Narratives' role in shaping new markets

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Abstract

This paper investigates the market shaping for smart city technologies using actor-network theory to examine the role of the narratives as an assemblage tool between the market practices of representation, exchange and normalisation. This research understands market shaping as a process that embeds market practices that act together as an assembled coherent and logical construction that permits to make sense of the actors' actions granting the entrance of a new good into the market. The case in point, the smart city technology market shows how narratives are used to shape a new market, by being used to create market representations that later are employed in exchanges between sellers and the cities. Thus, the narrative is transformed and serve as a material for normalisation practices permitting the creation of policies, habits and routines. The paper contributes to discussions on market shaping, by showing the use of narratives as assemblage tools of market practices.

Keywords: Market shaping, Market Practices, Narratives, Smart City, Actor network Theory.

1 Introduction

The shaping of markets has been recognise as an important element for the successful commercialisation and stimulate the use of innovations (O'Connor and Rice, 2012). The study of markets has been developed arguing that markets are the result of the arrangement and translation of three distinct and interconnected market practices: representational, exchange and normalising (Kjellberg and Helgesson 2006, 2007). Despite its importance, Azimont and Araujo (2007) have recognised that the link between the different market practices remains unclear. Few studies (e.g. Doganova and Karnøe, 2015) have studied the articulation of the market practices and its influence in market construction.

Scholars from economic sociology such as Muniesa et al. (2007) and Caliskan and Callon (2010) have recognised the role of discourses and narratives in the shaping and construction of markets. In that sense, this paper aligns with the vision that markets are a dialectic and cultural construction that includes a discursive aspect in which narratives are created with different purposes throughout market shaping. Thus, the focus of this study is the understanding of the role of the narratives in the construction of the smart city market as tools of assemblage among market practices. Simakova and Neyland (2016, p.96) have shown that the creation of a market requires the narration of "a tellable story: a story which narrates boundaries, relations, agency and identities for entities", permitting the assemblage of people and material objects.

This research selected the case of the smart city market to study the role of the narratives in market practices, aiming to answer the following question: how does the use of narratives contribute to market shaping for emerging technologies in industrial settings? This research

uses Actor Network Theory to analyse four moments in the construction of the smart city market. Thus, this paper contributes to the discussion on market shaping by presenting the

role of the narratives in the assemblage of market practices throughout time and its impact in the shaping of new technology markets.

2 Conceptual background

The study of market shaping has been examined under the economic sociology perspective, where markets are defined as socio-technical assemblages that possesses among others: rules and conventions; texts, discourses and narratives; technical and scientific knowledge, as well as the competencies and skills embodied in living beings (Caliskan and Callon, 2010, p.3). Likewise, markets are recognised as dialectical construction that uses market devices as a "material and discursive assemblages" (Muniesa et al., 2007, p.2). Furthermore, the assemblage of market constituencies requires the narration of "a tellable story which narrates boundaries, relations, agency and identities for entities" (Simakova and Neyland, 2016, p.96). Thus, the definitions highlight the discursive relevance and narratives as an assemblage in market shaping.

Market shaping and market practices has received attention by Kjellberg and Helgesson (2006, 2007) and Araujo (2007), arguing that markets are the result of the arrangement and translation of three distinct and interconnected market practices: representational, exchange and normalising. Representational practices depict the way in which the market operates producing a shared image of the market among the actors. Exchange practices comprise economical exchanges of goods between actors, involving the object of exchange, the price and the activities developed by each actor. Normalising practices aim to establish normative objectives including regulations and activities that institutionalise the use of the good (Kjellberg and Helgesson, 2006) and enacting practices, routines and habits (Kjellberg et al., 2015).

This research show the role of narratives in market shaping providing a coherent articulation between market practices that permit the shaping of markets. Despite the importance of the narratives in market shaping, its study is still scarce. Few works have explored the narratives' role in marketing. Rosa et al. (1999, p.68) argue that market stories are used in the origins of markets, working as "sense-making tools among participants in a social system", Shankar et al. (2001) affirm that narratives permit to structure and make sense of our lives, allowing to understand consumption models and La Rocca et al. (2015) state that stories reduce complexity in unclear contexts in business relationships.

A definition of narrative generally accepted is "narrative is the representation of an event or a series of events" (Porter Abbott, 2015). Three elements are essential for a coherent and appealing narrative: (1) The construction of identifiable characters. (2) A plausible plot (Czarniawska, 2004). (3) The level of likelihood (Van Laer et al., 2014). This study is not concerned with the constituents of a story, rather focus on the global narrative structuring and their impact on market shaping which is analysed through Actor-Network Theory (ANT).

