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Sorting things out: A typology of the digital collaborative economy

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Abstract

Current research on the sharing or collaborative economy has by large adopted a user-centric approach, and studies at the meso-level (firm/organization level) have received little attention and is called for both in the literature and by the Organisation for Economic Co-operation and Development (OECD). This paper contributes to the meso-level by presenting a framework — a typology — based on the literature and an analysis of 54 services in the collaborative economy (*e.g.*, Airbnb, Uber, and Blablacars). The paper suggest that when classifying sharing services, we need to direct our analytical lens to dimensions from the organization and strategy literature, such as two-sided business models and organizing principles, network effects and value, and other strategic dimensions. A definition of the collaborative economy that includes these dimensions is proposed, which is helpful for regulators, start-ups, and for researchers in avoiding research flaws.

Contents

Introduction

The sharing phenomenon can be traced back to sharing among close family members and friends (Dredge and Gyimóthy, 2015; Belk, 2014). The origins of the first types of online sharing economy initiatives date to 1995 with the founding of eBay and Craigslist, two marketplaces for recirculation of goods (Schor, 2014). The development and growth of Web 2.0 has enabled online platforms that promote user-generated content, sharing, and collaboration to blossom (Hamari, *et al.*, 2015; Kaplan and Haenlein, 2010). In early 2000, society started to utilize the Internet to increase efficiency by linking the online and off-line world and the sharing economy became one of these initiatives (Cheng, 2016; Botsman and Rogers, 2010). In the beginning, the sharing practices were believed to be not-for-profit initiatives, such as Coachsurfing, but has gradually grown into a big business model by taking a fraction, or a cut of the sharing fee (*e.g.*, Airbnb) (Belk, 2014; Cheng, 2016). These sharing platforms are predicted to represent considerable value; for example, the gross revenue in the European Union (EU) from sharing platforms and providers was estimated to be EUR 28 billion in 2015 (European Commission, 2016). However, what the sharing economy actually is and what kind of services these platforms facilitate are less clear, and the concept of the 'sharing economy' has been criticized extensively (Schor, 2014). A number of alternative concepts have been set forth, for example, 'collaborative consumption', the 'collaborative economy', 'gig economy', 'on-demand economy', and 'peer economy', to mention a few [1].

How one defines 'sharing economy' logically determines how sharing services or platforms are approached and systematized. Several different classifications has been set forth, *e.g.*, Botsman and Rogers (2010), Schor (2014), Lamberton and Rose (2012), Martin (2016), and Smith (2016). However, these scholars have different definitions and list different characteristics of the sharing economy, in which might reflect the scholars' different research foci. Three main research foci are observed in the literature of sharing economy; (1) business models and its impact (*e.g.*, P2P renting, market in terms of time and needs); (2) the nature of the sharing economy (sharing as an alternative consumption practice); and, (3) sustainability development (*e.g.*, innovation, social and economic

benefits) [2].

The sharing economy has a strong intellectual tradition from lifestyle and social movement field and sharing paradigm, and with its development scholars have created different constructs of the sharing economy based on their discipline background (Cheng, 2016). Cheng's (2016) comprehensive review of the sharing literature reveal five clusters of theoretical foundations in the literature on sharing economy. These are (1) lifestyle and social movement; (2) consumption practice; (3) sharing paradigm; (4) trust; and, (5) innovation. While research within the first three clusters often site each other, the latter two are formed within themselves, which suggests that these lines of work is not very integrated in the main sharing economy streams (Cheng, 2016). Thus, the construct lacks a common definition and a theoretical unity (Cheng, 2016; Newlands, *et al.*, 2017). This sheds light on why previous classifications or typologies of the sharing economy is divergent, and no clear conceptual framework has not yet emerged (Russo and Stasi, 2016).

Moreover, current research on the sharing economy has by large adopted a user-centric approach, and studies at the meso-level (firm/organization level) have received little attention. Studies at the meso-level is important so we better can understand the operating models and mechanisms of digital sharing services (Cheng, 2016). With a clearer and more applicable framework that synthesizes the different typologies in the literature, a more precise definition of the 'sharing economy' can be offered. This is called for by the Organisation for Economic Co-operation and Development (2016). Also, this would be helpful for scholars in avoiding research flaws. For example, by overlooking key features of the platforms studied, scholars risk generalizing the validity of their findings for all kinds of platforms, services, motivation, and roles.

The contribution of this paper to the literature is its interdisciplinary approach, by integrating new theories into the sharing economy literature and its meso-level of analysis. These are promising areas for future research on the sharing economy [3]. Insights into the business models and mechanisms of digital sharing services is called for and highly needed to assist governmental regulation and policies, and strategy formulation of the start-ups and thus economic growth, because although a few have enjoyed great success, many have failed [4].

Based on an in-depth analysis of 54 tips of online collaborative platforms and the literature, a typology of the key characteristics of digital services in the sharing economy is in this paper presented as a first step towards developing a more unified model of services in the sharing economy. In the remaining, I will (European Commission, 2016) use 'collaborative economy' in preference to 'sharing economy' because it corresponds better with the definition I propose later in this paper.

