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Understanding Current and Future Issues in Collaborative Consumption

A Four-Stage Delphi Study

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Understanding Current and Future Issues in Collaborative Consumption: A Four-Stage Delphi Study

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Abstract

Sharing activities underpinned by the technologies of the Internet have become dominant in the activities of individuals, business and governments. Recently, such sharing activity has grown from information and media content to wider resources, including money, physical goods and services – coined collaborative consumption. Sustainability is often cited as a key driver, underpinned by economic, social and environmental benefits. If successful, the sharing of such resources is likely to have a potentially disruptive impact on incumbents in traditional supply chains. However, given the embryonic state of its development, it is perhaps not surprising that collaborative consumption is not well understood in research or practice. With this in mind, this study undertook a four-stage Delphi study with 25 experts in order to identify the key drivers, inhibitors and likely future developments in collaborative consumption over the next 10 years. A key finding was that environmental concern (sustainability) was considered of minor importance. The paper rounds-off with conclusions and implications for practice and further research.

Keywords: Delphi; collaborative consumption; sharing economy; sustainability.

Introduction

Recent global economic, social and environmental problems have drawn attention for the need to develop radical solutions. Technologies of the Internet and more recently social media have provided some new directions for these solutions. Collaborative consumption websites offer peer-to-peer marketplaces where unused space, goods, skills, money, or services can be shared. Time magazine has suggested collaborative consumption as one of the "10 ideas that will change the world" (Walsh, 2011). Recent developments in these business models have been influenced by the drive for sustainability, including such issues as economic austerity, social development needs,

awareness of the wasteful nature of consumerism, and issues of global warming and environmental pollution.

Collaborative consumption could have a strong and disruptive impact on supply chains in many industries due to its global relevance and great potential for growth. Consider the case of car sharing as a business. One example is that of gocarshare.com, a marketplace for empty car seats on specific journeys; reputation is based on Facebook membership and website feedback whilst revenue is based on commission from a passenger's travel fee and targeted website advertising. Members are typically able to travel more cheaply than other modes of car transportation, in a personalized way, and do not need to own a car. Consequently, less cars are needed, fewer cars will need to be manufactured, along with parts for those cars, fuel, additional supporting services and goods, and so on. Fremstad (2014) estimates that the average US household spends more than $9000 per annum on shareable goods. Furthermore, 52% of Americans have rented, borrowed or leased the kind of items usually owned, and 83% would do so if this was easy (Wise 2013). PwC (2015) estimate that five main sharing sectors (car sharing, staffing, music video streaming, accommodation and finance) will increase in global revenues from around $15 billion in 2013 to $335 billion by 2025. In support of this claim, a recent working paper by Zervas et al. (2015) found that the impact of AirBnB on the hotel industry in Austin, Texas was significant, claiming 8-10% of revenue and pushing down prices of incumbents. Consequently, the growth of business within the collaborative consumption paradigm must be of major interest to both industry and service sectors in the near future.

For the purpose of this study, we define collaborative consumption as: “The use of online marketplaces and social networking technologies to facilitate peer-to-peer sharing of resources (such as space, money, goods, skills and services) between individuals, who may be both suppliers and consumers.” Little is currently understood about collaborative consumption websites and their wider and future implications for consumers, the economy and society. Such an understanding is not only likely to be of value to researchers, entrepreneurs and those in incumbent businesses, but

also to Government and other bodies who have an interest in supporting new business development, developing policies for governing activities, including consumer protection and taxation, and in promoting societal benefit via the encouragement of business based on principles of environmental consciousness and resource efficiency.

In order to unravel the phenomenon, this study is the first to use a structured empirical approach to inductively understand this new domain in depth. In particular, we apply the Delphi method over four phases with 25 experts involved in collaborative consumption in order to answer the following research question: What are the key drivers, inhibitors and directions for future development of collaborative consumption? The structure of the paper is as follows. In the next section we provide some background to the study. This is followed by a section detailing the methodology adopted. The fourth section provides the findings of the study – based on the final rankings and qualitative comments from respondents. Finally, the last section provides the conclusions and implications for future research, practice and policy-making.

Background

The drivers for collaborative consumption appear to fall into five main areas that have all begun to converge to some degree: political, economic, environmental, social and technological. The recent financial crisis has led some to question the problematic outcomes of capitalism (Quental et al., 2011; Roncaglia, 2012; Wright, 2009) and the necessity for consumers to buy and own so many assets, especially during a time of economic austerity. A search for alternatives has sought new mechanisms for people to share what they have to encourage more efficient resource use, improved social benefit, and reduced environmental pollution (Agyeman et al. 2013; Botsman and Rogers 2011). Unifying these drivers, the notion of sustainable consumption has become popular (Phipps et al. 2013).

Another key factor underpinning collaborative consumption is information technology, which is seen as both an enabler and a driver of collaborative consumption (John 2013). While the Internet

provided a conduit for new digital commercial activities and forms of e-commerce from the 1990s, such as Amazon and eBay, in the 2000s it provided a new platform for digitally-mediated social interaction via social network services (SNS), such as Facebook and Twitter. According to Nielsen (2011), social networking technologies are used by around three-quarters of active Internet users in major economies, including the US, UK, Japan, Germany, France and Brazil. Word of mouth (WOM) – which describes person-to-person communication such as personal recommendations – has been recognized for many years as an important element in distributing product and market information. Such communication tends to have more credibility and believability for consumers than formal marketing (Grewal et al., 2003). Combining converging elements of e-commerce, SNS and WOM, social commerce provides a very new and different value proposition, defined as "an emerging trend in which sellers are connected in online social networks, and where sellers are individuals instead of firms" (Stephen and Toubia, 2010, p. 215).

Business models are emerging that apply social networking technologies to further share goods and services such as cars, bikes, apparel, equipment, tools, residential spaces, money, skills and expertise (Botsman and Rogers 2011). Collaborative consumption provides peer-to-peer marketplaces where unused resources can be shared and is part of a wider "sharing economy" (Buczynski 2013; Gansky 2010) where the focus of consumption is shifting from product ownership to product access (Bardhi and Eckhardt, 2012; Rifkin, 2000).

Research into collaborative consumption is scarce. One stream of research has focused upon quantifying the economic benefits from sharing activities (Fraiberger and Sundarajan, 2015; Fremstad, 2014). Another stream of research has attempted to model the factors determining the decision of an individual to partake in sharing activities. Such antecedents have included those that are economic, environmental and social (Hamari et al., 2015; Möhlmann, 2015; Tussyadiah, 2015). However, such assessments are simplistic, and, as yet, no study has provided a comprehensive set of drivers of collaborative consumption informed by current practice. Similarly, little is known regarding the factors that are likely to hinder the success of collaborative consumption, or indeed,

where the trajectory of this phenomenon is headed in the future. This study attempts to fill this gap in understanding by using a tested technique for capturing and refining expert opinion based on the experiences of those who are actively working in the domain of collaborative consumption.

Methodology

Overview

The study utilizes the Delphi method to identify and hone the key items for each question investigated. The Delphi method dates back to the 1950s when it was developed and applied by the RAND Corporation to the US Air Force for capturing systematically and asynchronously expert input via iterations of questionnaires, typically pertaining to national defense (Linstone, 1999). From an academic perspective, the method was further developed and applied from the 1960s onwards, notably by Harold Linstone and Murray Turoff in TFSC (Turoff, 1970, 1971-2) and their seminal book (Linstone and Turoff, 1975). Since that time, the Delphi method has continued to progress and develop. There are now many variation of Delphi, including Classical Delphi, Policy Delphi, Decision Delphi, Ranking-Type Delphi, and others (Paré et al., 2013; Schmidt, 1997). Underpinning each application should be the fundamental principles of: 1. Anonymity; 2. Iteration; 3. Controlled feedback; and 4. Statistical "group response" (von der Gracht, 2012).

