

Designing an Innovative Networked Business Model

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The abundance of decentralized, yet organized online communities has fundamentally changed the way business operates. These firms are often defined as being part of the “sharing economy” or “collaborative consumption”. Academic literature has heralded the disruptive power and profitability of these firms, however, existing business pedagogy fails to keep up with the change. For example, most descriptions of the business model retain a firm-to-customer dynamic. While traditional firms retain this model, collaborative consumption businesses are peer-to-peer networks and adopt community structures more similar to traditional online communities than traditional, pre-internet firms or those using pre-internet logic. With the dominant logic shift, the authors seek to redesign the business model as a community network; based on predetermined knowledge found in business model and online community literature

With this shift of companies to communities, the authors call upon literature from design management, business model innovation and prototyping to redesign the business model. The result of this process is a design innovation tool, which frames the collaborative consumption business model as a three-tiered model. The business model retains little hierarchy compared to previous models, where all members are actors in a wide network.

Keywords: *Collaborative Consumption; Sharing Economy; Business Model Innovation; Business Model Design*

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Introduction

The advent of the internet has led to the generation of the largest decentralized community of users in human history. This is not a new concept. Yet it is only recently that the true power of such community driven initiatives is being fully comprehended. The cooperation between individuals over the internet has not just distributed, but led to the creation of content, fully fledged operating systems like Linux (Pitt, Watson, Berthon, Wynn, & Zinkhan, 2006), repositories of knowledge like Wikipedia and powerful, albeit illegal, file sharing networks which have forced change in the entertainment industries. However, Tapscott and Williams (2006, p14) describe these instances as simply, 'the canary in the coal mine – the first casualties of a revolution that is sweeping across all industries'.

This prediction appears to be correct, with monetized peer-to-peer networks shaking transportation, education, short-term employment, and hospitality industries to their core. Examples such as Uber, Task Rabbit and Airbnb have absorbed early media attention achieved through first mover status in the market, yet represent only a fraction of the total number of similar firms adopting this peer-to-peer strategy. These firms leverage users to both create and consume goods and services, while simply taking a fee for facilitating the transaction.

What is clear about these firms is that the brand, product and community are inseparable and the structure less hierarchical than the organization of traditional product and service providers (Botsman & Rogers, 2010). These new firms exemplify the collaborative consumption (CC) phenomenon, coined by Botsman & Rogers (2010). Howe (2009), in discussing crowdsourcing (an antecedent to CC and associated terminology), discusses this change in structure; the blur between producers and consumers, firm and customer. Traditional business structures are being overhauled.

With new structures inevitably comes ambiguity and existing literature on these types of business models is scant. An exception is Belk (2014) who provides implications for new and incumbent business in a CC setting, yet the implications are largely adaptations of existing business model strategies such as the "Freemium" model, acquisitions and mergers.

Herein lies the problem at the centre of this paper; a two faceted problem faced by practitioners and researchers alike. Firstly, for business leaders and entrepreneurs, both within incumbent and emerging ventures, CC firms have begun to modify the business landscape. For researchers, current literature is ill equipped to aid during this change, which inhibits

future knowledge and new insights. At the root of this problem is the current conceptualization of the business model paradigm based primarily on the industrial era business model. These existing frameworks fail to fully define a new wave of companies born in the era of social network consumers where companies generate value and revenue from peer-to-peer interactions rather than strict business to customer transactions. With millennial customers often referred to as the 'digital native', the authors describe these companies as 'digitally native' businesses.

Rather than bend the community into existing business models, this paper proposes bringing the business model into the community. To create this new conceptual business model, the authors draw on design management literature and design training to guide the process for three key reasons. First, the forward thinking nature of design. Dorst (2010, 2011) links Design Thinking and the way designers work to a specific way designers solve problems; the use of abductive logic as opposed to inductive or deductive reasoning. This forward thinking logic is found across much of design literature (see: Liedtka and Ogilvie's "What If" stage of Designing for Growth (Liedtka, 2011)). This approach enables an individual trained in design methods to shed preconceptions of the business model to create one anew. Second, is the human centred approach of design. As the paper involves reconceptualising the business model as a community of actors, a design-led approach is undeniably valuable in managing the interests of many parties through empathy. Third is the constantly evolving and increasingly well documented history of the use of design in business contexts and its ability to aid companies to innovate (Brown, 2009; Liedtka, 2010; Martin, 2009; Verganti, 2009). This innovation technique is founded on the use of design methods and toolkits to aid in times of business uncertainty (Price, Wrigley, & Straker, 2015).

This paper proposes the question: *With larger trends presenting a shift in business model structures, how could a design approach be used to create a prototyping tool to help companies understand and re-design their own business model?* The paper is structured to first provide a concise summary of disruptive power of online communities with, a review of the business model concept and its variety of configurations, and discussion of design management theory and design-led initiatives. Secondly, the overarching research project is described which consists of four sub-studies. Results and discussion points from these studies provided the impetus for the creation of this model. Discussion points and implications for industry and research conclude the paper.

