to the development of guidelines, practices, and structures that are better adjusted to the multiple meanings developed by participants within the value-creating network.

### **Value is negotiated within relationships**

Data analysis reveals that because value-creating networks are inherently social, relationships are an important source of value creation in this context. As participants invest in the success of one relationship or fail to nurture and develop another, they negotiate the value created within each relationship. It is pertinent to observe that the relationships referred to here are not necessarily dyads at the individual level. Relationships may exist at the macro level (for example, between Groundspeak and the community of geocaching players) or between non-equivalent levels as, for example, the relationships between individual players and the Ministry of Resources for their local communities, or between geocaching bloggers and their audiences.

No matter their level, relationships are developed through a series of one-time interactions. Repeated interactions between two parties increase the strength of their relationship, and both parties likely reap benefits from continued association (Granovetter, 1985). Accordingly, data analysis reveals that, in the value-creating network of geocaching, participants negotiate their value within relationships by keeping track of one-time interactions and by making efforts to increase the number and/or frequency of these interactions. Most geocaching players simply use online and offline logging of caches to acknowledge their finding of another player's cache, thereby creating an opportunity for direct interactions with the cache owner. Some participants, however, make additional efforts to develop relationships within the value-creating network.

One such example is res2100, who has been a geocacher since 2002. He has hidden more than 300 caches and has organized 28 geocaching events (as of March 2012). Each cache hidden and event organized may be considered a one-time investment he made in forming and developing relationships with other participants. Many of res2100 hides involve mystery or puzzle caches, challenges, and multiple stages, all of which requiring a significant amount of creativity and time to set up. Moreover, he has volunteered in several positions for the State Geocaching Association (OGA), created challenges for other players, and coined several coveted geocoins. As a consequence of his investment in the activity, res2100 built his reputation through time, and became a much esteemed member of the local geocaching community. He is considered highly by those who "Play for the Numbers," for his almost 9,000 finds; by those for whom "Numbers shouldn't matter," for his challenging finds; as well as by geocachers who consider "Numbers just Numbers" for his contributions to increasing the overall value of the hobby. res2100 is known in State and elsewhere for his series of puzzle caches, the "Bouncy Bunny" caches, which many players look forward to finding. The logs on his caches reflect other participants' acknowledgment of his investments in geocaching, as the following log illustrates: "Just a short note ... to thank the [cache owner]

for the immense effort that was put into creating this series. Creating one cache that others would find interesting is hard enough, but to create a set of 11 sets a very high standard. Thanks for all the caches!" (geosmart – noted posted for Sixth Sanctum: The Final Journey, January 2, 2009).

On his personal website, res2100 keeps a registry of all geocaching players he and his family have encountered while geocaching, in events, or elsewhere. Besides each name, res2100 registers the number of times he met each geocacher or geocaching team. The list contains more than 500 names, and each name is a hyperlink to that player's profile on geocaching.com, reinforcing the connection between res2100 personal website and those geocachers' online presence. Working to maintain and establish these connections assures to res2100 that his reputation and the benefits that come with it (such as influence, respect, and power) are fully ingrained and far reaching within the network.

In contrast to the efforts made by res2100 and other players like him, some participants are not willing or able to make the investments necessary to build and foster relationships within the value-creating network. This is frequently the case for highly sought after participants, such as Jeremy Irish, Groundspeak lackeys, and volunteer reviewers. Participants like these already have a high status in the value-creating network. Many participants who are building their reputations within the network wish to develop relationships with high profile others and make unilateral efforts to do so. The result is a negotiation process in which one member is more committed than the other to creating or developing the relationship and to working to ensure its continuance.

In the case of Groundspeak, the company has recently started to make further investments to strengthen relationships with local communities of players by sending its employees (lackeys) to represent the company at geocaching events around the world. When this happens, players take pictures with Groundspeak lackeys attending the event, and report on the fact as a memorable moment in their geocaching experiences. The following log, posted by players after an event in State attended by Madame Mose, the Volunteer Program Manager for Groundspeak illustrates this dynamic: "It was a pleasure meeting Madame Mose. She came as a guest and jumped in to help at every opportunity. She is the third Groundspeak person I have met. No wonder geocaching is so much fun" (Dyver and Not, posted on COG Spring Fling 007, 11 June 2011). Here, Dyver and Not publicly account for relationships ("the third Groundspeak person I have met") hoping to reap the reputational benefits of making these associations visible to other participants within the network.