The Delphi method is now accepted as a valuable technique in academic research, and its application in academic studies has grown significantly, particularly from the 1980s onwards (Linstone and Tuoff, 2011; Paré et al., 2013; Rowe and Wright, 2011). More recently, there has been considerable progress in terms of providing recommendations and best practice for the procedures of Delphi studies (Hasson and Keeney, 2011; Kalaian and Kasim, 2012; Paré et al., 2013; Schmidt, 1997; von der Gracht, 2012), and these have been useful in this investigation. Recent applications of the Delphi technique to information technology have included IT project management (Kasi et al., 2008; Keil et al., 2013), software project risk management (Schmidt et al.,

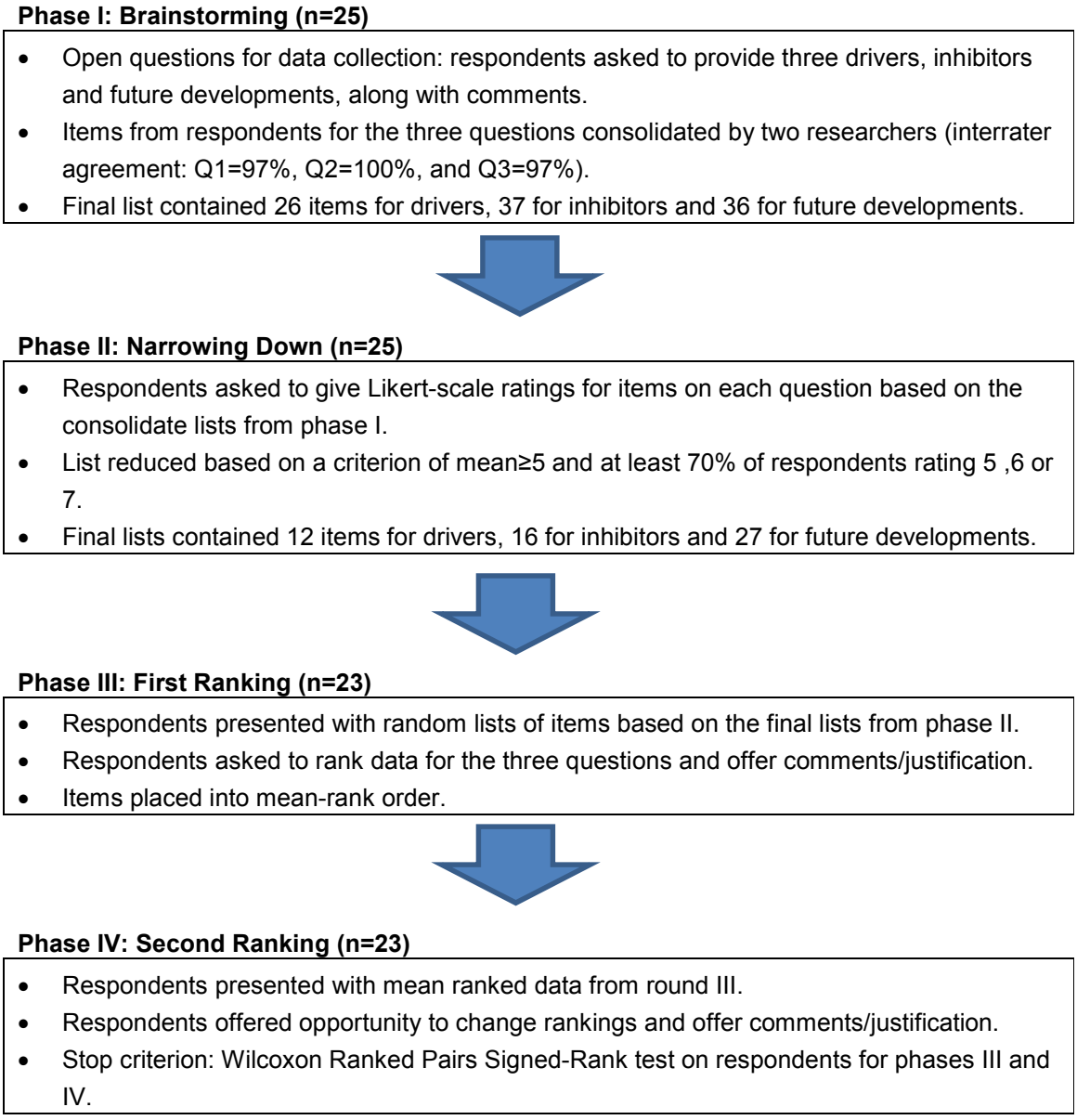
2001), IT outsourcing (Nakatsu and Iacovou, 2009), the impact of enterprise systems in the supply chain (Akkermans et al, 2003), and finally sustainable supply chain management (Seuring and Müller, 2008).

Procedures

Data were collected through the Qualtrics online data collection platform, enabling busy respondents to complete the phases of data collection in their own time. Data were collected from November 2014 to June 2015 in four phases. On average, each data collection phase ran for about a month, with two respondent reminders, with approximately a month between each phase. The phases are summarized in Figure 1, based on the recommendations of Schmidt (1997) for brainstorming, narrowing-down and ranking. In our study, we combine Likert- and ranking-type Delphi stages in order to benefit from the advantages of both. Specifically, ratings are used to establish opinion in phase II – where there are many factors, complexity and uncertainty – and rankings in phases III and IV, where items have been reduced and specific rankings can be more easily done by respondents and consensus measured.

A total of 25 experts involved in the sharing community were recruited from the Social Capital Forum – a global group of social entrepreneurs and impact investors – with the help of its founder, Bert-Ola Bergstrand. Panelists were invited directly via email. Details of the respondents are provided in Table 1. All respondents completed phases I, II and IV; two respondents were unable to complete one of the phases (phase III) due to work commitments and thus the amended details of that phase are provided. Overall, the gender of the respondents is approximately equal with 48% male. There are 14 countries represented in the sample: the majority in Europe, but around a quarter from elsewhere. Over half of respondents are active social or technological entrepreneurs involved with establishing businesses in the sharing economy (60%), whilst others are thought-leaders in academia, the public sector, other organizations, or independently.

Figure 1. Structure of the Delphi Process Used in the Study



Phase I of the study, brainstorming, was aimed at collecting as many items as possible for each of the three questions examined. The Appendix details the open survey questions provided to the respondents. Respondents were provided with a definition of collaborative consumption and asked to provide the three most important drivers, inhibitors and future developments of collaborative consumption in the next 10 years. Each item was expressed in the respondents' own language, typically including a detailed explanation and justification of the item presented. From the 75 items provided for each question, the researchers reduced the list using open and axial coding procedures. Agreement between the two researchers was 97% for Q1 and Q3 and 100% for Q2. After removing

overlapping, redundant or unclear responses, 26 agreed items remained for Q2, 37 for Q2 and 36 for Q3. These items were used for phase II and are detailed in Tables 2(a)-2(c).

Table 1: Delphi Respondent Profile across the Four Phases

Characteristic	Frequency	Percent
Gender		
Male	12 (11)	48% (48%)
Female	13 (12)	52% (52%)
Country		
Norway	2	8% (9%)
Spain	2 (1)	8% (4%)
Sweden	6 (5)	24% (22%)
United Kingdom	2	8% (9%)
United States	4	16% (17%)
Australia, Austria, Finland, Germany, Greece, Indonesia, Italy, New Zealand Romania	1 each	36% (39%)
Occupation		
Academic research	3	12% (13%)
Entrepreneur - Social	12 (10)	48% (44%)
Entrepreneur - Technology	3	12% (13%)
Public sector	2	8% (9%)
Social Innovator	4	16% (17%)
Think-tank	1	4% (4%)

Note: Data is for phases I, II and IV; numbers in brackets are for phase III.