Literature Review

Collaborative Consumption and Antecedent Theory

For the purposes of this paper, the research team begins with the concept of collaborative consumption. Introduced by Botsman and Rogers (Botsman & Rogers, 2010), the concept is defined as a socio-economic groundswell, the re-emergence of traditional forms of “sharing, bartering, lending, traditional, renting, gifting, and swapping’ yet ‘redefined through technology and peer communities’. Within the phenomena, Botsman and Rogers (2010) identify three sub types of collaborative consumption; (i) *Product/Service Systems*, (ii) *Redistribution Networks* and (iii) *Collaborative Lifestyles*. The first sub-type, *Product/Service Systems* builds on key business literature of ‘Servitisation’ (Neely, 2008; Vandermerwe & Rada, 1988) by describing a system that further decouples a product and the value that product provides. However, unlike seminal literature which responded to manufactured products becoming increasingly commoditised and thus added services to retain customers and add value (Visnjic Kastalli & Van Looy, 2013), the ‘servitisation’ dynamic in CC is not strictly a product manufacturer selling add-ons after purchase as a car manufacturer sells servicing. The CC servitisation dynamic does not necessarily involve customer and firm, rather customers with pre-purchased products, which are made available for the community.

The second sub-group, *Redistribution Networks*, work similarly to second-hand market places. The original user has ceased to capture value in such a product, and wishes to transfer ownership and value to another party. The third subgroup, Collaborative Lifestyles is the most progressive and dynamic form of CC. The community members use their own products and provide services for other members of the community who request them. The firm acts as a facilitator for the transaction. The community has become monetised through CC.

It should be noted that literature in this area is fragmented. In describing this trend, the phrases ‘on-demand economy’, ‘peer-to-peer economy’, ‘sharing economy’, ‘experience economy’ and ‘collaborative consumption’ are used synonymously. Furthermore, academics in the area conclude that literature has only just begun to scratch the surface of this knowledge (Cohen & Kietzmann, 2014; Zervas, Proserpio, & Byers, 2013). The notion of CC was used as the core definition for this study as it provides a more holistic definition than the other synonymous phrases above.

Despite the rapid proliferation of these terms in both academic and popular press, these concepts have established theoretical underpinnings. The idea of a communities facilitated by the internet has been studied in great depth from different streams of research and many different terminologies are available. Table 1 below summarizes these concepts and links them to specific research streams.

Table 1: Internet-enabled communities in literature

Term	Definition & Author	Key Authorities	Research Stream
Virtual / Online Community	<p>Mediated social spaces in the digital environment that allow to groups to form and be sustained primarily through ongoing communication processes</p> <p>(Bagozzi & Dholakia, 2002)</p>	<p>(Hiltz & Wellman, 1997) (Preece, 2001); (Ridings, Gefen, & Arinze, 2002); (Rheingold, 1993); (Hagel & Armstrong, 1997); (Jones and Rafaeli, 2000); (Hunter & Stockdale, 2009)</p>	Sociology Information Systems
Brand Community	<p>“A brand community is a specialised, non-geographically linked community, based on a structured set of social relations among admirers of a brand.” (Muniz & O’Guinn, 2001)</p>	<p>(McAlexander, Schouten, & Koenig, 2002) (Schouten & McAlexander, 1995) (Muniz & Schau, 2007;, 2011); (Schau, Muniz, & Arnould, 2009)</p>	Business

<p>Community of Consumption / Online Community of Consumption</p>	<p>‘Virtual communities of consumption’ are a specific subgroup of virtual communities that explicitly center upon consumption related interests. They can be defined as ‘affiliative groups whose online interactions are based upon shared enthusiasm for, and knowledge of, a specific consumption activity or related group of activities.’ (Kozinets, 1999)</p>	<p>(Kozinets, 1999)</p>	<p>Business</p>
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Business Models, Innovation, Design and Prototyping

CC is where supply, demand and the online community meet, however to capture that value, there must be a business model equipped to do so. The CC business model monetizes human behaviour (i.e. sharing) rather than insisting customer conforms to a traditional business to customer relationship. This represents a paradigm shift in the way ‘digitally native’ companies consider the business model. For both traditional industrial era firms and new business students, continuously prototyping their business model is essential to match competitors and explore new realms for competitive advantage.

Key to understanding a changing business model involves studying two concepts: the business model concept and its relationship with innovation. The theoretical basis for the business model concept is long known. Serrat (2012) effectively collates the work of several leading authorities in the area such as Osterwalder (2010) and Chesbrough (2007, 2010), demonstrating that shifts toward a widely held belief in what constitutes a business model. Meanwhile Amit, Zott and Massa (2011) collate a comprehensive review of literature into what the business model is. For this paper, the authors use Teece’s (2010) definition of a business model; the way the company delivers value to customers, entices customers to pay for value and converts those payments into profit. While existing literature adequately covers the

business model, an area of less investigation is the way the business model itself can be a source of innovation. Massa and Tucci (2013) describe business model innovation as the design of novel business models for new organizations or the reconfiguration of existing business models. The nature of the innovation is not simply developing a better technology or feature (Chesbrough, 2007) but a business model that is sufficiently different, difficult to replicate by competitors and deeply honed to customer needs (Teece, 2010). Despite a drive to innovate through change, McGrath (2010) highlights that while new ways of operating a business are vital, core concepts of the business model always remain. Understanding both the business model elements and how and why to modify each business model element can aid to drive innovation.