Literature review and theoretical approach

Definitions of the sharing economy

As said, no shared definition of the sharing or the collaborative economy exists in the literature, and the term has been heavily criticized (Schor, 2014). Many scholars are inspired by Botsman's (2015) and Botsman and Rogers' (2010) definition (*e.g.*, Newlands, *et al.*, 2017) that defined 'sharing economy' as the peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services. Scholars studying people's motivation for participating in sharing services (*e.g.*, Bucher, *et al.*, 2016) have typically stressed motivation in their definitions, often building further on Belk (2007) in their understanding and approach. Stephany (2015) suggests that collaborative economy is organized by "the value in taking under-utilised assets and making them accessible online to a community, leading to a reduced need for ownership" [5]. Belk (2014) place peer's cooperative role around resources at the heart in his definition, "people coordinating the acquisition and distribution of a resource for a fee or other compensation" [6].

The European Commission (2016), however, does not distinguish peers from businesses in their definition. According to the European Commission, three categories of actors are involved in the collaborative economy: (1) service providers who share assets, resources, time and/or skills; (2) users; and, (3) intermediaries. Service providers can be private individuals offering services on an occasional basis ('peers') or service providers acting in their professional capacity ('professional services providers'). Intermediaries connect — via an online platform — providers with users and facilitate transactions between them ('collaborative platforms') [7].

Categorizations of the collaborative economy

Botsman and Rogers (2010) categorized the collaborative economy into three market systems: (1) product service systems (one uses, rents, exchanges, or borrows other's products or services); (2) redistribution markets (product that is no longer used is sold to someone that has a use for it); and, (3) collaborative lifestyle systems (people with shared interests or needs connects and exchange time, keys, money, knowledge). Schor (2014) identified four types of "transactions" taking place within these systems: (1) recirculation of goods; (2) increased utilization of durable assets; (3) exchange of services; and, (4) sharing of productive assets.

Moreover, in Schor's framework, market structure (profit/non-profit) and market orientation (peer-to-peer or business-to-peer) determine the platform's business model, its exchange logics, and the service's potential to disrupt (change fundamentally) traditional businesses. Inspired by Ostrom (2003), Lamberton and Rose (2012) conceptualized different types of shared goods on the basis of their rivalry and exclusivity. Martin (2016) systematized in his study how entrepreneurs, innovators, businesses, policy-makers, media commenters, and academic researchers tend to frame the different innovations at play in the collaborative economy. Smith (2016), in turn, distinguished labour (work) platforms from capital (products) platforms. Belk (2014) noted two common characteristics of businesses that flourish in the wake of the collaborative economy: (1) their use of temporary access by non-ownership models to exploit consumers' goods and services; and, (2) their dependence on the Internet, particularly Web 2.0. While the first will be shown later in this paper to play a key role in my approach (two-sided markets), the latter would be valid for all Internet-based services and is not restricted to the collaborative economy.

Business models and two-sided markets

Although the strategy literature does not hold a shared definition of what a business model is (Chesbrough, 2007; Zott, *et al.*, 2011), one common understanding is that it is a company's map of how its business will be profitable and generate revenue. A business model is a system that identifies customer(s), engaging with their needs, delivering satisfaction, and monetizing value (Baden-Fuller and Haefliger, 2013). The European Commission (2016) places the notion of a 'business model' at the heart in their definition of the collaborative economy:

> Business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals. [8]

Although both the European Commission (2016) and Schor (2014) mention 'business model' in their definitions, they say little about how these platforms create value and what kind of values that are nurtured by these platform's business models. Russo and Stasi (2016) express their concerns to the overlap between the concepts of the market and the business model in discussions of the sharing economy, as the former can comprise more than one of the latter. Russo and Stasi (2016) argued, 'For many scholars, the sharing economy describes "a rise of new business models ('platforms')" (...) these definitions attribute a key role to online platforms, which are the most typical example of firms adopting a two-sided business model'. However, 'two-sidedness' should refer either to markets or to business models, but not to platforms *per se* (Russo and Stasi, 2016; Baden-Fuller and Haefliger, 2013). Technology makes it possible to design unique business models (Chesbrough, 2007), but what is two-sided is the business model that the platforms choose, or the market in which they operate, not the platforms (Baden-Fuller and Haefliger, 2013).

A one-sided market gains its value from a single group of users. Instant messaging or telephone lines are examples of one-sided markets. Two-sided (or multi-sided) markets, however, are markets in which one or several platforms enable interactions between end users and try to get the two (or multiple) sides 'on board' (Rochet and Tirole, 2006). These firms sell two different products or services to two different groups of customers, where the demand from one group of customers (in our case, Airbnb guests) depends on the demand from the other group (Airbnb hosts). Platforms help to coordinate or match the participation of the two parties in which both are users of the platform. It is beneficial for both user-groups to let a platform facilitate their contact because it reduces the interaction costs for both groups so that all are better off and receive positive network effects (see the next section) through using the platform (rather than trying facilitate your service or asset on your own). This points to a key difference from other kinds of firms, such as for example the food delivery bicycle service Foodora. Although the Internet plays a key role in Foodora's business model (customers can book food from restaurants via an app, and a Foodora cyclist will bring the order to the customer), the firm serves and profits from clients, just as McDonald's do, and *not of the clients' resources*.