Phase II of the study, narrowing down, focused on reducing the set of items further by response-group consensus via a Likert-scale assessment of the list. The Likert-scale provides a more appropriate method of evaluation where there is a high degree of uncertainty in a long list of items and gives the opportunity to identify items that are rated as most important, rather than an arbitrary list of rankings (von der Gracht, 2012). Respondents were asked to rate responses on a standard Likert-scale from 1=strongly disagree to 7=strongly agree, where 4=neutral and to provide additional comments both for justifying individual items and overall. The questions were phrased as follows:

Q1: “The most important current drivers of collaborative consumption are …”;

Q2: “The most important current inhibitors to collaborative consumption are ...”; and

Q3: “The most important developments to collaborative consumption in the next 10 years will be...”

Table 2(a): Ranking of Drivers of Collaborative Consumption

Item	Score							6&7 (%)	5,6&7 (%)			
	1	2	3	4	5	6	7			m	$\bar{x}$	SD
Cheaper transaction costs through IT	*0*	*0*	*1*	*0*	*5*	*9*	*10*	*76*	*96*	*6*	*6.08*	*1.00*
Technological enablers (Internet, mobile phones, smart technology)	*0*	*0*	*0*	*0*	*8*	*10*	*7*	*68*	*100*	*6*	*5.96*	*0.81*
Global economic crisis (including austerity and recession)	*0*	*0*	*1*	*1*	*4*	*12*	*7*	*76*	*92*	*6*	*5.92*	*0.99*
Digital relationships and social networking	*0*	*0*	*0*	*1*	*8*	*10*	*6*	*64*	*96*	*6*	*5.84*	*0.83*
Financial benefits for individuals (get more from less money, cost consciousness, need for cheaper alternatives)	*0*	*0*	*1*	*0*	*8*	*11*	*5*	*64*	*96*	*6*	*5.76*	*0.94*
More educated, IT-literate consumers	*0*	*2*	*0*	*3*	*5*	*12*	*3*	*60*	*80*	*6*	*5.36*	*1.34*
Need for more efficient resource use	*0*	*2*	*1*	*2*	*6*	*11*	*3*	*56*	*80*	*6*	*5.28*	*1.35*
Environmental sustainability (awareness of environment issues and concerns, sustainable development)	*1*	*0*	*2*	*2*	*8*	*7*	*5*	*48*	*80*	*5*	*5.28*	*1.48*
Willingess for social bonding	*0*	*1*	*2*	*3*	*5*	*13*	*1*	*56*	*76*	*6*	*5.20*	*1.24*
Cost of ownership	*0*	*1*	*1*	*2*	*11*	*9*	*1*	*40*	*84*	*5*	*5.16*	*1.09*
Societal change from individualism to local community	*1*	*0*	*3*	*3*	*5*	*10*	*3*	*52*	*72*	*6*	*5.12*	*1.51*
Lack of conventional employment opportunities	*1*	*1*	*1*	*3*	*9*	*7*	*3*	*40*	*76*	*5*	*5.04*	*1.43*
Reaction to over-consumption	0	2	3	3	7	6	4	40	68	5	4.96	1.55
Dislike of corporate blandness	0	1	0	8	10	5	1	24	64	5	4.84	1.02
A better, more personalised consumer experience	0	1	1	7	11	5	0	20	64	5	4.72	1.00
Ethics and fairness	0	1	3	4	12	4	1	20	68	5	4.72	1.10
Convenience	0	1	2	7	8	7	0	28	60	5	4.72	1.06
Individuals rebelling against "the system"	1	0	5	7	2	6	4	40	48	4	4.72	1.65
Price differential with incumbent business	1	4	0	4	9	5	2	28	64	5	4.56	1.58
Cultural change to more simple living	2	0	4	4	8	6	1	28	60	5	4.52	1.56
Media hype	3	1	3	8	4	2	4	24	40	4	4.24	1.87
Unviable old business models	0	6	2	1	12	4	0	16	64	5	4.24	1.50
Political empowerment and democracy	2	2	2	8	6	5	0	20	44	4	4.16	1.52
Globalisation	3	2	3	4	10	1	1	8	50	4.5	3.96	1.65
Legal enablers	4	4	1	8	3	4	1	20	32	4	3.72	1.85
Counter-reaction to racism and closing borders	4	8	2	7	2	1	1	8	16	3	3.08	1.65

Table 2(b): Ranking of Inhibitors to Collaborative Consumption

Item	Score							6&7 (%)	5,6&7 (%)	m	$\bar{x}$	SD
	1	2	3	4	5	6	7					
Lack of awareness	*0*	*0*	*1*	*1*	*6*	*7*	*9*	*67*	*92*	*6*	*5.92*	*1.10*
Establishing trust	*0*	*0*	*2*	*0*	*4*	*11*	*6*	*74*	*91*	*6*	*5.83*	*1.11*
Difficulty in building critical mass	*0*	*0*	*2*	*1*	*5*	*10*	*6*	*67*	*88*	*6*	*5.71*	*1.16*
Legal and regulatory issues	*1*	*0*	*2*	*0*	*6*	*7*	*8*	*63*	*88*	*6*	*5.63*	*1.53*
Materialist cultural norms	*0*	*0*	*0*	*4*	*6*	*9*	*5*	*58*	*83*	*6*	*5.63*	*1.01*
Vested corporate interests	*0*	*0*	*5*	*1*	*5*	*4*	*9*	*54*	*75*	*6*	*5.46*	*1.56*
Businesses framed as collaborative when they are not	*0*	*0*	*2*	*2*	*9*	*7*	*4*	*46*	*83*	*5*	*5.38*	*1.13*
Lack of targetted public sector support of collaborative consumption	*0*	*2*	*2*	*1*	*8*	*5*	*6*	*46*	*79*	*5*	*5.25*	*1.54*
Tax issues	*1*	*0*	*3*	*2*	*6*	*8*	*4*	*50*	*75*	*5.5*	*5.17*	*1.52*
Easily available, cheap goods	*0*	*1*	*2*	*5*	*7*	*4*	*5*	*38*	*67*	*5*	*5.08*	*1.41*
Cheap energy	*0*	*1*	*3*	*3*	*6*	*8*	*3*	*46*	*71*	*5*	*5.08*	*1.38*
Fear of strangers	*1*	*1*	*1*	*3*	*9*	*5*	*4*	*38*	*75*	*5*	*5.04*	*1.52*
Lack of accessibility for some individuals	*0*	*1*	*1*	*4*	*11*	*4*	*3*	*29*	*75*	*5*	*5.04*	*1.20*
Corporate propaganda and lobbying	*1*	*3*	*2*	*1*	*5*	*6*	*6*	*50*	*71*	*5.5*	*5.00*	*1.89*
Lack of IT infrastructure (e.g. broadband in some areas)	*0*	*2*	*1*	*3*	*8*	*9*	*1*	*42*	*75*	*5*	*5.00*	*1.29*
Entrenched old business models	0	1	3	5	5	6	4	42	63	5	5.00	1.44
Capitalism relies on planned obsolescence and hyperconsumption	*0*	*3*	*1*	*2*	*9*	*6*	*3*	*38*	*75*	*5*	*4.96*	*1.49*
Individual political passivity	0	0	5	4	7	4	4	33	63	5	4.92	1.38
Culture of independence	*1*	*2*	*0*	*3*	*8*	*9*	*1*	*42*	*75*	*5*	*4.92*	*1.47*
Fear of change / negative attitudes to the new	1	0	2	8	5	3	5	33	54	5	4.88	1.54
Difficult financial viability of new businesses	0	1	2	5	10	3	3	25	67	5	4.88	1.26
Lack of information/communication about products/services	1	1	0	6	8	7	1	33	67	5	4.83	1.34
Poor collaborative consumption practices	0	1	1	7	9	4	2	25	63	5	4.83	1.17
Insurance issues	2	3	1	2	5	8	3	46	67	5	4.71	1.90
Large initial investment required for start-ups	0	4	4	3	3	6	4	42	54	5	4.63	1.79
Security issues	0	3	2	5	8	5	1	25	58	5	4.54	1.38
Lack of technology literacy	1	3	2	4	7	5	2	29	58	5	4.50	1.64
Consumption as identity	3	0	4	3	7	4	3	29	58	5	4.46	1.82
Need for new technologies to facilitate collaborative consumption	1	3	4	3	6	4	3	29	54	5	4.42	1.74
Lack of individual time	1	2	1	8	10	0	2	8	50	4.5	4.33	1.37
Fear of impact on our economies	0	2	4	10	3	3	2	21	33	4	4.29	1.37
Inadequate service processes	0	3	3	8	7	1	2	13	42	4	4.25	1.36
Issues over payment mechanisms	1	2	5	7	4	3	2	21	38	4	4.17	1.55
Competition	1	2	3	10	6	0	2	8	33	4	4.08	1.38
Need for digital currency	1	3	5	4	7	3	1	17	46	4	4.08	1.53
Negative media coverage	1	6	5	7	2	1	2	13	21	3.5	3.58	1.59
Ethics and the environment	4	5	4	8	1	1	1	8	13	3	3.17	1.58