Despite precursor knowledge, creating or transitioning to a new business model is often difficult in increasingly fast paced, uncertain business environments and low risk ways to test ideas are required. Business model design and prototyping is a low risk way of testing many ideas in the marketplace and gaining valuable knowledge for the firm (Brunswick, Wrigley & Bucolo, 2013; McGrath, 2010; Sosna, Treviño-Rodríguez, & Velamuri, 2010). Wrigley and Straker (2016) discuss the business model as being in a constant state of flux and propose a starting point for business model experimentation for business model designers. The end goal of the experimentation process is for the test and learning cycle of prototyping to be engrained within the company's business model transition to what Chesbrough (2007) refers to as an adaptive platform. With the business model as an adaptive platform, experimentation with future business models is constant and responsive. Design and prototyping methods allow companies to innovate in these uncertain landscapes.

Research Gap

Current business literature has largely sought to conceptualise the "business model" based on what has gone before; from years of academic study, reflection on professional practice or agglomerating empirical data to form typologies. This approach has led to existing business model frameworks that are largely generated through studies of industrial era business models. These companies are those who have been conceived before the Internet age or newer companies still bound by the 'rules' of conducting business that have been fostered by conventional business pedagogy.

Earlier in the paper, the concept of the 'digitally native' business is introduced which is used to describe companies that adopt social-network

style structures. A prime example of a 'digitally native' business can be seen amongst a new wave of businesses described as 'collaborative consumption'. The Botsman and Rogers (2010) definition largely avoids mentioning the actions of company, and rather describes collective actions of peers in order to optimize resources. Regardless, academic literature has characterized these firms as "businesses" and recent examples have shown that they extremely profitable.

When attempting to describe, categorize and provide new knowledge in this area, literature is limited by previous research and existing literature on business models inherently limits new knowledge. As such, this study seeks to redesign the business model as a 'community', drawing insight from online and branded community literature and the human-centred philosophies of design management. With this aim, the specific research question intended to be answered is: *With larger trends presenting a shift in business model structures, how could a design approach be used to create a prototyping tool to help companies understand and re-design their own business model?*

Research Design

This research has been conceived out of the culmination of four distinct studies: (i) a content analysis of the transportation space charting the shift from transportation firms to mobility providers, (ii) a content analysis of channels used by collaborative consumption firms and detailing how they interact with customers, (iii) a comparative study of novice and non-users of community-led mobility services, (iv) two sets of co-design workshops aimed at testing the notion of community with both novice and non-users of community-led mobility services. Each study is detailed below in Table 2. The results of these studies provided the impetus for a re-design of the business model framework to adopt a more network-style structure.