Furthermore, the same company can operate with several business models (and in several markets), and the same market can be exploited in many different ways (Russo and Stasi, 2016). For example, the same collaborative economy platform might facilitate different kind of markets (*e.g.*, work tasks or sell/rent/give away assets) or approach different kinds of service providers (peers versus businesses) or customers (holiday versus business travellers) within the same platform market (*e.g.*, Airbnb).

Network effects and value

A resource-based strategy view of competition (Penrose, 2009) holds that firms gain an advantage by controlling scarce and valuable assets or resources that are difficult to copy. A business model should be able to link two dimensions of firm activity, namely (1) value creation; and, (2) value capture (Amit and Zott, 2012; Zott and Amit, 2010; Baden-Fuller and Haefliger, 2013). Value creation (the perceived benefit to the customer) identifies customers and how are they engaged, and value capture (changes in the production chain) identifies how value is delivered and monetized (Baden-Fuller and Haefliger, 2013). On the Internet, companies can profit significantly on resources that do not belong to them (Tapscott, 2001). Thus, the goal in collaborative business models is not to sell more products or services, yet to increase interactions among the platform's participants in the network and thus indirectly profit from these interactions and their resources. A network's value depends on the

structure of the network. Network effects in a one-sided market gain value from a single group of users by attracting more users. This are seen as a *same-side exchange*.

With collaborative online services, the assets that are hard to copy are the community and the resources its members own and contribute (*e.g.*, rooms, cars, ideas, and information) (Van Alstyne, *et al.*, 2016). In other words, in collaborative services the network of producers and consumers is the chief asset, *e.g.*, Airbnb hosts and guests. Such two-sided markets are comprised of two distinct categories of participants where an increase in the number of users (*e.g.*, Airbnb guests) on one side of the market creates an increase in the other side (*e.g.*, Airbnb hosts). This enables a *cross-side exchange* benefit (Gallaugher, 2011). The interdependency among guests and hosts at Airbnb creates indirect (positive) network effects, as the value of the platform for one group of users grows with the growing user base on the other side of the platform (Baden-Fuller and Haefliger, 2013). While Foodora's business model is to sell more to clients (although they reduce their costs due to bikers using their own bikes for transportation), Airbnb's business model seeks to increase the number of interactions between guests and hosts.

Thus, getting one step closer to a more clear definition of the collaborative economy would require including the two-sided market dimension and to highlight the idea that connections between participants create a certain value, namely the value of network effects. Network effects arise when the value one user places on a good depends on how many other people use it (Shapiro and Varian, 1999). Network effects make very high growth curves possible because the value of a network increases exponentially with each new network member. Thus, collaborative services depend on a critical mass of users to achieve network effects, which in turn contribute to an advantageous position and role in the marketplace.

Organizing principles and management

It is critical to a company's success that its business model, organizing principles, and strategic management are complementary (Zott, *et al.*, 2011; Chandler, 1962; Whittington, 1993). Organizing involves designing structures and processes that control and coordinate organizational activities (Fjeldstad, *et al.*, 2012). The main difference between the marketplace and the organization is hierarchy as organizing principle (Williamson, 1973). Hierarchy assists an organization to maintain order, maximize efficiency, and eliminate favouritism (Weber, 1971). Hierarchy provides control, coordination, and differences in power, rank, and status.

Internet-based organizational models or networks (*e.g.*, Airbnb), make it possible for larger groups of participants to 'self-organize', meaning they can achieve control and coordination primarily through direct interaction between themselves (Kolbjørnsrud, 2014). Organizational principles in collaborative platforms are egalitarian. This means that collaboration and interaction among participants are coordinated through autonomy, peer-based control, and self-organizing principles where control and coordination occurs between parties themselves (Kolbjørnsrud, 2014). Dimensions, such as formal authority (which is rooted in the formal contract between employer and employee in traditional organizations), are therefore absent in these organizations (Gulati, *et al.*, 2012).

Whilst controlling organizational resources is a key practice in traditional organizations (Penrose, 2009), managing resources in virtual organizations require less control and more orchestration — facilitating resources rather than controlling them (Van Alstyne, *et al.*, 2016; Carnes, *et al.*, 2016) because collaborative platforms hold assets that platform members, not the organization, own (Tapscott, 2001).

A key role in this self-organizing principle is trust. Rating systems in many of these collaborative services are a key element in creating trust among parties. However, few, if any, scholars include rating systems in their definitions of a collaborative economy.

Even though the members of these organizations are independent and autonomous, they are obliged to follow a given platform's or network's rules, motives, and values through their organizational memberships (Snow, *et al.*, 2011). However, participants control their own time and assets, and they decide themselves whom they want to connect or encounter.

Organizing principles and managing practices of internal resources are thus important dimensions for services that would be characterized as part of a collaborative economy.

To sum up, this literature review demonstrates that definitions of the sharing or collaborative economy lack a component that better explains how these platforms create value. Based on the discussion in this section, and Russo and Stasi's (2016) explanation that a definition of the sharing economy needs to include the two-sidedness that characterizes these platforms or services, I propose the following definition of the collaborative economy:

> The collaborative economy refers to two-sided (or more) market business models that enable, due to the Internet and technology, at least two groups of participants (persons or companies) to connect directly via a technological asset (platform, app), or on demand, with one another and whose interactions and transactions of their own assets or services between the parties create positive network effects and thus network value to the platform/app owner. Payment and rating

> systems, which are the property of and controlled by the platforms/apps, are two key trust components in these business models. Self-organization and autonomy are organizing mechanisms, yet the platform members must comply with the platform/app's rules, whereby sanctions are implemented when the rules are not followed. The platforms/apps gain revenue by taking a fraction of a sharing fee.