Table 2(c): Ranking for Developments in Collaborative Consumption in the Next 10 Years

Item	Score							6&7 (%)	5,6&7 (%)	m	$\bar{x}$	SD
	1	2	3	4	5	6	7					
Technological developments (including open source collaborative consumption software)	*0*	*0*	*0*	*0*	*6*	*10*	*7*	*74*	*100*	*6*	*6.04*	*0.77*
Greater acceptance of collaborative consumption	*0*	*0*	*0*	*1*	*5*	*10*	*7*	*74*	*96*	*6*	*6.00*	*0.85*
Broader technology adoption	*0*	*0*	*0*	*2*	*5*	*9*	*7*	*70*	*91*	*6*	*5.91*	*0.95*
Resource constraints (scarcity) impacting upon collaborative consumption pricing	*0*	*0*	*0*	*2*	*5*	*9*	*7*	*70*	*91*	*6*	*5.91*	*0.95*
Growth in relocalisation movement and cooperatives	*0*	*0*	*1*	*2*	*3*	*9*	*8*	*74*	*87*	*6*	*5.91*	*1.12*
Greater accessibility of collaborative consumption	*0*	*0*	*2*	*1*	*5*	*5*	*10*	*65*	*87*	*6*	*5.87*	*1.29*
Growth in the "Internet of Things"	*0*	*0*	*0*	*3*	*2*	*13*	*5*	*78*	*87*	*6*	*5.87*	*0.92*
New business models for collaborative consumption	*0*	*0*	*0*	*3*	*3*	*13*	*4*	*74*	*87*	*6*	*5.78*	*0.90*
Improved infrastructure for sharing	*0*	*0*	*0*	*3*	*6*	*7*	*7*	*61*	*87*	*6*	*5.78*	*1.04*
Co-creation, social and open innovation	*0*	*0*	*1*	*1*	*6*	*11*	*4*	*65*	*91*	*6*	*5.70*	*0.97*
Awareness of environmental issues and sustainability	*0*	*0*	*0*	*1*	*8*	*11*	*3*	*61*	*96*	*6*	*5.70*	*0.76*
Supportive legislation and regulation	*0*	*0*	*1*	*3*	*4*	*10*	*5*	*65*	*83*	*6*	*5.65*	*1.11*
Cross compatibility of digital platforms	*0*	*1*	*1*	*0*	*6*	*11*	*4*	*65*	*91*	*6*	*5.61*	*1.20*
Complementary currencies	*0*	*0*	*1*	*3*	*5*	*10*	*4*	*61*	*83*	*6*	*5.57*	*1.08*
Challenging ownership models and the growth of sharing	*1*	*0*	*1*	*0*	*6*	*11*	*4*	*65*	*91*	*6*	*5.57*	*1.34*
Developments in sharing of resources, e.g. food, co-housing	*0*	*0*	*3*	*3*	*3*	*6*	*8*	*61*	*74*	*6*	*5.57*	*1.44*
Standard, portable reputation metrics	*0*	*0*	*1*	*3*	*8*	*6*	*5*	*48*	*83*	*5*	*5.48*	*1.12*
Economic decline (i.e. worsening of global economy)	*0*	*1*	*1*	*1*	*7*	*9*	*4*	*57*	*87*	*6*	*5.48*	*1.24*
Big data and meta-systems	*0*	*0*	*1*	*4*	*7*	*6*	*5*	*48*	*78*	*5*	*5.43*	*1.16*
Growth in micropayments	*0*	*0*	*0*	*4*	*10*	*5*	*4*	*39*	*83*	*5*	*5.39*	*0.99*
Cultural change towards interdependence and networking	*0*	*0*	*2*	*3*	*5*	*10*	*3*	*57*	*78*	*6*	*5.39*	*1.16*
Clash between commercial and shared collaborative consumption models	*0*	*0*	*1*	*6*	*5*	*5*	*6*	*48*	*70*	*5*	*5.39*	*1.27*
Effect of public policy on collaborative consumption	*0*	*1*	*0*	*3*	*7*	*10*	*2*	*52*	*83*	*6*	*5.35*	*1.11*
Commercial shift from economy of products to economy of functionalities	*0*	*1*	*0*	*4*	*7*	*7*	*4*	*48*	*78*	*5*	*5.35*	*1.23*
Better technology education	*0*	*0*	*2*	*4*	*7*	*7*	*3*	*43*	*74*	*5*	*5.22*	*1.17*
Corporations move into collaborative consumption	*0*	*0*	*3*	*3*	*8*	*5*	*4*	*39*	*74*	*5*	*5.17*	*1.27*
Lower profit margins of traditional business	*0*	*1*	*1*	*2*	*10*	*8*	*1*	*39*	*83*	*5*	*5.13*	*1.10*
Clash between centralised and distributed collaborative consumption systems	0	1	1	6	5	6	4	43	65	5	5.13	1.36
Certification of collaborative consumption suppliers	*0*	*1*	*1*	*4*	*8*	*6*	*3*	*39*	*74*	*5*	*5.13*	*1.25*
Establishment of digital ethics	1	0	2	4	8	4	4	35	70	5	5.00	1.48
More specialised collaborative consumption websites	0	2	3	2	6	7	3	43	70	5	4.96	1.52
Better distribution of resources	0	2	0	7	7	4	3	30	61	5	4.87	1.36
An increase in user empowerment / less government control	1	0	3	5	5	6	3	39	61	5	4.87	1.52
Global technological unemployment	0	3	2	3	6	7	2	39	65	5	4.78	1.54
Domination by a few large collaborative consumption suppliers	0	1	5	5	7	4	1	22	52	5	4.48	1.27
Lower insurance cost	1	2	3	3	11	2	1	13	61	5	4.35	1.43

Hsu and Sandford (2007) suggest that the list of rated items can be reduced by focusing on those where more than 70% of respondents rated them positively (more than neutral) and where the median is more than neutral. Thus, in order to reduce the list of items further, two selection criteria were applied: items should both be considered as important (rated as 5, 6 or 7) by more than 70% of all respondents; and, the mean value of items should be at least 5.00 for all respondents, and thus considered important overall. After the application of these criteria, the final lists of items were 12 for Q1, 16 for Q2 and 17 for Q3. Selected items are shown in italics in Tables 2(a)-(c).