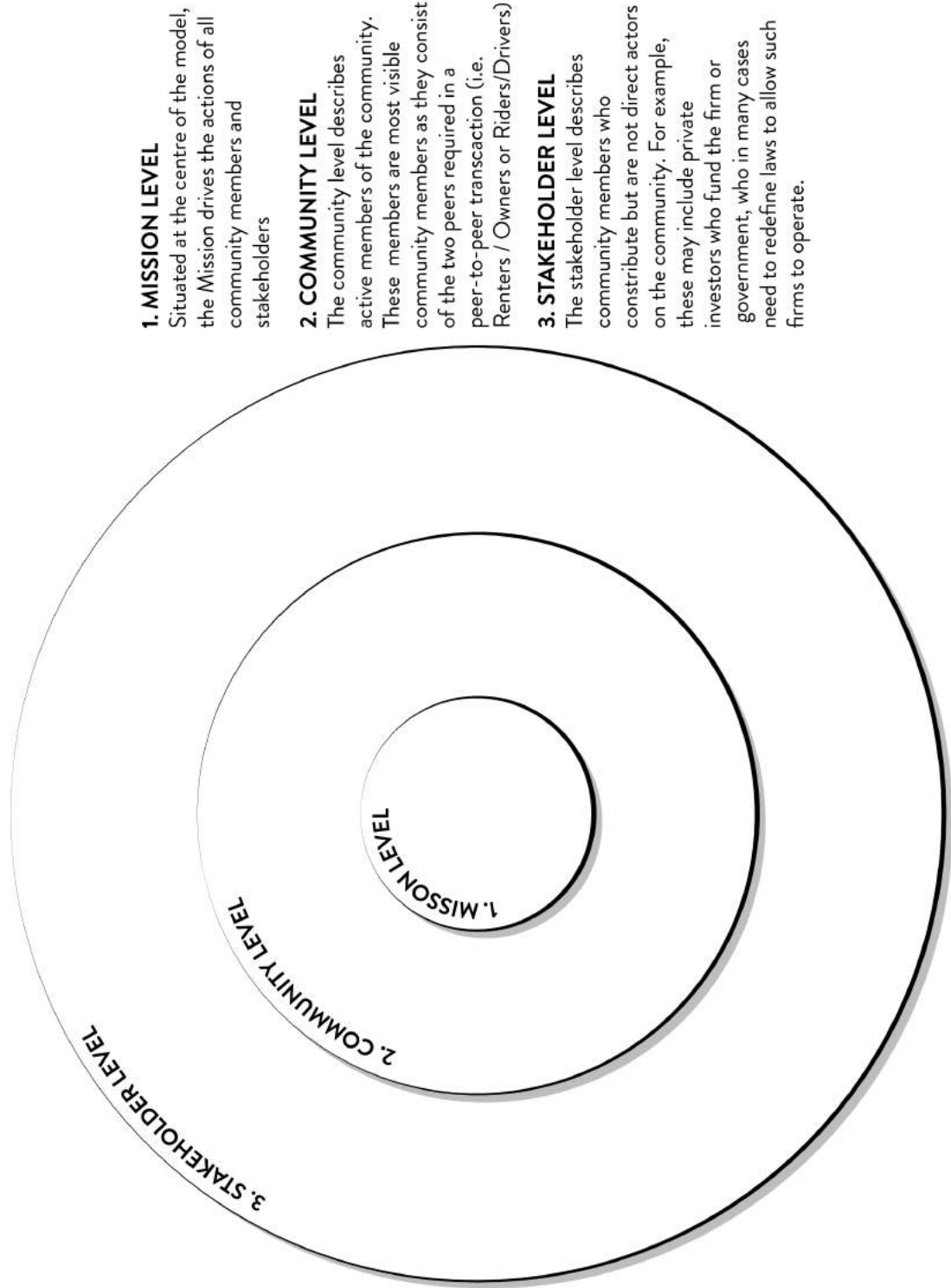
Table 2 – Seminal Study Details

	Aim	Method & Data Collected	Analysis Protocol	Key Findings
1	To understand the way CC businesses connect with their customers	Content Analysis of thirty companies' channel usage	Thematic Analysis (Braun & Clarke, 2006)	One key channel interlinks customers to each other and the firm.
2	To increase understanding of the innovation behind CC business models by comparing them with traditional firms in the same sector	Content analysis of third party sources to reconstruct business models of CC and non-CC businesses in the transportation sector	Thematic Analysis (Braun & Clarke, 2006)	Innovation occurs all across the business model rather simply the change described in CC literature.
3	To understand why people choose to engage with or reject a CC business	Comparative Study: 2 x 15 Semi-Structured Interviews of Novice and Experienced users of CC businesses	Thematic Analysis (Braun & Clarke, 2006)	Different reactions to social intensities were found across different populations.
4	To build on the previous study and further understand why people choose to engage in sharing in a group setting	Co-Design Workshops: 2 x 40 Participants of Novice and Experienced users of CC businesses	Thematic Analysis (Braun & Clarke, 2006)	The workshops brought out more diverse reactions than the plain divide in the previous interview technique. These interviews gave more authentic answers when participants were grouped with peers.

Collective Findings: Collaborative Consumption Business Models

The Three Levels

From each of the four studies it emerged that the business model for CC firms operates at three distinct levels; the mission, the community and the stakeholder levels (Figure 1). These three levels contain all elements associated within the business model. The top and centre level, the mission level, describes the fundamental goal or principle at the core of the community. All members of the community subscribe to this philosophy in the two subsequent layers. The community level describes active members of the community who are the ones who buy directly into the mission. These are the eponymous 'peers' in the 'peer-to-peer' market. At this stage, these take the form of two sided peer transactions, usually one with an unused asset or skill who wishes to maximise said asset or practice said skill for financial reimbursement. Present at this level is also the firm; the firm is a key actor in this level of the network yet is often only called upon when needed to resolve disputes between community members or facilitate transactions. This libertarian approach to community government allows maximum choice and flexibility for community members. Interaction amongst community members first takes place across a single digital channel, a digital marketplace, before transitioning to an in-person service or product exchange. The final level, the stakeholder level, consists of community members who contribute to the wellbeing of the community yet are not active members. While these members subscribe to the core mission, their goal is also the successful continued function of the peer-to-peer community because of the benefits they may receive. Examples of stakeholders include venture capital or investment firms that have a financial stake in the company or local government that seeks to redefine laws and receive tax from such firms.



1. MISSION LEVEL

Situated at the centre of the model, the Mission drives the actions of all community members and stakeholders

2. COMMUNITY LEVEL

The community level describes active members of the community. These members are most visible community members as they consist of the two peers required in a peer-to-peer transaction (i.e. Renters / Owners or Riders/Drivers)

3. STAKEHOLDER LEVEL

The stakeholder level describes community members who contribute but are not direct actors on the community. For example, these may include private investors who fund the firm or government, who in many cases need to redefine laws to allow such firms to operate.

Figure 1: The Three Levels

Building on the Business Model Concept and Online Community Literature

In this section, the authors link the collective findings of the four studies with current literature on the business model concept and online community literature. The following paragraphs clearly define which elements of the online community and business model concept are emphasized and which are shifted to a lesser role.

Start with the Mission

The mission is vital. This element gives the community purpose and is to ultimately be referred upon when design decisions are made about all aspects from aesthetics to strategy. In traditional business literature, the mission holds some similarities to the value proposition as the focal point of the business model. While the value proposition describes the 'value created for the users by the offering' (Chesbrough, 2007) from the firm, the mission unearths the 'why' behind the firm's existence in a similar way to Sinek's (2009) Golden Circles tool. The mission binds together community members and stakeholders with diverse points of view. The value proposition for each community member may differ, but the mission remains the same for all parties.