This definition differs from the more commonly used definition in the literature that define the collaborative economy in terms of the use of under-utilized resources (Cheng, 2016). As previously noted, current research on the sharing economy has by large adopted a user-centric approach, and studies at the meso-level (firm/organization level) are called for (Cheng, 2016). By using the concept 'collaborative' in preference of 'sharing', the aspect of two-sidedness is highlighted, as well as denoting that engagement or transactions among participants in collaborative services is not restricted to non-profit or altruistic behaviours.

A key difference between my definition and e-commerce or other online business models is that membership in a community or platform is needed in order to gain a given asset or service. Moreover, in collaborative services, participants control their connections (they, and not the platform/app, choose whom to connect with). While comparison and travel services (*e.g.*, Booking.com or TripAdvisor) earns substantially all of their revenue through click-based advertising (Cocotas, 2011), a key element in business models in the collaborative economy is taking a fraction of a sharing fee (Belk, 2014; Cheng, 2016).

This definition, and the typology presented below, contributes to the literature by integrating other relevant theories with sharing economy research [9]. I will use this definition when I categorize the 54 tips of collaborative platforms in the analysis later in this paper.

Methodology

As a first step in a larger qualitative research project in Norway (Pettersen *et al.*, 2016) about the collaborative economy, an online list at list.ly [10] was launched on the Internet in September 2016 to secure an overview of the many different kinds of collaborative platforms available in the Norwegian marketplace. The aim was to get a better overview of the diversity of these kinds of services. This overview was an important step for the following case sampling in the later qualitative case study (Pettersen, *et al.*, 2016).

Data collection

We chose list.ly as main data collector platform because it was user friendly, open in its nature so everyone in the public could add tips, and because the site presented contributions with a good overview. Our research assistant's e-mail address was also provided on the site for those that did not wanted to add tips themselves. The researchers published tips that were e-mailed to them at list.ly. A number of platform tips were added to the list by researchers involved in this study.

The list was shared on social media (Twitter and Facebook) by research institutions involved in this study, as well as by researchers themselves, and was promoted on institutional Web sites. The intention of the list was to get an overview in a quickly changing marketplace of different kinds of collaborative platforms and services at play. Although the list did not capture all existing collaborative services in Norway, it did illustrate the breadth of different types of collaborative services.

Each individual interpreted what a 'sharing economy service' might be because we wanted to include all kinds of services that the public might classify as part of a 'sharing economy'. By inviting openly for tips, we were also able to reveal many different platforms or services that were often labelled as examples of a collaborative economy by the public.

Data analysis

The 54 tips available on the list as of October 2016 were analyzed by three researchers in a two-day analysis workshop. We began the analysis by asking questions such as the following: How does the business (platform owner) create value? Who are the customers/participators that the business directs it services to? What kinds of control mechanisms characterize a given business? What kind of sector does a business direct its attention to (*e.g.*, transportation and food)? Can we define a given market (peers, businesses)? What kind of role do participants hold in a given platform? To what degree does a platform decide which party is connected with another? What kinds of transactions occur (buying, borrowing, etc.) and what types of services are provided (products and work)? What kind of value is created?

Several of the platforms were categorized into more than one category because platforms often offered several services and having several business models (*e.g.*, click-based advertising) within the same platform.

During the workshop, tips were categorized back and forth along several dimensions based on

questions asked. After the workshop, the final version of the typology presented in this paper was adjusted according to business models and further in accordance with the literature, as described earlier in this paper.

Tips on the list.ly list were not quality assured or updated due to little stability in this marketplace. However, the goal of this study was not to capture all kinds of collaborative platforms or all varieties of online digital business models, but rather to capture a snapshot of the breadth of different types of services that exist, as a starting point in developing a conceptual framework (Russo and Stasi, 2016; Organisation for Economic Co-operation and Development, 2016). Hence, this typology should not be seen as comprehensive. It is a first step and an attempt to create an overview that we hope can be further developed by future research.

Analysis

Typology

I will first present the typology in this section. Then I will elaborate on the seven different dimensions in this typology, followed by presenting each model in detail where examples of businesses/services are offered.