The questions for phases III and IV were the same as phase II. However, rather than using a Likert-scale assessment, respondents asked "Please click and drag the following statements so that they are ranked in order of importance, from top to bottom, with 1 being the most important." In phase III respondents were provided with items in random-order from phase II (based on the recommendations of Schmidt, 1997; Paré et al., 2013), while in phase IV, respondents were provided with items based on mean ranked data from phase III (to assist consensus, based on the recommendation of Schmidt et al., 2001). In each case, respondents were asked to offer comments and justification for rankings. After phase IV, we assessed whether responses had converged sufficiently in consensus in order to finish the data collection procedure (for the 23 respondents who completed both phases). We assessed the convergence, or similarity in rankings, across the two phases using the Wilcoxon Ranked Pairs Signed-Rank test, which has been recommended for this purpose in a number of Delphi studies on ordinal/ranked data (Kalaian and Kasim, 2012; Seagle and Iverson, 2002; von der Gracht, 2012; De Vet et al., 2003). The results of testing are shown in Tables 3(a)-3(c). As we can see, the ranks for the items in Q1 do not change significantly across phases III and IV (Table 3(c)), providing strong evidence that the data collection procedure should cease. Similarly, only one item for Q2 and two items for Q3 are significantly different across the two phases, and all three of these items are not in the top-10 ("Culture of independence" is ranked at 14th in Q2; and "Improved infrastructure for sharing" and "Greater accessibility of collaborative

consumption" are ranked at 13th and 26th place respectively in Q3. Thus, the stop criterion was applied and the final items were ranked and now ready for analysis.

Table 3(a): Wilcoxon Ranked Pairs Signed-Rank Test for Phases III and IV – Question 1

Item	Z	Asymp. Sig. (2-tailed)	Result (at p<.05)
Cheaper transaction costs through IT	-.401	.689	No change
Technological enablers (Internet, mobile phones, smart technology)	-.462	.644	No change
Global economic crisis (including austerity and recession)	-.925	.355	No change
Digital relationships and social networking	-.209	.834	No change
Financial benefits for individuals (get more from less money, cost consciousness, need for cheaper alternatives)	-1.092	.275	No change
More educated, IT-literate consumers	-.122	.903	No change
Need for more efficient resource use	-1.676	.094	No change
Environmental sustainability (awareness of environment issues and concerns, sustainable development)	-.474	.636	No change
Willingess for social bonding	-.326	.744	No change
Cost of ownership	-.300	.764	No change
Societal change from individualism to local community	-.440	.660	No change
Lack of conventional employment opportunities	-.071	.943	No change

Table 3(b): Wilcoxon Ranked Pairs Signed-Rank Test for Phases III and IV – Question 2

Item	Z	Asymp. Sig. (2-tailed)	Result (at p<.05)
Lack of awareness	-1.876	.061	No change
Establishing trust	-.595	.552	No change
Difficulty in building critical mass	-1.086	.278	No change
Legal and regulatory issues	-.788	.431	No change
Materialist cultural norms	-.768	.442	No change
Vested corporate interests	-.407	.684	No change
Businesses framed as collaborative when they are not	-1.907	.056	No change
Lack of targeted public sector support of collaborative consumption	.000	1.000	No change
Tax issues	-.570	.569	No change
Cheap energy	-.197	.844	No change
Fear of strangers	-1.357	.175	No change
Lack of accessibility for some individuals	-.619	.536	No change
Corporate propaganda and lobbying	-.791	.429	No change
Lack of IT infrastructure (e.g. broadband in some areas)	-1.847	.065	No change
Capitalism relies on planned obsolescence and hyperconsumption	-.423	.672	No change
Culture of independence	-2.458	.014	IV > III

Table 3(c): Wilcoxon Ranked Pairs Signed-Rank Test for Phases III and IV – Question 3

Item	Z	Asymp. Sig. (2-tailed)	Result (at p<.05)
Technological developments (including open source collaborative consumption software)	-.139	.889	No change
Greater acceptance of collaborative consumption	-.226	.821	No change
Broader technology adoption	-.746	.456	No change
Resource constraints (scarcity) impacting upon collaborative consumption pricing	-1.675	.094	No change
Growth in relocalization movement and cooperatives	-.666	.505	No change
Greater accessibility of collaborative consumption	-2.389	.017	IV>III
Growth in the "Internet of Things"	-.299	.765	No change
New business models for collaborative consumption	-.114	.909	No change
Improved infrastructure for sharing	-2.817	.005	IV>III
Co-creation, social and open innovation	-.341	.733	No change
Awareness of environmental issues and sustainability	-1.157	.247	No change
Supportive legislation and regulation	-.222	.825	No change
Cross compatibility of digital platforms	-.488	.626	No change
Complementary currencies	-.610	.542	No change
Challenging ownership models and the growth of sharing	-.679	.497	No change
Developments in sharing of resources, e.g. food, co-housing	-1.836	.066	No change
Standard, portable reputation metrics	-.097	.922	No change
Economic decline (i.e. worsening of global economy)	-1.096	.273	No change
Big data and meta-systems	-.365	.715	No change
Growth in micropayments	-1.754	.079	No change
Cultural change towards interdependence and networking	-.336	.737	No change
Effect of public policy on collaborative consumption	-.569	.570	No change
Commercial shift from economy of products to economy of functionalities	-.046	.964	No change
Better technology education	-1.852	.064	No change
Corporations move into collaborative consumption	-.260	.795	No change
Lower profit margins of traditional business	-1.853	.064	No change
Certification of collaborative consumption suppliers	-1.007	.314	No change

Results

This section details the findings of the study. In particular, we provide the final rankings from the data analysis enriched with qualitative comments provided by the respondents in the different phases. The results of the rankings in phases III and IV are shown in Tables 4(a)-(c). It is notable that the types of factors considered important were very different across the three questions: drivers (Q1), inhibitors (Q2), and future developments (Q3). Each of these will now be considered, in turn.

Table 4(a): Mean Rank of Phases III and IV and Final Ranking – Question 1

		III			IV		
Rank	**Item**	**Mean**	**SE**	**SD**	**Mean**	**SE**	**SD**
1	Technological enablers (Internet, mobile phones, smart technology)	3.70	0.52	2.48	3.48	0.61	2.91
2	Financial benefits for individuals (get more from less money, cost consciousness, need for cheaper alternatives)	4.17	0.69	3.30	5.00	0.70	3.34
3	Digital relationships and social networking	5.83	0.62	2.98	5.96	0.72	3.44
4	Cheaper transaction costs through IT	6.48	0.71	3.42	6.00	0.76	3.64
5	Lack of conventional employment opportunities	6.52	0.74	3.57	6.57	0.73	3.49
6	Willingness for social bonding	7.00	0.66	3.18	6.61	0.57	2.74
7	Cost of ownership	7.13	0.79	3.79	6.87	0.72	3.47
8	More educated, IT-literate consumers	6.83	0.66	3.14	7.13	0.75	3.57
9	Global economic crisis (including austerity and recession)	6.52	0.76	3.65	7.30	0.70	3.34
10	Societal change from individualism to local community	7.26	0.68	3.24	7.43	0.74	3.54
11	Need for more efficient resource use	8.91	0.62	2.95	7.65	0.62	2.98
12	Environmental sustainability (awareness of environment issues and concerns, sustainable development)	7.65	0.63	3.01	8.00	0.64	3.06

Drivers of collaborative consumption

Let us first consider the factors considered as the most important drivers of collaborative consumption. In examining Table 4(a), it becomes clear that technological and economic drivers are uppermost in the minds of the experts, with social to some extent, and, more particularly, environmental drivers, appearing lower in the rankings. Top of the list are "Technological Enablers" (1st), underpinned by the Internet, mobile phones and smart technology, whilst third in the ranking is "Digital relationships and social networking," another technological factor. In the words of one respondent in phase II, "without [technological enablers] it would not be possible - but it isn't because of the tech that people are doing it, it's thanks to the tech...It is an enabler rather than being a driver." Similarly, in phase III, another respondent stated, "The technological enablers and digital relationships/social networking are critical! None of this would be happening without them, or people's ability to use them."