Establish a Core Community

The second layer of the model involves establishing a community with successful CC firms monetizing the communities' operations. This community layer involves creating a layer of conscious individuals who not only believe in the mission, but are also willing to contribute to the cause. This is a fundamental truth of online communities. All members contribute to the running of the community, whether by generating content, consuming content or something in between (Alon, Brunel, & Seigal, 2005; de Valck, van Bruggen, & Wierenga, 2009; Kim, 2000; Kozinets, 1998). These roles could be simply that they are willing to pay for the skills or time of other community members. These transactions often generate revenue for the firm. Costs are incurred through maintaining the community functionality, however the community is designed to govern itself. The firm only becomes involved when called upon to dispute disagreements between members or to facilitate payments between parties. The core community members establish relationships with one another and seldom with the firm. However, these transactions are monitored by the firm and deciphering this information becomes both a key resource and key activity for the firm.

Assembling the Right Stakeholders

The third tier of the model is the stakeholder level, which involves those who support the mission, but are best suited to support roles in the core community. These are similar in description to Osterwalder and Pigneur's (2010) 'key partners'; the networks of suppliers and partners that make the business model work. These stakeholders include all types of partnerships from strategic partnerships between competitors and non-competitors, joint ventures to develop new businesses and buyer-supplier relationships. The stakeholder level differentiates itself from traditional business terminology. It encompasses all stakeholders rather than those simply in the traditional business landscape such as not-for-profit competitors, competitors outside the direct industry that may exist outside the scope of existing tools or governmental agencies. This was built on existing concepts such as environmental scanning (Duncan, 1972; Elenkov, 1997).

Networked Business Model Tool

The Networked Business Model Tool (NBMT) has been generated from the findings of four studies and proposes a fundamental restructure of the business model concept. Some new terminology is introduced from psychology, sociology and online network literature while some traditional business model terminology is retained.

The design tool known as the Networked Business Model Tool can be seen below in Figure 2. This figure contains all elements of the model, yet it is not restricted to the pieces shown. More pieces can be added for more complex business models. Following the figure, a detailed explanation of the tool is provided, highlighting the three levels of the tool, the pieces to be used on each level that represent actors in the network and relationship between actors and a step-by step process for using the tool.