TYPOLOGY OF ONLINE MODELS									
	Business as usual		Entrepreneurs	Cooperatives	Collaboratives				
	Assets/Services		Services	Assets	Assets		Services		Gifts
Model									
Who controls the connection among participants?	The enterprise decides whom to connect. Parties are clients.	The platform facilitates connections. Parties are clients.	Suppliers facilitate the relationship among participants in two-sided markets.	Cooperative, co-owner. Participants decide the connection.	Network participants choose whom to connect directly.	Network participants choose whom to connect directly.	Network participants choose whom to connect directly.	Network participants are connected directly through the on-demand principle.	Network participants choose whom to connect directly.
What kind of system?	Productivity/sales. Work/capital systems	Productivity/sales. Work/capital systems	Service marketplace. Work systems	Product-service systems. Capital systems	Redistribution systems. Capital systems	Product-service systems. Capital systems	Productivity. Work systems	Productivity. Work systems	Collaborative lifestyles systems
Strategic management?	Resource control.	Resource control.	Resource control.	Resource control	Resource orchestration	Resource orchestration	Resource orchestration	Resource orchestration	Resource orchestration
Main value in business model?	Profit.	Profit.	Profit.	Economic exchange.	Ecosystem and network value (network activity and network effects)	Ecosystem and network value (network activity and network effects)	Ecosystem and network value (network activity and network effects)	Ecosystem and network value (network activity and network effects)	Non-profit. Reciprocity and social exchange. Network value (network activity and network effects)
Market dimension?	One- or two-sided market	One- or two-sided market	One-sided market	One-sided market	Two-sided market	Two-sided market	Two-sided market	Two-sided market	Two-sided market
Goal?	Growing sales	Growing sales	Growing sales	Growing membership	Growing interactions	Growing interactions	Growing interactions	Growing interactions	Growing interactions
Organizing principles?	Hierarchy, formal contract with parties	Hierarchy, formal contract with parties	Hierarchy, formal contract with parties	Hierarchy, formal contract with parties	Autonomy, self-organizing, yet must follow the platform's rules and routines.	Autonomy, self-organizing, yet must follow the platform's rules and routines.	Autonomy, self-organizing, yet must follow the platform's rules and routines.	Autonomy, self-organizing, yet must follow the platform's rules and routines.	Autonomy, self-organizing, yet must follow the platform's rules and routines.

Table 1: Typology based on 54 tips of different collaborative platforms. Please note that the typology does not capture all types of online business models, only the ones we revealed when analyzing 54 'sharing economy' platforms. A risk with listing companies as examples is that they often have several business models, change quickly, and reach out to different markets. Thus, each service offered by a single platform needs to be studied in preference of one specific platform. This is important not only to avoid research flaws, but also because different pieces of legislation are at play for different services and participant roles. P=peer; B=business.

Note: Larger version of table available here.

Dimensions in the typology

As a starting point, the top box in the typology (see Table 1) presents a visual illustration or model of the relationships among parties in a business/platform. Following the European Commission (2016), the typology does not distinguish private persons ('P') from businesses ('B') because the main focus with the typology is not scale, but business models and other key characteristics.

Who controls the connection among participants?

The first dimension in the typology classifies a service based on control and hierarchy. The more a service controls a connection between parties/participants, the more it is considered as a traditional, yet online, firm, with characteristic hierarchy and thus power differences (Weber, 1971). Whether the parties have the opportunity to make their own decisions about whom to connect or engage with is thus a key differentiator in considering the relationship as a collaborative economy service. In the cases where an enterprise decides which parties to connect with, these participants would typically be a given firm's clients.

What kind of system?

The second dimension considers the kinds or types of activities that take place within a service or platform. Here we find Botsman and Rogers' (2010) three systems: (1) product service systems; (2) redistribution markets; and, (3) collaborative lifestyles systems.

The systems/dimensions in this typology vary from traditional businesses, which aim to increase productivity in the workplace and increase sales or services, to the distinction between product and work platforms in a sharing economy, as suggested by Smith (2016).

Strategic management?

How a firm manages resources differs from traditional and hierarchical organizations and Internet-based organizations. Whilst controlling organizational resources would be a key practice in traditional firms (Penrose, 2009), managing resources in Internet-based organizations require orchestration (facilitation, matching) (Van Alstyne, *et al.*, 2016) because these organizations frequently hold assets that they do not own (Tapscott, 2001). Thus, the strategic management of organizational resources is likely to differ in traditional firms and collaborative platforms.

Main value in the business model?

The fourth dimension in the typology relates to two key aspects of a firm's activity: how a given corporation or platform service creates and captures value. Any classic business model should be able to link strategy to these two dimensions (Zott and Amit, 2010; Amit and Zott, 2012; Baden-Fuller and Haefliger, 2013). While a traditional business typically obtains their main values from customers and sales, the main value that collaborative platforms creates is network value (network activity and network effects).

Market dimension?

Following logically from the previous dimension is whether an organization is characterized by reaching out to a one- or two-sided (or more) market. The heart of collaborative services is connecting two groups of different participants. Thus, business models in sharing platforms are by default two-sided (or multi-sided) markets. These are markets where one or several platforms enable interactions between end users (Rochet and Tirole, 2006). Thus, the business facilitates two different products or services from two different groups of customers, where the demand from one group depends on the demand from another group. Platforms help to coordinate the participation of buyers and sellers (in which both are users of the platform) to reduce the interaction costs for the two groups of users so that all parties receive positive network effects through using the platform. However, a given technology and platform are *per se* only technological instruments. What is two-sided is the business model that the firm chooses or the markets in which it operates (Baden-Fuller and Haefliger, 2013).

Goal?

The sixth dimension interplays closely with the differences described above, as it hinges on whether a firm's overall goal is to gain profits from growing sales (and thus business as usual) or if it is to increase the number of interactions among participants. The latter would typically be valid for businesses in the collaborative economy, where the overall goal would be to gain network effects, increasing returns, and lock in positions. Network effects arise when the value one user places on a good depends on how many other people use it (Shapiro and Varian, 1999). Securing a critical mass of participants is thus a key part of gaining network effects.

Organizing principles?