Economic factors also rank highly, with "Financial benefits for individuals" ranked second, and described variously by respondents in phase I as "getting more for less money", "cost consciousness" and "the need for cheaper alternatives". However, one expert noted that "Most

studies show this as a key motivation for consumers to engage in these platforms – however this is usually only for the monetized platforms, rather than those that are non-monetized". Similarly, "Cheaper transaction costs through IT" combines economic and technological factors and is ranked at fourth, although one expert points out that this is likely to be "on a global scale, but not on a local scale". Further economic factors appear ranked at seventh – "Cost of ownership" – and ninth – "Global economic crisis". With respect to the cost of ownership one participant explained the differential effects on generation for physical and digital goods,

> "… looking at the silent or lost generations cost of ownership is irrelevant as where they are in their life stage means pension money makes purchase costs a minimal barrier, but for generation Y and X who have more young families and lower income to expenditure ratio this is a barrier so a lower cost of ownership does make a difference as now they can afford to take part in some collaborative consumption or are economically encouraged to do so to do, e.g., I cannot afford a car nor to buy my own house - so I use car pooling / sharing and stay with a hospitality housing service when travelling - so here a high cost of ownership is driving me to collaborate. In another example the low cost of owning clothes and consumer electronics or books means I will share these more freely … In this case digital sharing is increased by the low cost of distribution and there is a negligible ownership cost for example in keeping a film, book or game electronically on a laptop or phone. So here the low cost of ownership is driving collaborative consumption."

Regarding collaborative finance, which is a common way for start-ups in the collaborative consumption domain, surprisingly, one respondent stated, "It's much easier to remain independent by collaborative finance, cooperative- or crowd-funding - you don't need to find external investors."

Regarding the global economic crisis, one expert comment included "This certainly accelerated initiatives started decades ago against over consumption and its detrimental effects on our ecosystem, both on a physical and spiritual level." However, this was tempered by a clarification

from another Delphi participant, "[the effect of the global recession] is context specific … some forms of collaborative consumption are driven more by this than others, for example Freecycle-style models in countries under deep recession are driven more by this than using Airbnb as a guest, for example. I think it is diminishing as a driver, becoming less important."

A hybrid socio-economic factor, "Lack of conventional employment opportunities" is fifth, and relates to the use of labor resources through collaborative consumption. One respondent cautioned, "to a degree, for the labor force behind the ride-sharing and task collaborative consumption platforms this is the case, but for the most part, studies indicate this to be a very middle class phenomenon." Further social factors appear at rank six, "Willingness for social bonding", rank eight, "More educated, IT-literate consumers" (another hybrid factor), and rank ten, "Societal change from individualism to local community." Social bonding is recognized by one individual as being needed "for our mental health and people are becoming more aware of this". Further, it was noted that IT-literacy is both an enabler and a problem, "[IT literacy] definitely helps, but is also a big barrier because of digital divides ... both in terms of access to internet/smartphones but also due to digital illiteracy." Regarding societal change to local communities, one respondent noted, "In my opinion, this is the crucial societal paradigm shift that will make this movement endure and be sustainable." However, another expert suggested a possible tension, "This is tricky, because within the sharing economy there are two sides to it, the one that is about community, and the one that is more about libertarianism and strong individualism,- even if there might be value created through social networks."

Surprisingly, environmental factors appear to be the least important of those considered, with "Need for more efficient resource use" and "Environmental sustainability (awareness of environmental issues and concerns, and sustainable development)" ranking outside the top-10 at eleventh and twelfth respectively. There is perhaps a reason for the lower rankings – one expert comment included "for a certain sub-set of collaborative consumption users [environmental sustainability] is a key driver, for others it is inconsequential."

Table 4(b): Mean Rank of Phases III and IV and Final Ranking – Question 2

		III			IV		
Rank	**Item**	**Mean**	**SE**	**SD**	**Mean**	**SE**	**SD**
1	Lack of awareness	5.22	0.96	4.58	6.57	0.78	3.73
2	Materialist cultural norms	5.83	0.73	3.52	6.91	1.06	5.06
3	Lack of IT infrastructure (e.g. broadband in some areas)	9.30	0.91	4.38	7.22	1.04	4.97
4	Capitalism relies on planned obsolescence and hyper-consumption	7.91	1.08	5.20	7.48	1.03	4.94
5	Lack of targeted public sector support of collaborative consumption	8.00	0.95	4.56	8.09	0.96	4.59
6	Establishing trust	8.87	0.77	3.68	8.17	0.88	4.24
7	Businesses framed as collaborative when they are not	10.35	0.93	4.47	8.17	0.90	4.30
8	Fear of strangers	9.87	0.94	4.50	8.17	1.07	5.11
9	Legal and regulatory issues	7.48	0.87	4.15	8.22	0.88	4.22
10	Vested corporate interests	8.70	0.94	4.49	8.26	0.97	4.66
11	Difficulty in building critical mass	6.96	1.02	4.88	8.48	1.02	4.91
12	Lack of accessibility for some individuals	9.52	0.84	4.03	8.78	0.90	4.31
13	Tax issues	10.04	0.89	4.26	9.57	0.90	4.34
14	Culture of independence	7.17	0.78	3.73	10.00	0.82	3.94
15	Corporate propaganda and lobbying	9.35	1.07	5.11	10.26	1.01	4.85
16	Cheap energy	11.43	0.96	4.60	11.65	0.83	3.96

Inhibitors of collaborative consumption

Turning to the results for question 2 (see Table 4(b)), the most important inhibitors to collaborative consumption, we find quite different priorities among the expert respondents, with social and political factors being high on the list, and business and legal factors also surfacing as important. The most important issue perceived is “Lack of awareness” of collaborative consumption. Comments included that the “majority of population still isn't aware of the general trend” and “most people [have] actually never heard about [the] collaborative economy... we don't realize that when we talk about it every day, but that's a reality.” The second most important factor ranked was “Materialist cultural norms”, whilst technology, in particular “Lack of IT infrastructure” was third (“Lack of accessibility for some individuals” ranked twelfth). Respondents explained, “Access over ownership is still hard to accept for lots of people, who like to have their own cars, and things” and that “learned cultural values can be deep-rooted.” Even IT infrastructure was noted as a problem “even in rural areas in very IT developed countries.”

Political factors emerged at fourth and fifth in the rankings: “Capitalism relies on planned obsolescence and hyper-consumption” and “Lack of targeted public sector support” respectively. Hence, collaborative consumption seems to be regarded as a development beyond capitalism: as one respondent put it, “We are building a ‘post-capitalism”. The issue of targeted public sector support is explained in detail by one expert:

> “Institutions [such as] the EU work on old paradigms e.g. the “living labs” that excluded innovative projects and The Lisbon Agenda for Jobs and Growth that would only support those who already knew how to play the grant game. In the UK, it is shifting sands at all times, e.g., look at renewable energy and how funds are withdrawn at a drop of a hat and not strategically put into long term strategies but short term unsustainable projects. Academia is also required to provide immediate applied research and not basic research or to build a researcher/scientist technical skills base. In the US, this happened with Silicon Valley having long term US military funding and spin off projects. This has not happened in the EU.”

A social factor, “Establishing trust” ranked sixth, whilst “Fear of strangers” was eighth and “Culture of independence” fourteenth. Regarding the “Fear of strangers”, one respondent stated, “The interesting thing is that ‘fear of strangers’ seems to increase, rather then decrease, due to the misuse of some ‘business framed as collaborative when they are not.’” However, it was also noted that tools (particularly through social media) are now available to increase trust, “There are now pretty efficient tools, I think people trust each other quite easily if they have the good indicators...” However, related to the “Culture of independence” it was explained that “like ownership, when it's mine I don't have to plan or ask anybody” and “… it's a strong identity culture of owning.”

A number of business-related factors also appear in the top-10, including “Businesses framed as collaborative when they are not” at seventh, exemplified by the comment “… we are still in an ‘in-between’, where business as usual use the value created by the community for the interest of few

people." "Vested corporate interests" ranked tenth, "Difficulty in building critical mass" was eleventh and "Corporate propaganda and lobbying" appeared at fifteenth. Regarding critical mass, its impact on different business models was explained, "… critical mass is not so important for 'distributed collaborative consumption communities' ... just in a centralized view of collaborative consumption platforms … Look at www.openfoodnetwork.org to understand what I mean (more resilient when built on local independent communities)." Regarding corporate propaganda and lobbying, one participant suggested, "people are still manipulated by advertising, and it take time to free [themselves] from it."