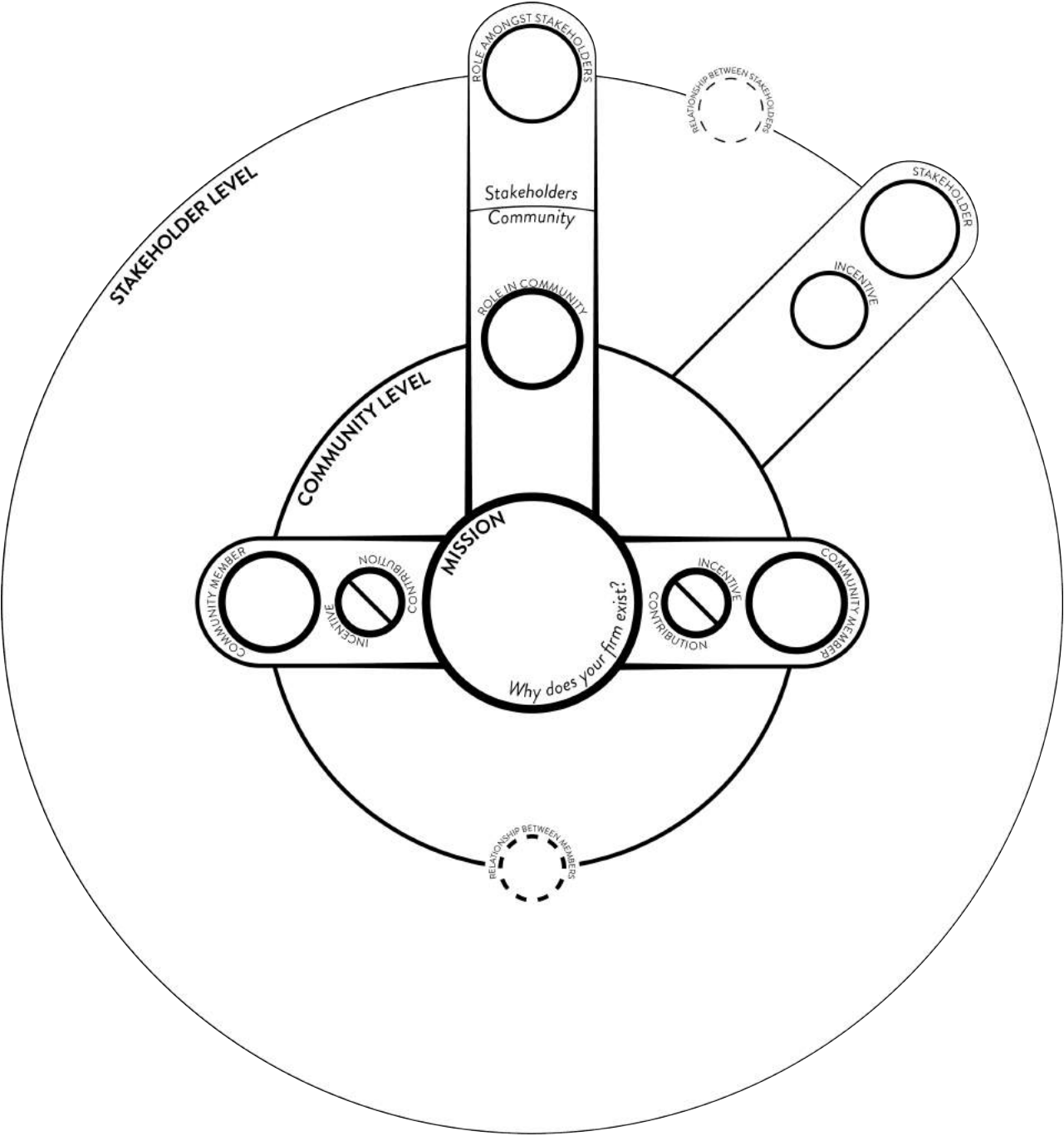


Figure 2: Networked Business Model Tool

The Toolkit Pieces: Actors and Relationships

This design tool prescribes three types of actors in the network, community members, stakeholders and the firm. Each member is represented on a specific 'flashcard' as seen below in Figure 3.

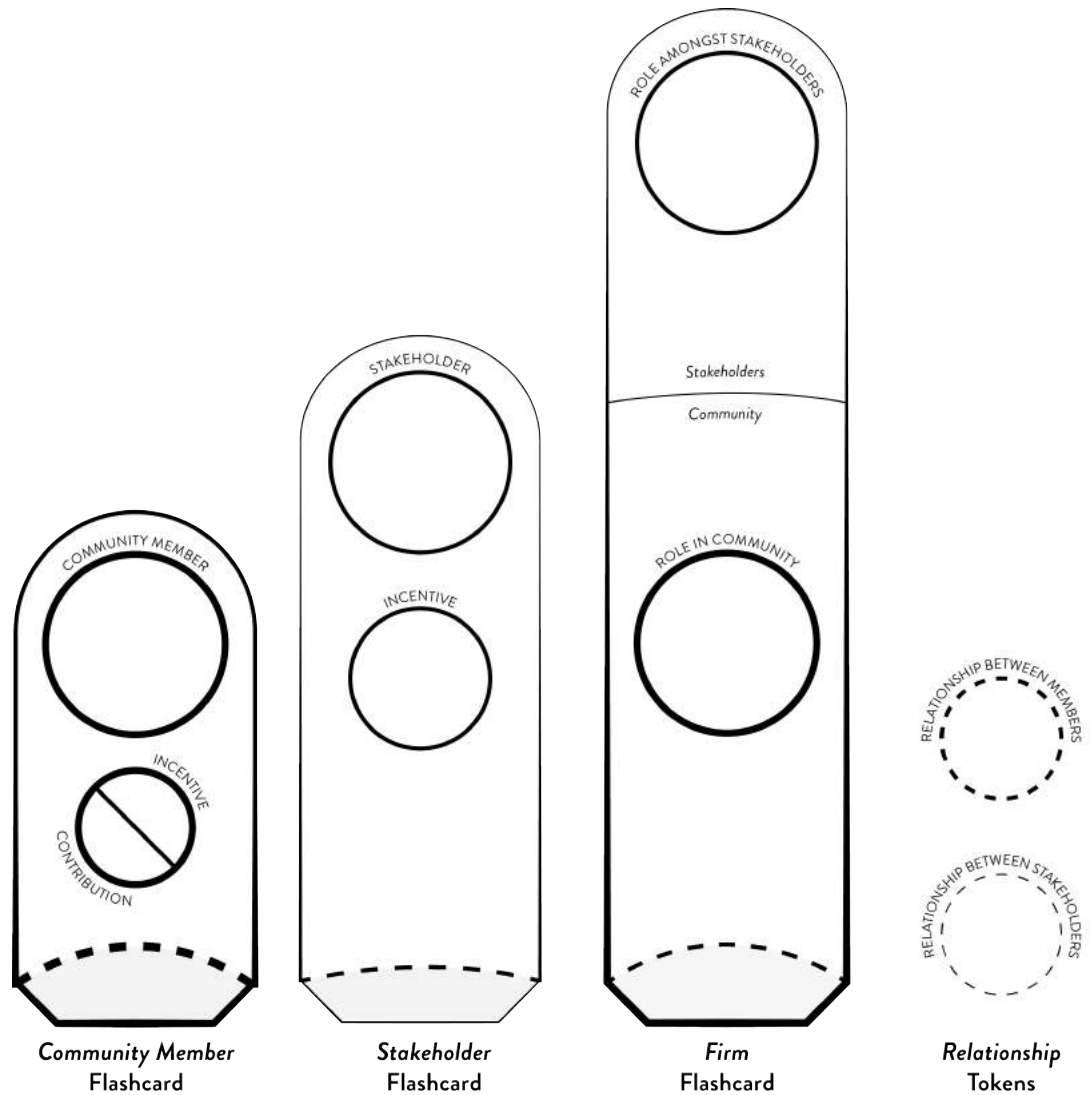


Figure 3: Actor Flashcards and Relationship Tokens

The community member flashcard represents the active community members. These members include all parties who are directly involved in transactions within the community. These members are those who most believe in the mission to the point where they actively contribute to the community, engaging in a peer-to-peer network that aims to complete the

mission. It is important to note that not all members will have the same incentive to join as others. While this is obvious on either side of the transaction (i.e. buyers and sellers), there are also a multitude of reasons that just buyers or just sellers contribute. This is described on the flashcard as the incentive to join the mission. In business terminology, this closely resembles a value proposition in relation to a customer.