The seventh and final dimension in the typology concerns organizing principles. As previously stated, it is critical for a company's success that its business model, organizing principles and strategic management are complementary. Organizing involves structuring resources in ways that control and coordinates activities (Fjeldstad, *et al.*, 2012). Internet-based organizations make it possible for larger groups of participants to 'self-organize' so that that they can achieve control and coordination primarily through direct interaction (Kolbjørnsrud, 2014). Thus, key characteristics in collaborative services are a more egalitarian structure with mechanisms such as autonomy, community resources, and peer-based control. The participants (peers or businesses) are independent and autonomous actors, which are obliged to follow the platform or network rules, motives, and values through their platform memberships. The seventh dimension in the typology thus distinguish between businesses based on having the characteristic hierarchy with a formal contract between parties and those having organizing principles of autonomy and self-organization. Moreover, due to an egalitarian structure, rating systems are key design components in creating trust among parties when control mechanisms

are weak.

Models

Based on the literature and the seven dimensions described earlier, the 54 tips were categorized into a typology consisting of four main models: (1) business as usual; (2) entrepreneurs; (3) cooperatives; and, (4) collaboratives. Geolocation functionality is a characteristic that is at play in all four models. Geolocation is possible due to technological advancement, similar to paying for services or products online.

The analysis revealed that there are often several different services within the same technological platform. This poses challenges when attempting to place *one* platform into *one* category. This also illustrates that regulating *platforms* could be misleading and that the business models of services instead should be the foci in discussions about regulations. Norwegian Finn.no, for example, a classified advertisements Web site and the largest Norwegian Web site in terms of number of page views, has sections devoted to jobs, housing, cars, sales, travel, and services. Finn.no's services are classified in the typology both as business as usual and collaboratives.

Moreover, several services approach different markets within the same platform. Services offered at Airbnb's platform, for example, reach out to three consumer markets: home rentals, business stays, and guided tours/experiences. Similarly, the same organization might have several different business models. Hertz, for example, is a well-known car rental business, yet they also offer Hertz Carpool, which has the characteristics of a business model that is classified in the typology as a *cooperative*. This suggests that it would be more useful to classify services and business models rather than platforms. With this shift in focus, regulators would need to look beyond platforms *per se*. Additionally, we might be able to reduce research flaws because we can seldom generalize findings from one specific digital platform that facilitates several services and business models.

Furthermore, because participants hold different roles (buyers versus sellers), the same service can be classified as an asset (*e.g.*, a food dish) and as work (*e.g.*, preparing the food dish). Thus, perspective plays an important role as the same service might be classified in several categories.

Moreover, in regard of regulatory questions, short-term rental businesses at Airbnb that direct their services to the business travel segment clearly differ from those listings where an owner lives on site on a regular basis. EU legislation, however, does not expressly establish at what point a peer becomes a professional services provider in the collaborative economy (European Commission, 2016):

> In fact, a specific feature of the collaborative economy is that service providers are often private individuals offering assets or services on an occasional peer-to-peer basis. At the same time, increasingly micro entrepreneurs and small businesses are using collaborative platforms. [11]

Our analysis (Pettersen, *et al.*, 2016) also revealed that established companies — and not only micro entrepreneurs or small businesses — enter sharing platforms with their products or services. In the sales ads at Finn.no, for example, professional companies publish ads on different products. These ads are marked in the platform, so the consumer can easily see whether they are dealing with a business or a peer. Similarly, professional landlords often uses companies that are classified as entrepreneurs in the typology, yet their role is not often communicated clearly to guests/customers (Pettersen, *et al.*, 2016).

I now present the four main models in the typology and its nine sub-models.

Business as usual

Business as usual denotes traditional firms, in which business models are aligned with the Internet. Although these companies might have different business models, they share the fact that they serve clients. Of the 54 tips on sharing economy services/platforms shared in the list.ly list, 12 were classified as *business as usual* in our analysis. Most of these tips were from businesses that facilitated work services to clients, for example, eWork, Gelato, weClean, Zappy, Uwork, Mojob, Konsensus, Vpark, or Livin. These are services similar to temp agencies or consulting firms in which a client orders a product or a service, and the business connects the right resource, competence, or product to that customer. The business model in Foodora and Togoodtogo are also categorized as *business as usual*.

Business as usual organizations control and coordinate resources (connections or sales among their customer groups). The model is categorized in the typology into two sub-models to illustrate that the connection principle might also be automated in these services. Both sub-models share the notion that the overall goal is to grow sales and gain profit, not to increase the degree of interactions between participants or to benefit from assets or belongings of participants.

The business model in *business as usual* firms might be one- or two-sided (or more). Foodora, for example, connects three parties: the customer, the restaurant, and a bicyclist/food delivery. However,

these platforms profit from sales, similar to a traditional pizza delivery company or any ecommerce service where the goal is sales and not increased interactions among sellers or buyers.

Entrepreneurs

The second category of services revealed in the analysis was *entrepreneurs*. These are new kinds of businesses established in the wake of the collaborative economy that offer their services to players in these platforms. Four of the tips were classified as *entrepreneurs*: Lotel, Inkeys, Easybnb, and Shakebox. Though *entrepreneurs* is listed as a separate model in the typology, these organizations are also *business as usual*. The *entrepreneurs* category is separated from *business as usual* because these entities are players that nurture relationships between participants in collaborative services. Pettersen, *et al.* (2016) found that the users do not always know they are dealing with a company and rank these individual entities, although the owner of an asset earns a rating.