ANT provides an analysis framework that permit to analyse the actors, their relationships and the emerging narratives associated with the introduction of socio-technical innovations in the market shaping process (Tatnall, 2011). Thus, the successful entrance of a technology into

a market depends on the ability to bind together the interests of multiple actors over time through a process known as translation (Callon, 1986). Four moments of translation are described: problematization, interessement, enrolment and mobilisation. Problematization refers to the project conception by redefining a problem in which the solution proposed becomes indispensable. Interessement is related to the actions developed to align other actors or objects with the focal actor's interest, imposing a vision defined in the problematization. Enrolment only occurs if the interessement is successful. Then, the focal actor persuades diverse actors to engage and obtain concrete alliances. Lastly, mobilisation seeks to ensure that the engagement of the actors involved remains stable acquiring the status of taken-for-grantedness.

3 Methodology

The goal of this research is to understand the role of the narratives as an assemblage tool of market practices in the smart city market construction. Therefore, this research resorts to a case methodology which permits to understand a research area that has been partially explored (Gummesson, 2000), being capable of relating the phenomenon studied to its context (Dubois and Araujo, 2004). The development of a multiple case study allows to gather different perspectives and counter argumentations permitting to produce robust constructs that are generalizable. In addition to the case study approach, this research employs a narrative analysis (Bamberg, 2007; Riessman, 2008) aiming at understanding the building and the structure of the narratives, the plot, the characters' role and other elements incorporated.

Thereby, a multiple case study that permit understand the interaction between actors seems the most suitable option: technology firms (IBM and Cisco), cities (Amsterdam, Barcelona and Lyon), consulting firms (McKinsey, PWC, EY and Arup), media (Forbes, The Guardian, Wired UK), international organisations (BID, European commission and centre for cities) and other actors of each city (start-ups and residents). The data was gathered from 2014 to 2017 including multiple sources, including advertisements, public speeches, and customer cases.

4 Findings

Data gathered were analysed through the four moments of translation proposed by Callon (1986) in ANT: problematization, interessement, enrolment and mobilisation. Figure 1, summarises the findings obtained. The findings are divided into two sections providing detailed information of the actions taken by different actors. The first section focuses on the efforts developed by Cisco and IBM and the second section pays attention to the cities Amsterdam (AMS) Barcelona (BCN) and Lyon.

4.1 Technology firms actions to shape the market

Technology firms engage in the framing of a problem (problematization phase) and the development of a technology solution that respond to existing issues or framed needs. Technology firms base their smart city solutions on the current understanding of what a city is, its evolution and the challenges that emerge in the process, such as overpopulation and the

need for efficient and sustainable cities, which directly impact the citizen's life quality. IBM and Cisco developed Internet of Things (IoT) applied in this case to cities, promising that smart city solutions will optimise the city processes, making them more manageable, efficient and intelligent through the connection of sensors and devices to the network.