Legal issues also emerged in the top-10, with "Legal and regulatory issues" ninth in the ranking, whilst "Tax issues" were thirteenth. As one expert put it, "Those models are not yet integrated in local laws, it's always an 'in-between different models', and as an entrepreneur you never know which rules will apply to you." However, interestingly another stated, "When the critical mass is reached the other issues will be solved – the pressure from the public will change laws and other regulatory issues."

Finally, at the bottom of the list was "Cheap energy", a sustainability-inspired response reflecting the belief that "the real costs of a good is still not in the market place."

Future developments in collaborative consumption over the next 10 years

The results for question 3, which examines the most import developments to collaborative consumption over the next 10 years, provides the largest and most diverse set of factors (see Table 4(c)). The top-10 factors include those that are environmental, economic, technological, social/cultural, business and legal. The top issue is "Awareness and environmental issues and sustainability" (1st) – the only environmental item in the rankings.

Many social or cultural issues appear in the rankings, focusing on different mechanisms to enhance sharing. These issues included "Co-creation, social and open innovation" (2nd), "Greater acceptance of collaborative consumption" (5th), and "Cultural change towards interdependence and

networking" (7th), but also "Challenging ownership models and the growth of sharing" (11th), "Growth in relocalization movement and cooperatives" (20th) and "Developments in sharing of resources, e.g. food, co-housing" (25th).

Table 4(c): Mean Rank of Phases III and IV and Final Ranking – Question 3

		III			IV		
Rank	**Item**	**Mean**	**SE**	**SD**	**Mean**	**SE**	**SD**
1	Awareness of environmental issues and sustainability	12.09	1.65	7.92	10.13	1.38	6.63
2	Co-creation, social and open innovation	11.09	1.54	7.36	10.43	1.69	8.12
3	Growth in the "Internet of Things"	11.39	1.75	8.41	11.43	1.68	8.06
4	Technological developments (including open source collaborative consumption software)	11.78	1.73	8.31	11.96	1.56	7.46
5	Greater acceptance of collaborative consumption	11.91	1.35	6.47	12.22	1.88	9.03
6	New business models for collaborative consumption	12.74	1.92	9.20	12.48	1.95	9.35
7	Cultural change towards interdependence and networking	11.91	1.59	7.63	12.65	1.93	9.25
8	Supportive legislation and regulation	12.61	1.58	7.57	12.91	1.52	7.27
9	Growth in micropayments	17.35	1.50	7.20	12.96	1.59	7.64
10	Commercial shift from economy of products to economy of functionalities	13.48	1.73	8.28	13.35	1.74	8.34
11	Challenging ownership models and the growth of sharing	12.22	1.72	8.26	13.70	1.43	6.87
12	Economic decline (i.e. worsening of global economy)	15.52	1.70	8.14	13.96	1.81	8.66
13	Improved infrastructure for sharing	7.09	0.93	4.48	14.35	1.62	7.78
14	Complementary currencies	13.39	1.63	7.82	14.39	1.78	8.52
15	Resource constraints (scarcity) impacting upon collaborative consumption pricing	17.48	1.44	6.91	14.43	1.45	6.97
16	Broader technology adoption	15.83	1.69	8.09	14.52	1.57	7.52
17	Cross compatibility of digital platforms	15.48	1.51	7.24	14.78	1.52	7.31
18	Better technology education	18.57	1.65	7.90	14.78	1.69	8.12
19	Lower profit margins of traditional business	18.57	1.31	6.29	14.78	1.24	5.94
20	Growth in relocalization movement and cooperatives	13.91	1.49	7.17	14.96	1.78	8.53
21	Certification of collaborative consumption suppliers	16.91	1.21	5.78	15.13	1.57	7.53
22	Effect of public policy on collaborative consumption	14.22	1.83	8.79	15.65	1.68	8.03
23	Corporations move into collaborative consumption	15.13	1.63	7.80	15.74	1.38	6.62
24	Big data and meta-systems	16.17	1.49	7.14	15.96	1.68	8.04
25	Developments in sharing of resources, e.g. food, co-housing	11.78	1.39	6.65	16.17	1.46	7.00
26	Greater accessibility of collaborative consumption	11.96	1.23	5.90	16.61	1.32	6.35
27	Standard, portable reputation metrics	17.43	1.51	7.24	17.57	1.46	7.00

Perhaps not surprisingly, technological issues were prevalent throughout the rankings, indicating that collaborative consumption would grow with further technological developments. Items included "Growth in the Internet of Things" (3rd) and "Technological developments (including open source collaborative consumption software)" (4th) in the top-10, but also items ranked 13th, 16th, 17th, 18th, 24th, 26th and 27th, relating to technology infrastructure, adoption, platform cross-

compatibility, education, big data systems and reputation metrics. It was argued by one expert that technological developments would "make it much easier to start a local initiative for zero cost.". Regarding big data, one comment received was that this would enable "Relocalizations, [where] we recreate small local communities, but all connected to one another, and who exchange with one another." Reputation metrics received a mixed set of responses, including that "this will help, again if done in an effective way. If done poorly- this could bring about serious problems" but also that "This is [a] myth; that we can somehow force gamification-like reputation metrics in a movement that is not always online."

Economic factors were less important in the rankings and focused on the medium of exchange and change to the economy. The highest ranked are "Growth in micropayments" (9th) and "Commercial shift from economy of products to economy of functionalities" (10th), followed by "Economic decline (i.e. worsening of the global economy)" (12th), "Complementary currencies" (14th) and "Resource constraints (scarcity) impacting upon collaborative consumption pricing" (15th). One expert predicted the possible changes in the global economy,

> "… economic decline in Europe, USA and China and economic improvement in the Brazil, India, Africa means overall an economic improvement at the global level - though individuals may see it differently if they do not have the global perspective. China cannot continue to improve at the rate it has done since 2000 as the resource usage is too high to be sustained and the pollution levels are too high, but it may be 8 years before this impact hits or it may be 5 or 13 so it is hard to predict."

Several business issues were also considered important by the experts, including the possible "New business models for collaborative consumption" (6th), pressures from "Lower profit margins of traditional business" (19th) and the related item, "Corporations move into collaborative consumption" (23rd). Pragmatic factors influencing the development of new business models were suggested by one participant,

"… new models that make sharing, collaborative offerings the most convenient offerings is what is needed to allow for a broad-based spread and use of collaborative consumption. i.e. widespread acceptance and use will not be driven mainly by sustainability concerns, but of pure convenience and value-for-money."

Regarding the move into collaborative consumption by corporations, it was argued that this was a "… double-edged sword - in many respects in the early stages, this will likely help bring more people into this new way of consuming … however, it could pose risks to the rise of alternative ownership structures for collaborative consumption platforms."

Finally, there were several issues related to the impact of future legislation and public policy: "Supportive legislation and regulation" (8th), "Certification of collaborative consumption suppliers" (21st) and "Effect of public policy on collaborative consumption" (22nd). One expert summed up the critical influence of Government on the future of collaborative consumption: "The legal frameworks and public sector will play an important role - the public sector also makes key decisions in relation to infrastructure, whether that is high speed broadband or different urban forms that facilitate sharing." This is further supported by another respondent,

"As someone who works in the public sector and who has actively pushed for this approach to be applied not only by, but within government operations where appropriate, public sector support (or lack of) and how it is carried out, has the potential to be either a huge barrier or enabler of collaborative consumption. Both [tax and legal issues] relate to a public sector role. It also relates to [lack of awareness], and the rise of the 'precariat', which is part of a bigger issue - who OWNS collaborative consumption platforms, and who benefits. The tax issues will be of concern, but the biggest current barrier seems to be grey legal territory."