Table 2 summarizes the negotiations of value described here and in the preceding sections. In heterogeneous collaborative networks, value is negotiated across contexts' flexible boundaries by participants who improvise using textual tools such as narratives, metaphors, and analogies, which are connected to the particular culture of their value-creating network.



**Table 2 – Negotiations of value**

Negotiated aspect	Definition	Characteristics of negotiation	Examples
Context	Participants engage in negotiations to import and adapt criteria from other contexts that will be used to define what value is in a value-creating network.	<ul style="list-style-type: none"> <li>- Essentially textual</li> <li>- Use of metaphors and analogies</li> <li>- Use of narratives</li> </ul>	<ul style="list-style-type: none"> <li>- Negotiations of the value of guidelines reinforcement</li> <li>- Negotiations of the boundaries of geocaching</li> </ul>
Use	Participants negotiate to make their personal experiences count on determining the value of products.	<ul style="list-style-type: none"> <li>- Idea generation and development</li> <li>- Creation of more opportunities for preferred use to happen</li> </ul>	<ul style="list-style-type: none"> <li>- Creation of an experience-based ranking of caches</li> <li>- Players hide the types of caches they prefer to find</li> </ul>
Time	As participants negotiate, they frame and reframe the value of an object through time.	<ul style="list-style-type: none"> <li>- Sense making</li> <li>- Preservation of objects life stories</li> <li>- Continuity after objects cease to exist</li> </ul>	<ul style="list-style-type: none"> <li>- Changes in the value of A.P.E. caches</li> </ul>
Segments	Participants negotiate to accommodate different meanings to the same product.	<ul style="list-style-type: none"> <li>- Mobilizing the segment</li> <li>- Constructing and destroying arguments</li> </ul>	<ul style="list-style-type: none"> <li>- Negotiation about the meaning of Numbers in geocaching</li> </ul>
Relationships	Participants invest in relationships as a source of value creation.	<ul style="list-style-type: none"> <li>- Making efforts to develop relationships</li> <li>- Keeping track of one-time interactions</li> </ul>	<ul style="list-style-type: none"> <li>- Players build relationships through multiple engagements in geocaching activities</li> <li>- Groundspeak sends lackeys to meet players at events</li> </ul>

## 5 Concluding Remarks

The primary contributions of this article lay in the areas of value co-creation and market dynamics. In investigating the value-creating network of geocaching, I found value creation to be a dynamic process embedded in culture, and requiring constant valuations and re-valuations as participants attempt to account for their individual perceptions and preferences while collaborating with one another to co-create value. Focusing on negotiations, I acknowledge that tensions are inherent to the process of value co-creation, and emphasize that tensions and conflicts cannot be eliminated from this process; they can only be managed. I observe that conflicting goals, controversial meaning formulations, and power disparities between participants are some of the factors that fuel tensions and generate conflict within the value-creating network. At the same time, these factors create opportunities for co-creation and increase the possibilities for expanding the value being co-created. Negotiating alleviates conflict and increases the likelihood that the co-created value will be in tune with the needs and goals of a larger number of networked participants. Moreover, many participants who engage in co-creation disputes within heterogeneous collaborative networks seem to enjoy the process of negotiation. Negotiations allow participants to display their knowledge, demonstrate their skills, and apply their creativity. Negotiations also provide opportunities for participants to develop new social ties and reinforce existing ones. Therefore, while acknowledging that conflict is inherent to the process of value co-creation, I suggest that conflict can be managed through negotiations and that this is a mostly positive process with favorable outcomes.

The understandings proposed here about the nature of value in heterogeneous collaborative networks also have implications for understanding value co-creation in brand

communities and online communities of consumption, including those that are not as diversely populated as the geocaching network. Existing literature has looked at how marketers can foster value creation in consumption communities and how communally situated consumers draw from market resources to create value. However, these studies have not considered marketers as community participants. This study's findings suggest that companies and marketers are, like consumers, participants in value-creating networks and, as such, are closely involved in value negotiation processes.