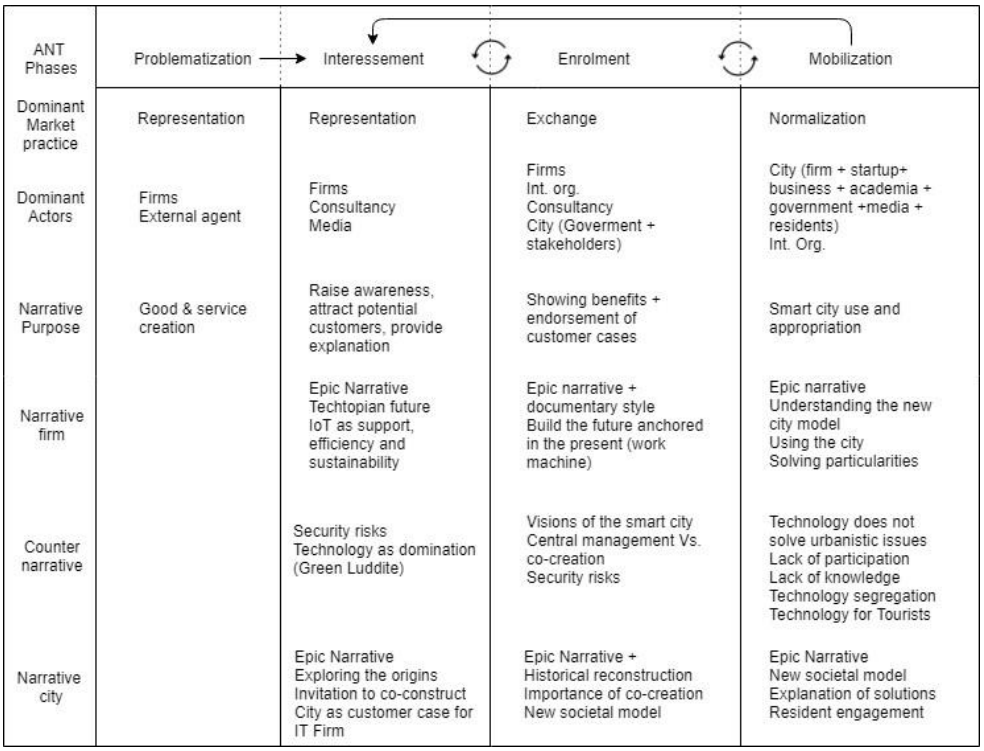

Figure 1: Narratives in the smart city market shaping process

At this stage, technology firms resorted mainly to the creation of specialised material where they create definitions that do not include any narrative structure. Thus, IBM defines the smart city as "a city that connects the physical infrastructure, the IT infrastructure, the social infrastructure and the business infrastructure to leverage the collective intelligence of the city" (Harrison et al., 2010). In addition, Cisco defined it as those cities that adopt scalable solutions to take advantage of Information and Communication Technologies (ICT) to increase efficiency, reduce costs, and enhance the quality of life (Falconer and Mitchell, 2012). The dichotomy on the smart city concept is reflected throughout the market construction process, having consequences in the construction of the narratives developed by the firms.

The interessement phase occurs at the early stage of the solution release (Cisco in 2012, IBM in 2013), in which the market representation needs to be built. Three actors take part in this phase. First, Cisco & IBM engage in the creation of the market representation using narratives that address the major concerns of the cities: overpopulation, efficiency, sustainability and citizens' life quality. Thus, the narrative depicts fictional scenarios where smart city solutions have been implemented. In the stories the city incarnates the heroic character, the technology represents the magical tool that will help to restore the balance and the IT firms act as the helper that guide the hero in its quest. Additionally, Cisco and IBM engage in the creation of white papers with a scientific tone that explain smart city solutions

and its implementation, in order to push the smart city definition that serves to its own agenda. In the case of Cisco, the firm creates a utopic future *"the man who drove the car (in driverless mode) that found the parking spot that alerted the door that opened the control room"* (Cisco circular story, 2012). IBM is helping cities to face the most challenging issues *"Robert is teaching cars to cooperate with one another so they can do more than transport passengers, he wants to tap into their computing power so they can help find missing objects and make our homes more secure"* (IBM People for smarter cities, 2013).

Second, consulting firms fulfil an important role in the creation of market representations, providing a less bias perspective of the technology and becoming a figure that provides legitimacy while creating a common language between all the actors. *"our point of view was in fact that this is not a trend that is overhyped, in fact, there is potentially, even more, value than many people might realise, but associated with that value there are a set of challenges, obstacles and enablers that have to be put in place"* (McKinsey Global Institute, 2014). Third, specialised media and trade fair events contribute to disseminate the narratives and nonpaid media offers a holistic vision that presents aligned and contradictory positions towards the smart city solutions *"The smart city sounds like a digital utopia, a place where data eliminates first-world hassles, dangers and injustices. But there are some problems with smart cities, and no one, to my knowledge at least, has pointed them out."* (Forbes, 2017). The convergence of these three actors permits to create a narrative that provides a clear representation of the smart city market; how the technology operates, which actors need to be involved, benefits and difficulties of becoming a smart city. Thus, the narrative becomes a vehicle to give sense to the market, opening the doors to enter into an enrolment phase where negotiations taken place with clients.

The enrolment phase only occurs if the interessement phase is successful in the creation of an appealing market representation to attract potential customers interested in acquiring smart city solutions. At this stage, Cisco and IBM continues adding possible scenarios to apply smart solutions. Exchange practices are developed between the technology firm and the city, with technology firms resorting to narrative elements employed in the interessement phase, adding rational and statistical data that supports the investment value. The narrative employed in this stage resorts to a documentary style that is framed in realistic scenarios closer to the buyer, using the epic narrative structure. A strategic director from a technology firm presented an example, explaining the benefits of the solution, *"Imagine you want to go to the Gare de Lyon, which is on the other side of the city. You plan to take your car, but there is a lot of traffic, so is not a good idea. So, you decide to take the RATP (train), but well, there is a strike. So you decide to take a bike, but all the bikes are away. This is to give you an example that is no central management for the traffic in the city. This shows what we can do if we connect and exchange the information between the different systems. Just imagine an interconnected and informed city; this is what we provide with the Internet of Things"*.