The stakeholder flashcard symbolizes those who contribute to the community yet are not actively involved. Stakeholders adopt more of a supporting role for successful function of the community and often benefit from continued function. Similar to community members, stakeholders subscribe to the mission, but benefit equally from the community functioning. As such, the community flashcard asks users to draw on the incentive to support community. This incentive element often reveals that some stakeholders may have limited incentive to support the community, unearthing both opportunities and threats to the community.

The third and final actor is the firm. Represented by the firm flashcard, the firm crosses boundaries from the community and stakeholder level. As is the case with many collaborative consumption firms, the company acts as both an internal actor for the community and an external entity that negotiates the operation of the community by aligning stakeholders. As the firm's incentive to both support the community and liaise with stakeholders is articulated by the central mission, this flashcard is used to help the user articulate the role the firm plays in the community and stakeholder networks. This is vital because the firm has ultimate power to dictate how the community runs and how stakeholders support the community. The firm also sets the central mission, which is then moulded and nurtured by the community.

The final pieces of the toolkit are the relationship tokens, which are placed in between actors in the network. The user then describes the relationships between community members and stakeholders.

Using the Tool

Like other design tools, it is the intention of users to start from any point. The tool is used iteratively as the business design progresses. To explain the how to use the tool, the following paragraphs map the business model of popular CC firm, Uber (with an emphasis on its UberX service). The first step involves sketching the mission. Figure 4 illustrates popular ridesharing firm Uber's mission articulated on the tool. The statement reads, 'Transportation as reliable as running water, everywhere for everyone' (Sacca, 2015). This mission presents an idealistic goal, one that has the potential to excite and attract users yet is not strictly defined to limit creativity, growth and change.

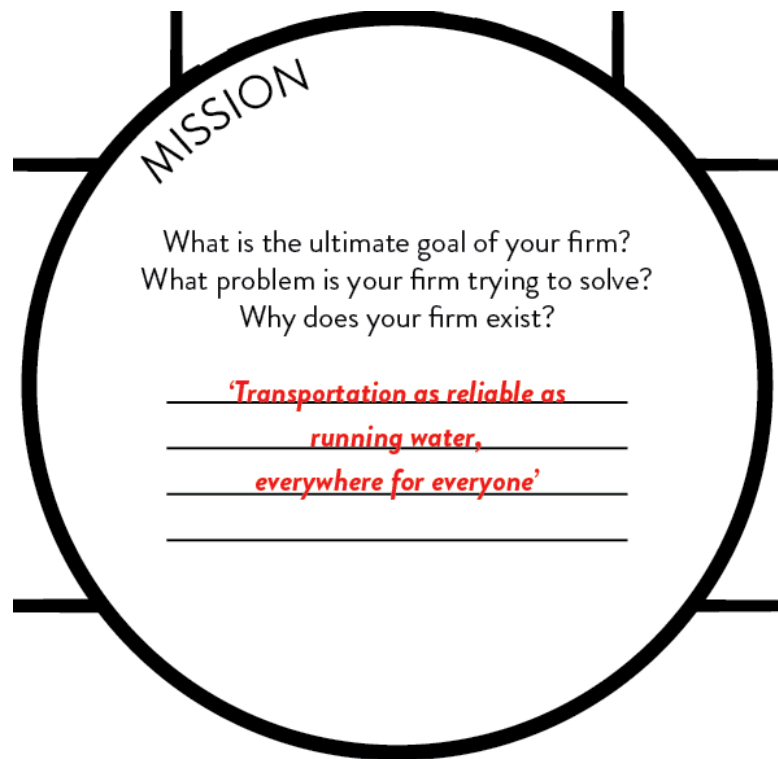


Figure 4: Uber – Mission Level

The second step requires assembling a community around the mission. At this level, the user fills out a community member flashcard for each member which visualises their incentive to contribute and what they bring to the community (Figure 5). Relationship tokens can also be used to detail specific relationships between members at this level.



Figure 5: Uber – Community Level

Using the Uber example, the firm has three parties at the community level, the firm, the driver and the rider. The firm organizes the connection between the driver and the rider. The driver facilitates transportation while the rider transfers money to the driver. The relationship between the driver and passenger is a rich and dynamic; one that begins through the marketplace channel (smartphone application) and ends with service

delivery. Despite this rich relationship, the relationship is discrete and is often difficult to return to for future services. The firm and driver interact in a simulated employee/employer relationship where the firm provides information and guidance for providing the best possible service. The firm and passenger have the least intense relationship. In many cases, passengers do not interact directly with the firm and only call upon Uber in need of customer support.

The third step involves assembling key stakeholders who can aid in making the community tangible. At this stage, the user fills out a flash card detailing each stakeholder and their incentive to support the community (Figure 6). Once again, major relationships can be visualized use relationship tokens.