Summary and Conclusions

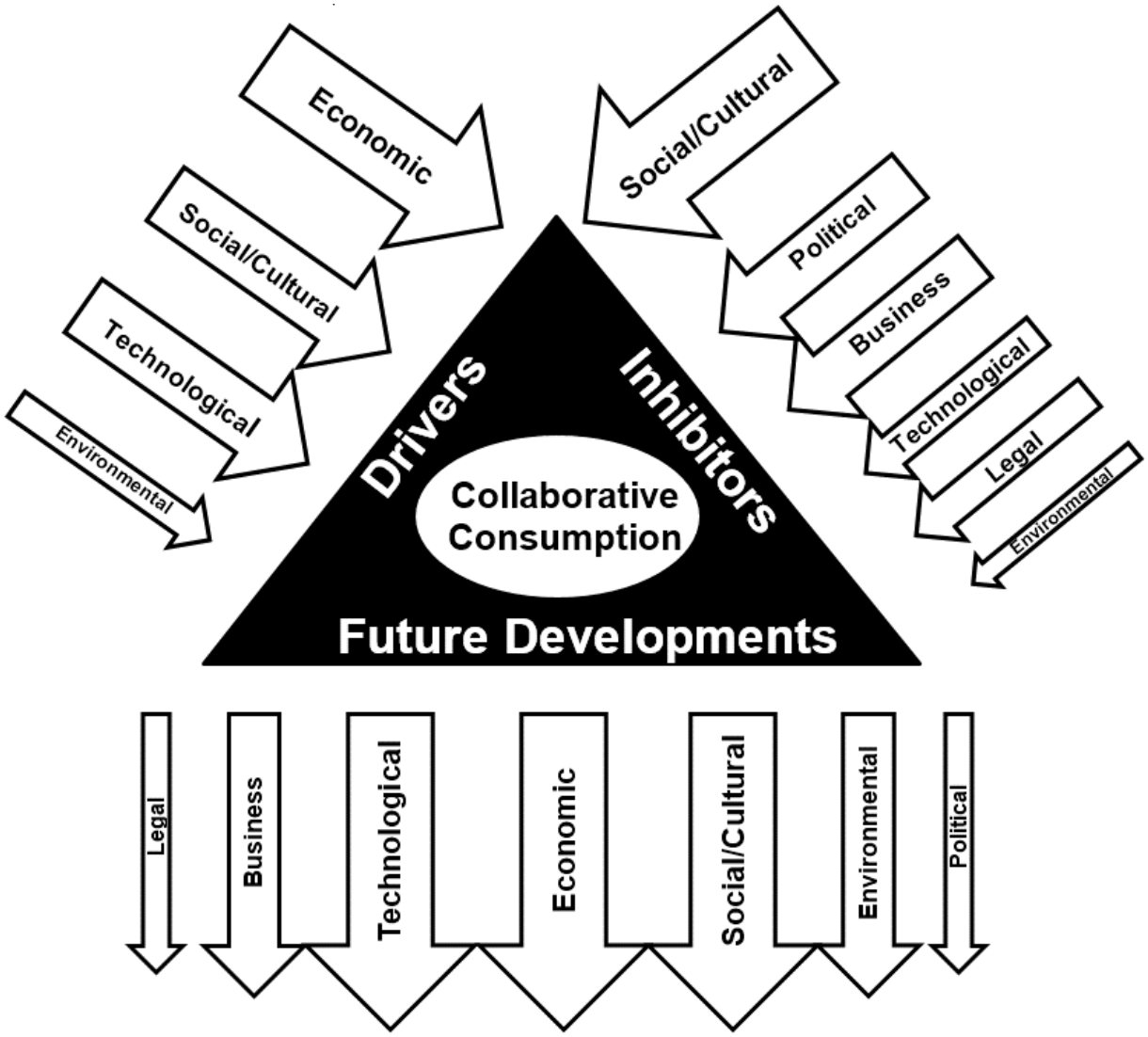
The results of the Delphi are summarized in Figure 2. This is the result of totaling items from different categories across the three questions, sizing the arrows in the figure according to the resulting weights, with the largest being the most important to that question[1]. As we can see from the figure, the largest current drivers identified by our experts are economic, underpinned by economic problems and a need to economize, although technological drivers through mobile devices, social media and the Internet, and social/cultural drivers are also very important. Sadly, environmental drivers to collaborative consumption did not appear to be very important at the current time.

In contrast, the current inhibitors to collaborative consumption are quite different. The social and cultural features of the attitudes and behaviors of consumers appears to be by far the biggest barrier to overcome. It also appears that politics and the behaviors of government and businesses are problematic to the rapid development of the sharing economy through collaborative consumption. Lesser inhibitors include those that are technological, e.g. through infrastructure, legal, including through legislation and taxation, and environmental. Future developments in collaborative consumption do not appear to match the current inhibitors, indicating a chasm that will be difficult to cross in the coming years. Economic developments will continue to be important, thereby providing future drivers for sharing activity. Future technological and social/cultural developments will also be substantial, adding impetus to the coming wave of collaborative consumption initiatives. However, there is little expectation among our experts of notable progress in developing political or business solutions in the next 10 years. Similarly, legal issues are unlikely to be completely resolved. A case in point is the current pending issue of the employee status of Uber

[1] The arrows for drivers, inhibitors and future developments are sized according to the importance of each particular category as perceived by respondents. In order to calculate the weight of a category, the following procedure was used. 1. Each item on a list for Q1, Q2 and Q3 was allocated a broad category, such as "technological" or "economic". 2. The value for each item was calculated based on a score of $v=(n+1)-r$, where n is the total number of ranks and r is the ranking of a specific item. 3. A score for each category was calculated based on Σv for that category. 4. Arrows for categories are sized according to scores, with larger arrows indicating higher scores. Similar scores are clustered with the same sized arrow for clarity and parsimony.

drivers in the US. However, there is an expectation of environmental issues emerging to be more important in the next decade.

Figure 2. Weighted Categories of Drivers, Inhibitors and Future Developments from Delphi



Collaborative consumption promises to bring a radical change in consumer purchasing and consumption, with implications that are both online and offline, potentially presenting a phenomenon as important to economies in the coming decade as e-commerce was during the last decade. Not surprisingly, there is intense commercial interest in these developments from retailers and manufacturers. Other sectors such as hotels, banking, recruitment and trade services are also likely to experience significant impact from these new models, as are those providing digital

technologies and platforms for collaborative consumption, as well as infrastructural and supporting services such as social networking, payment, telecommunications (increasingly mobile) and logistics. Further, impacts also include possible downsides in the third sector, e.g. the impact on charities and charitable giving, although these were not noted by our experts.

There are, as yet, no accurate and scientifically informed predictions as to the future growth and impact of collaborative consumption. Our research has relevance to Government and regulatory bodies, who have an obvious interest in supporting new business development in the economy and in developing policies governing sharing activities, including, e.g., social development, consumer protection and taxation. We expect that research into collaborative consumption may contribute to the encouragement of business that is based on principles of sustainability that is now particularly relevant during the economic downturn and of benefit to society more generally. We believe that this research provides a deeper understanding of the nature and impact of collaborative consumption and we hope that it contributes to further research about the impacts of the sharing economy.

Rounding off, one respondent comment helps to summarize the key factors behind the adoption and growth of collaborative consumption: "widespread acceptance and use will not be driven mainly by sustainability concerns, but of pure convenience and value-for-money." Hence, we may see the interplay between drivers, inhibitors and future developments in our model as a mechanism for a cognitive shift in society to make the best use of money, time and resources by overcoming social/cultural and political inhibitors.

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Appendix: Round 1 - Delphi Survey

For this study we define collaborative consumption as…

"The use of online marketplaces and social networking technologies to facilitate peer-to-peer sharing of resources (such as space, money, goods, skills and services) between individuals, who may be both suppliers and consumers. Example websites include AirBnB, TaskRabbit and Zopa."

Please consider the following questions and type your answers in the boxes provided:

1. What are currently the three most important drivers of collaborative consumption?

2. What are currently the three most important inhibitors to collaborative consumption?

3. What will be the three most important developments to collaborative consumption in the next 10 years?