Kosintceva (2016) labelled these firms' business model as a service marketplace. They are companies that provide additional services to one or both sides of the customer segment in collaborative platforms. Entrepreneurs are suppliers that facilitate the relationship among participants in two-sided markets. For example, these include firms that facilitate connections with their customers' customers. They manage administration for providers; for example, they communicate and deal with consumers in the platform, provide keys, and clean and prepare an apartment for a landlord. The goal for *entrepreneurs* is profit by growing sales in their services.

Cooperatives

The third bulk of services identified in our analysis revealed six businesses labelled as *cooperatives*. These businesses are different kinds of carpools or car rentals (*e.g.*, Hertz Carpool or Norwegian Bilkollektivet). The term *cooperatives* denotes consumer cooperative services consisting of two, and not three, parties, where the participants are co-owners or partners in terms of assets (*e.g.*, cars) that the platform facilitates. Thus, the value is a reciprocal exchange because participants are co-owners, as one party buys a share of the community to enjoy organizational resources. The community own the resources, and the organization has employees who facilitate the operation and maintenance of communal resources (administration, etc.). Cooperatives are typically one-sided markets where one platform connects users (lenders) with assets (cars).

Collaboratives

The forth model in the typology — *collaboratives* — is the heart of the collaborative economy according to the definition proposed in this paper.

The interdependency among groups of users of these services creates indirect (positive) network effects, as the value of the platform for one group of users grows with the growth of the user base on the other side of the platform (Baden-Fuller and Haefliger, 2013). The parties whose activities are connected enter a relationship, which is more collaborative than sharing in nature. In the literature, collaboration is a process whereby individuals — often from different business units — provide significant help to each other [12]. In the context of this paper, participants enter a collaborative relationship in which one party wants to enjoy another party's resource or service with an exchange of some kind of monetary fee. Only three tips at list.ly were services categorized as gifts (see below), free products, or services. Thus, the concept of the 'collaborative economy' stresses one aspect that the 'sharing economy' ignores: a joint goal when entering a collaborative process that is beneficial for both parties.

The platforms in *collaboratives* assist in coordinating the participation of buyers and sellers (both users of the platform) to reduce interaction costs for the two groups of users so that all participants are better off and receive positive network effects through using the platform. In *collaboratives*, autonomy, self-organization, and peer-based control are organizing mechanisms (Kolbjørnsrud, 2014) and thus key facets in organizational design. Although the participants are independent and autonomous actors, they are obligated through their platform memberships to follow the platform or network rules, motives, and values (Fjeldstad, *et al.*, 2012). The organization orchestrates resources rather than controlling them. The main value is network value (network activity and network effects), and the goal is to grow the number of interactions. A key characteristic with collaborative platforms is that participants have control over contacts. Even Uber drivers can — in theory — choose their passengers.

In *collaboratives*, participants offer their own assets or resources (products) and services (work) for selling, lending, buying, borrowing, giving away, or gaining for free. Thirty-two of the 54 tips on the list.ly list are classified in the typology as one of the sub-models in the category *collaboratives*. Furthermore, in the typology, collaborative entities are divided into three sub-models because they differ from one another by conveying (1) *assets* (products); (2) *services* (work); or, (3) *gifts* (free goods and services).

Assets

Although Botsman and Rogers (2010) did not distinguish assets from services in their categorization, our analysis finds that this is an important distinction because the first regards different transactions of products, and the second concerns services, and thus, labour and work (see below). This distinction

is important because different pieces of legislation come into play regarding the specific sub-model. Building further on Botsman and Rogers (2010), who distinguish redistribution systems from capital product-service systems, two models of collaborative assets are listed in the typology to separate transactions and participants that sell/buy from those renting out space or products.

Examples of collaborative firms include Airbnb and different services that allow users to buy and sell things or to rent or lend out their resources, such as Letgo, Snapsale, or Tise, services where participants can borrow their neighbour's car, boat or trailer, other sports gear, or other kinds of tools and gadgets.

Services

Following the distinction between capital and work platforms, as suggested by Smith (2016), one sub-model in the *collaboratives* category are those services that facilitate working tasks and thus productivity, rather than sales of products or assets. Amazon Mechanical Turk is an example of this sub-model. A key characteristic with this sub-model is that participants control their own work time. The main difference between the two sub-models in collaborative services is the on-demand principle, whereby service availability and price depend on a supply and demand principle (*e.g.*, Uber). Another important difference between the two sub-models is the automated process of connecting two groups of participants: buyers and sellers, and customers and service providers. Tips at list.ly classified in this model are amongst others, Finn småjobber ('small job tasks'), Cando (short-term work tasks listed in an online platform), Jyb (an online matching service between work tasks and the work force), Nimber (package transportation by persons), Uber and Haxi (transportation services for people), and the Hjemmekokker (English translation, *home chefs*), Grabster, Resterant, and Nabomat (food dishes prepared in private homes).