By studying value-creating networks and their multiple participants, I also identified value creating practices which had not been noticed before in consumption communities. Linking communal and market domains, these new value-creating practices hint at the importance of observing dynamics of participants who switch between the roles of consumer, volunteer, entrepreneur, and marketer; and, as they do so, contribute to shaping the value-creating network as a unique site of value creation and exchange. Additionally, in contrast to what Kozinets (2001) found as he observed fans and mass media producers who "rearticulated entertainment texts, images, and objects with legitimating meanings of moral community in order to bracket them from the unavoidable reality that they are commercial creations" (2001, 85), I found that participants in networked markets embrace the commercial aspects of the activity, thoroughly connecting these to the communal elements of the network.

In sum, by explaining the negotiations carried by participants in value-creating networks, these findings contribute to advancing understanding of the "multiple valuation and signification processes" (Peñaloza and Mish 2011, 15) that consumers and companies engage in when creating value. Understanding how such negotiations happen in value-creating networks liberates participants from the role positions ascribed to them in traditional markets and can, therefore, help us advance a theory of value creation that accounts not only for individual and organizational factors, but also for the cultural context and social relationships participants form as they connect to each other.

This study's findings also corroborate those of other scholars in suggesting that the process of value co-creation does not end when value is exchanged. The circulation of objects adds to or detracts from their value, motivating new cycles of value negotiation that extend through time and across multiple rounds of exchange and transfer. In fact, even after material objects cease to exist or are disposed of, their value continues to be negotiated and renegotiated by participants in value-creating networks.

This study also informs the practices of marketing managers. Findings suggest that technological structures alone, even the most advanced ones, do not guarantee the success of a product or company in heterogeneous collaborative networks. In such networks, where processes usually prevail over outcomes, participants derive pleasure from collaborating and contributing to the development of products. Therefore, an imperfect technological platform may be preferred by participants who can apply their skills and knowledge into improving it than a perfect platform which requires no additional input. Moreover, participants will find in existing technology platforms the solution to their immediate content production and relationship building needs. The same logic applies to the launching of products and projects within a value-creating network. Companies should share ideas early on in order to receive input from other participants, build trust, and foster collaboration, all of which are extremely important factors to the success of commercial initiatives within value-creating networks.

Despite the identification of some factors related to value creation that may contribute to the endurance of heterogeneous collaborative networks (Thomas et al. 2012), their future is still uncertain. Scalability, relationship development and maintenance, and division of responsibilities and rewards become progressively complex as a value-creating network grows. Although this study examined a heterogeneous collaborative network that has

endured for more than a decade, these are still early days for value-creating networks in general. I believe that the findings presented and discussed in this study apply to most of the value-creating networks which have emerged in contemporary developed economies. In that sense, it is important to consider that these networks' fluidity may be a characteristic of the early stages of a market, when "many conceptions of control seem possible" (Fligstein 2001, 225), and to employ research methods, theoretical frameworks, and managerial approaches that embrace such fluidity.

## References

- Appadurai, A. (1986). *Story of objects – the social life of things: commodities in cultural perspective*. Cambridge; New York: Cambridge University Press.
- Arnould, E. J., & Price, L. L. (1993). River Magic: extraordinary experience and the extended service encounter. *Journal of Consumer Research*, 20(1), 24-45.
- Baudrillard, J. (1988). *Jean Baudrillard: selected writings*. Cambridge: Stanford University Press.
- Belk, R. W., & Wallendorf, M., & Sherry Jr, J. F. (1989). The sacred and the profane in consumer behavior: theodicy on the odyssey. *Journal of Consumer Research*, 16(1), 1-38.
- Bonsu, S. K., & Darmody, A. (2008). Co-creating second life: market-consumer co-operation in contemporary economy. *Journal of Macromarketing*, 28(4), 355-68.
- Brabham, D. C. (2010). Moving the crowd at threadless. *Information, Communication & Society*, 13(8), 1122 -45.
- Çalışkan, K., & Callon, M. (2009). Economization, part 1: shifting attention from the economy towards processes of economization. *Economy and Society*, 38(3), 369-98.
- Chan, K. W., Yim, C. K. (Bennett), & Lam, S.K. (2010). Customer participation in value creation a double-edged sword? Evidence from professional financial services across cultures." *Journal of Marketing*, 74 (3), 48-64.
- Chase, R., (2015). *Peers Inc: how people and platforms are inventing the collaborative economy and reinventing capitalism*. PublicAffairs.
- Cova, B., & Dalli, D. (2009). Working consumers: the next step in marketing theory? *Marketing Theory*, 9(3), 315-39.
- Cova, B., & Pace, S. (2006). Brand community of convenience products: new forms of customer empowerment – the case 'my nutella the community'. *European Journal of Marketing*, 40(9/10), 1087–1105.
- Csikszentmihalyi, M. (1990). *Flow: the psychology of optimal experience*. New York, NY: Harper & Row Publishers.
- Deighton, J., & Grayson, K. (1995). Marketing and seduction: building exchange relationships by managing social consensus. *Journal of Consumer Research*, 21(4), 518-26.
- DelleFave, A., Massimi, F., & Bassi, M. (2011). The phenomenology of optimal experience in daily life. In *Psychological Selection and Optimal Experience across Cultures: Social Empowerment through Personal Growth*, edited by Antonella DelleFave, London, UK: Springer.
- DiMaggio, P. (1994). Culture and economy. In *The Handbook of Economic Sociology*, edited by Neil J. Smelser and Richard Swedber, 27-57. Princeton: Princeton University Press.
- Dolbec, P.Y., & Fischer, E. (2015). Refashioning a field? Connected consumers and institutional dynamics in markets. *Journal of Consumer Research*, 41(6): 1447-1468.
- Edvardsson, B., Tronvoll, B., & Gruber, T. (2011). Expanding understanding of service exchange and value co-creation: a social construction approach. *Journal of the Academy of Marketing Science*, 39(2): 327-339.
- Fetterman, D. (2012). *Ethnography step-by-step*, 3rd ed. Thousand Oaks, CA: Sage Publications.