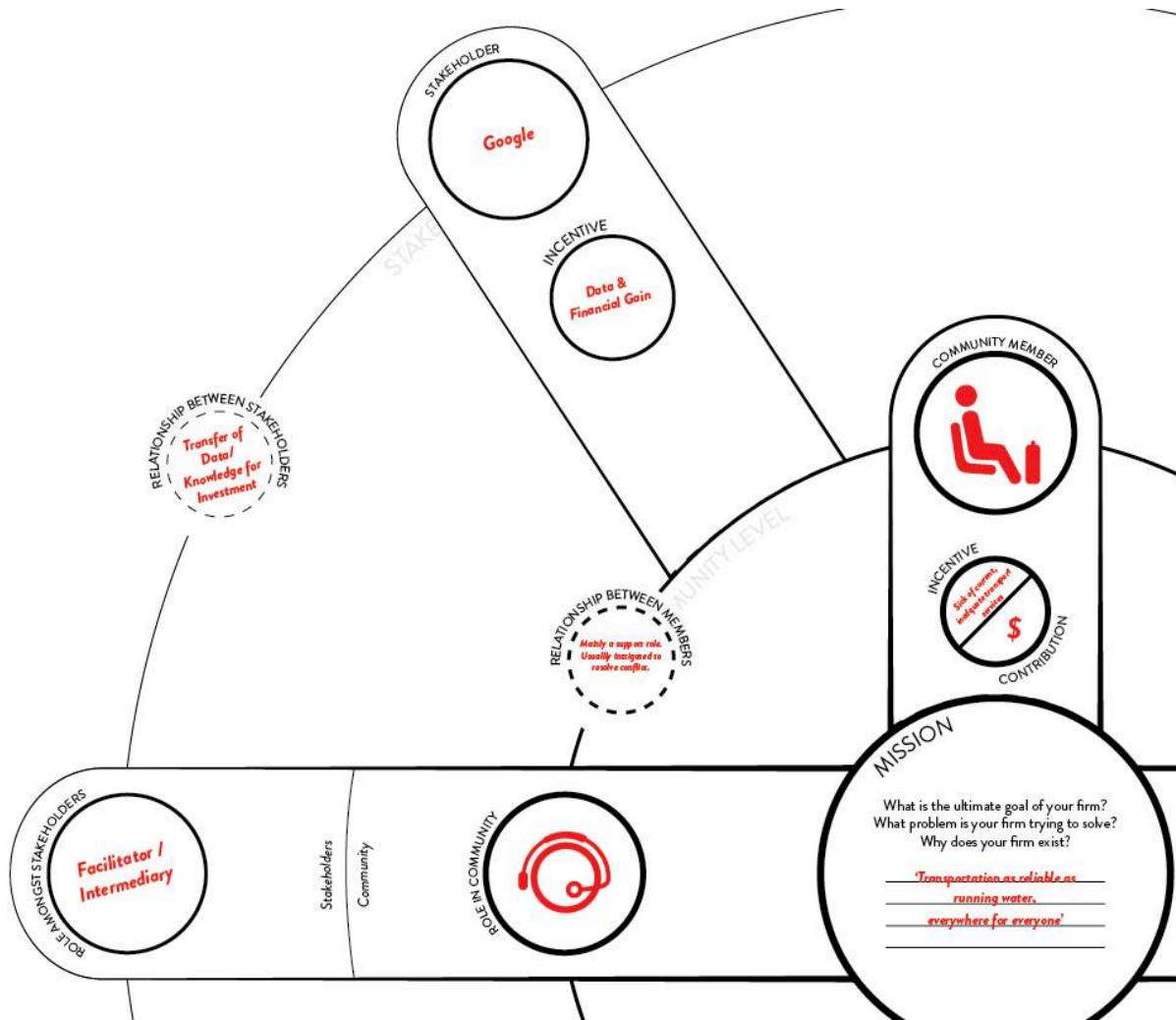


Figure 6 – Uber - Stakeholder Level

Returning to the Uber example, the ridesharing company has a diverse set of key partners, which enables its business to operate. The first is Google. The technology giant's investments fund the firm's operations and mapping software supplies navigation for drivers and riders. Local government can provide a supportive role in redefining existing laws to enable the firm to operate and provide services for the firm to conduct background checks on drivers. IT & financial services firms provide Uber with the ability to process payments from customers to drivers while taking a percentage in revenue. These three key partners form the basis for Uber's continued operation. The tool allows all stakeholders to be critically evaluated for their ability to support the community, allowing academics and strategists to critically evaluate and understand motives of different stakeholders.

Summary

The online community and the spread of collaborative consumption business models have transformed the way companies operate. With this transformation underway, uncertain times lie ahead for both established firms operating under the traditional assumption of the business model and new firms hoping to gain traction in the marketplace. Designing and prototyping the business model is a low risk way to produce novel solutions for survival in the marketplace. Built on these assumptions this paper sought to investigate the use of a design approach in the creation of a prototyping tool to help companies understand and re-design their own business model. The use of the design approach and insights given from previous studies in the CC space has created a visual prototyping tool, the networked business model tool. The NBMT combines traditional business model and collaborative consumption literature to aid companies visualise their business model as a network of peers.

The NBMT is currently in development. Prototyping and iterative improvements are welcomed by the authors, encouraging both researchers and practitioners to use, modify, reinterpret and critique the tool. The research team welcome any feedback, suggested improvements or experiences with the NBMT and look forward to its ongoing development.

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