Gifts

The final sub-model among the collaboratives category are *gifts*, that is, free goods, services, or experiences, similar to Botsman and Rogers' (2010) collaborative lifestyles. While the tips categorized as collaborative assets and collaborative services were equally distributed, only three tips at list.ly were categorized as gifts: Coachsurfing, the Finn.no giveaway market, and Kom inn (English translation, *Come on in*, a service managed by a voluntary organization where foreigners eat dinner together with a Norwegian family and learn to speak Norwegian).

Here we find entities where the participants offer their goods, services, or experiences to others for free. Participants in these services do not exchange economic value, but value in terms of reciprocity and social exchange. With giving follows reciprocity (Mauss, 1966), where the return in this sub-model perhaps lies in a rating score provided after a deal is finished, or altruistic motivation (it feels good to do something nice to others), as noted by Belk (2007).

Business models denoted as *collaboratives* in the typology most often have rating systems embedded in their technology.

Discussion and concluding remarks

The starting point of this paper was a suggestion that a conceptual framework and a shared definition of the collaborative economy was needed (Organisation for Economic Co-operation and Development, 2016). As a first step in this direction, I followed suggestions by Russo and Stasi (2016) and Baden-Fuller and Haefliger (2013) to place our analytical attention on the two-sidedness that characterizes these organizations, rather than platforms. What is two-sided is not the technology but the business model, or the market in which collaborative platforms operate (Baden-Fuller and Haefliger, 2013).

Following this approach, and based on the literature, I began by proposing a more specific definition of the collaborative economy as consisting of two-sided (or more) market business models that enable, due to the Internet and technology, at least two groups of participants (persons or companies) to connect directly via a technological asset (platform, app), or on demand, with one another and whose interactions and transactions of their own assets or services between parties create positive network effects and thus network value to the platform/app owner.

Payment and rating systems, which are the property of and controlled by platforms/apps, are two key trust components in these business models. Self-organization and autonomy are organizing mechanisms, yet platform members must comply with platform/app rules, whereby sanctions are implemented when rules are not followed. Platforms/apps gain revenue by taking a fraction of a sharing fee.

Building on this definition, previous categorizations of the sharing economy (Botsman and Rogers, 2010; Schor, 2014; Lamberton and Rose, 2012; Martin, 2016; Smith, 2016) and 54 tips on collaborative services at play in Norway were further analyzed and categorized along seven dimensions: (1) Who controls the connections among the participants? (2) the type of system, (3) strategic management, (4) the main value in the business model, (5) the market dimension, (6) the goal, and (7) organizing principles.

After analysing the literature and the 54 tips according to the seven dimensions, four models in the typology were revealed: (1) business as usual (12 tips); (2) entrepreneurs (4 tips); (3) cooperatives (6 tips); and, (4) collaboratives (32 tips). Based on dimensions and definitions, the models *business as usual, entrepreneurs*, and *cooperatives* are not listed in the typology as part of the collaborative economy. *Collaboratives*, however, hold all the characteristics that are at the heart of the collaborative economy, summarized in Table 2:

Table 2: Characteristics of services or firms in the collaborative economy.

Characteristics	Collaboratives
Control	• Network participants choose whom to connect directly or due to the on-demand principle.
Strategic management	• Resource orchestration.
System	• Redistribution, product-service, collaborate lifestyles, gifts, and work.
Value	• Network value (network activity and network effects).
Market dimension	• Two- or multiple-sided market.
Goal	• Growing interactions among participants and gaining a critical mass of at least two groups of users (supply and demand).
Organizing principles	• Autonomy, self-organization, but must follow platform rules and routines. Rating system is a key trust mechanism.

The typology has implications for governmental regulations since it illustrates differences between capital and work platforms. It also has implications for research. For example, scholars studying different aspects of the collaborative economy have paid little attention to what kinds of services a given platform enables. All too often, the 'sharing economy' is used to describe online services and business models that are listed as four different models in the typology presented in this paper. For example, Amazon Mechanical Turk and Toogoodtogo are both discussed and studied as examples of a 'sharing economy'. In the typology, Amazon Mechanical Turk is classified as a *collaborative service* (work), and Toogoodtogo is listed as *business as usual*, yet with a business model aligned with the Internet. Future research should examine similarities and differences between participation and motivation in the typology's four different models and its nine sub-models.

This research is not without limitations. Only 54 platforms were analyzed, and the majority of these were Norwegian. As stated, the typology must not be mistaken to be complete. Rather it is a first step for creating a more robust framework of online services that we typically list as examples of the collaborative economy and does not cover all kinds of online business models. Future research should develop the typology further, as new online business models emerge quickly. Future research on the collaborative economy should also look further into emerging regions because to date, research on this topic has been conducted from a Western perspective and in Western regions (Cheng, 2016).

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Notes

1. See Dredge and Gyimóthy (2015) for a comprehensive overview of constructs denoting the sharing economy in different disciplines.

2. Cheng, 2016, pp. 63–65.

3. Cheng, 2016, pp. 66–68.

4. Cheng, 2016, p. 67.

5. Stephany, 2015, p. 205.

6. Belk, 2014, p. 1,597.

7. European Commission, 2016, p. 3.

8. *Ibid.*

9. Cheng, 2016, p. 68.

10. Please refer to http://list.ly/list/1ELE-delingsokonomien-eksisterende-tjenester.

11. European Commission, 2016, p. 5.

12. Hansen, 2009, p. 14.

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