- Figueiredo, B., & Scaraboto, D. (2016). The systemic creation of value through circulation in collaborative consumer networks. *Journal of Consumer Research*, 43(4), 509-533.
- Fligstein, N. (2001). *The architecture of markets: an economic sociology of twenty-first-century capitalist societies*. Princeton, NJ: Princeton University Press.
- Fligstein, N., & Dauter, L. (2007). The sociology of markets. *Annual Review of Sociology*, 33(1): 105-28.
- Giesler, M. (2006). Consumer gift system: netnographic insights from napster. *Journal of Consumer Research*, 33(2), 283-90.
- \_\_\_\_\_. (2008). Conflict and compromise: drama in marketplace evolution. *Journal of Consumer Research*, 34 (6), 739-753.
- Gillin, P., & Gillin, D. (2009). *The joy of geocaching*. <http://joyofgeocaching.com/>
- Granovetter, M. (1985). Economic action and social structure: the problem of embeddedness. *American Journal of Sociology* 91(3), 481.
- Hamilton, K. L., & Hewer, P. A. (2010). Tribal mattering spaces: social networking sites, celebrity affiliations and tribal innovations. *Journal of Marketing Management*, 26(3-4), 271-89.
- Holbrook, M. B. (1994). The nature of customer value: an axiology of services in the consumption experience. In *Service Quality: New Directions in Theory and Practice*, edited by Roland Rust and Richard Oliver. Thousand Oaks, CA: Sage Publications.
- \_\_\_\_\_. (1996). Customer value: a framework for analysis and research. In *Advances in Consumer Research*, 23, edited by Kim P. Corfman and John G. Lynch Jr. Provo, UT : Association for Consumer Research.
- \_\_\_\_\_. (1999). *Consumer value. a framework for analysis and research*. London: Routledge.
- Humphreys, A., & Grayson, K. (2008). The intersecting roles of consumer and producer: a critical perspective on co-production, co-creation, and prosumption. *Sociology Compass*, 2/3, 963-80.
- Kopytoff, I. (1986). The cultural biography of things: commoditization as process. In *Story of Objects. The Social Life of Things: Commodities in Cultural Perspective*. Edited by Arjun Appadurai. Cambridge; New York: Cambridge University Press.
- Kozinets, R. V. (2001). Utopian enterprise: articulating the meanings of star trek's culture of consumption. *Journal of Consumer Research*, 28(1), 67-88.
- \_\_\_\_\_. (2002a). Can consumers escape the market? Emancipatory illuminations from burning man. *Journal of Consumer Research*, 29(1), 20-38.
- \_\_\_\_\_. (2002b). The field behind the screen: using netnography for marketing research in online communities. *Journal of Marketing Research*, 39(1), 61-72.
- \_\_\_\_\_. (2010). *Netnography. Doing ethnographic research online*. London: Sage Publications.
- Kozinets, R. V., & Handelman, J. M. (2004). Adversaries of consumption: consumer movements, activism, and ideology. *Journal of Consumer Research*, 31(3), 691-704.
- Kozinets, R. V., Hemetsberger, A. & Schau, H. J. (2008). The wisdom of consumer crowds: collective innovation in the age of networked marketing. *Journal of Macromarketing*, 28(4), 339-54.
- Latour, B. (2005). *Reassembling the social: an introduction to actor-network theory*. Oxford, UK: Oxford University Press.
- Lusch, R. F., & Vargo, S. V. (2006). *The service-dominant logic of marketing: dialog, debate, and directions*. Armonk, NY: M.E. Sharpe.
- McAlexander, J.H., Schouten, J.W., & Koenig, H.F., (2002). Building brand community. *Journal of Marketing*, 66(1), 38-54.
- Mathwick, C, Malhotra, N., & Rigdon, E. (2001). Experiential value: conceptualization, measurement, and application in the catalog and internet shopping environment. *Journal of Retailing*, 77(1), 39-56.

- Muniz, A. M., & O'Guinn, T. C. (2001). Brand community. *Journal of Consumer Research*, 27(4), 412-32.
- Peñaloza, L., & Mish, J. (2011). The nature and processes of market co-creation in triple bottom line firms: leveraging insights from consumer culture theory and service dominant logic. *Marketing Theory*, 11(1), 9-34.
- Peñaloza, L., & Price, L. L. (1993). Consumer resistance: a conceptual overview. In *Advances in Consumer Research*, edited by Leigh McAlister and Michael L. Rothschild, 20, 123-28. Provo, UT: Association for Consumer Research.
- Polanyi, K., (1944). *The great transformation: the political and economic origins of our time*. Boston: Beacon.
- Raub, W., & Weesie, J. (1990). Reputation and efficiency in social interactions: an example of network effects. *American Journal of Sociology*, 96(3), 626-54.
- Reckwitz, A. (2002). Toward a theory of social practices: a development in culturalist theorizing. *European Journal of Social Theory*, 5(2): 243-63.
- Scaraboto, D. (2015). Selling, sharing, and everything in between: the hybrid economies of collaborative networks. *Journal of Consumer Research*, 42(1), 156-76.
- Scaraboto, D., & Fischer, E. (2013). Frustrated fatshionistas: an institutional theory perspective on consumer quests for greater choice in mainstream markets. *Journal of Consumer Research*, 39(6), 1234-1257.
- Schau, H. J., Muñoz Jr., A. M., & Arnould, E. J. (2009). How brand community practices create value. *Journal of Marketing*, 73(5), 30-51.
- Schouten, J., & McAlexander, J. (1995). Subcultures of consumption: an ethnography of the new bikers. *Journal of Consumer Research*, 22(1), 43-61.
- Seraj, M. (2012). We create, we connect, we respect, therefore we are: intellectual, social, and cultural value in online communities. *Journal of Interactive Marketing*, 26(4): 209-222.
- Stephen, A. T., & Toubia, O. (2010). Deriving value from social commerce networks. *Journal of Marketing Research*, 47(2), 215-228.
- Sundararajan, A. (2016). *The sharing economy: the end of employment and the rise of crowd-based capitalism*. MIT Press.
- Thomas, N. (1991). *Entangled objects: exchange, material culture, and colonialism in the Pacific*. Cambridge, MA: Harvard University Press.
- Thomas, T. C., Price, L. L., & Schau, H. J. (2013). When differences unite: resource dependence in heterogeneous consumption communities. *Journal of Consumer Research*, 39(5), 1010-33.
- Thompson, C. J., & Coskuner-Balli, G. (2007). Countervailing market responses to corporate co-optation and the ideological recruitment of consumption communities. *Journal of Consumer Research*, 34(2), 135-52.
- Thompson, C. J., & Troester, M. (2002). Consumer value systems in the age of postmodern fragmentation: the case of the natural health microculture." *Journal of Consumer Research*, 28(4), 558-71.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1-17.
- \_\_\_\_\_. (2008a). From goods to service(s): divergences and convergences of logics. *Industrial Marketing Management* 37(3), 254-59.
- \_\_\_\_\_. (2008b). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1-10.
- White, H. C. (2002). *Markets from networks: socioeconomic models of production*. Princeton, NJ: Princeton University Press.