Initial counter positions emerge as part of the deconstruction of the narratives created by technology firms, where the city determines if the technology fits with the city's vision and objectives. AMS argues *"every company that comes here and tells us how it works. They're wrong because they don't have a clue how a city works. There's a big difference between how people think it works and how it works"* (Fitzgerald, 2016). Thus, counter-narratives permit to

identify ideological underpinnings towards the smart city, reflecting cultural aspects that influence the market shaping. At the end of this phase the decision of whether to adopt or reject the technology is taken by the city.

Finally, in the mobilisation phase, the engagement between the actors involved is ensured and the alliances remain stable acquiring the status of taken-for-grantedness. Thereupon, technology firms sign agreements of collaboration with the cities. However, the mobilisation phase is not shown within the narratives developed by the technology firms. Extracts of alliances are used as part of successful customer cases to generate interessement in new cities that are seeking to acquire this technology. Thus, the city transforms from being a buyer of the smart city solutions into a seller of the smart city concept, entering into a new cycle of the market creation process.

4.2 Cities actions to shape the smart city market

The problematization for the city occurs when the city discover issues that need to be resolved and start to consider technology solutions, enacting exchange practices between the city and technology firms. It starts with a deconstruction process of the narratives generated by the technology firms, in which the city is able to establish its own vision as a smart city. For Lyon *"the vision for a Smart City is how do we work together on the territory in order to develop the city in a collaborative way, thus the city becomes a tool for innovation, for the renewal of the city, a real tool to provide a better life quality, but also to foster innovation and development for the territory"* (Project manager of Lyon smart city). This vision is not only the anchor to develop the strategy and the city's narrative but also permits to enter into normalising practices that are necessary for the technology implementation. In the three cities, a political support, governmental and private funding was required. Therefore, the each city elaborates a draft or initial narrative, which explain the vision to the city's internal stakeholders. The city's role goes through a transformation, passing from being the buyer of the smart city solutions to become a seller of the smart city concept, aiming to attract investors, business, start-ups and citizens that help to construct the smart city initiatives.

Next, the city enters into the interessement phase. The cases resort to the use of new narratives aiming to enthral residents and to attract investors, business and start-ups that participate in the construction of solutions. The city engages in the creation of a narrative that gives sense to the city's vision, the models of participation, innovation and governance, focusing on the citizen's life quality. The narratives follow an epic narrative structure emphasising the smart city origins, inviting actors to innovate and co-create the city. However, the city's narratives present differences with those of the technology firms. For example, in AMS and Lyon is evident a citizen centred approach. However, the narratives of the city can be contradictory with the existent representations of the smart city. For example, AMS does not consider itself as a smart city, the chief technology officer (CTO) of AMS argues, *"there's no such a thing as a smart city, a smart city is in general. I would say, a city that provides all the services and the quality its citizens need"*.

The enrolment phase occurs as a positive response to the interessement phase. Here, initial policies are improved and adapted to the advances of the smart city. Likewise, a new

set of exchanges occurs between the city government and new actors that exist within the city interested in participate in the construction of smart city initiatives. Therefore, a new stage of negotiations is conducted, seeking to establish the models of collaboration and participation, the actor's roles and their approach to the construction of the smart city. The development of collaboration networks has been preponderant in the construction of the smart city, *"The biggest challenge all the partners in the different projects faced was to engage the people; in other words to involve the residents, the entrepreneurs, the employees in the office buildings and also the visitors of the city"* (Amsterdam Smart City, 2011).

In this phase, exchange practices are present and the city uses the narrative established to show the advances in the city. It also resorts to realistic cases of how the city has engaged different actors to develop initiatives, acknowledging difficulties and issues that need to be resolved, permitting to bend together the perspectives of diverse actors and aligning them under the city's vision. New counter-narratives emerges, expressing dissatisfaction towards the smart city development, which can be considered as part of the smart city narrative *"in BCN nobody talks about the smart city. First, because from the smart city policies there is not a clear understanding of the needs of the citizens and second because maybe the problems of the citizens do not need high tech technology"* (Professor at Universitat de Catalunya). Thus, the narrative becomes an important aspect of the exchange and normalisation practices, permitting to give sense citywide and enact a cultural transformation.

The phase of mobilisation comes next, where the set of laws established in the enrolment phase are revised, updated and new elements are added in order to legally reinforce the participation and governance models. Assessment measures were developed to analyse the real impact in the city, being included in new narratives that emerged as part of the smart city construction and evolution. The city resorts to narratives with two aims. First, to reinforce the city' representation, seeking to attract investors and companies that want to establish their operations in the city. Likewise, the narratives have the purpose of generate interest within city start-ups and companies for the development of new solutions. Second, to normalise the smart city initiatives, permitting the technology to be institutionalised and appropriated within the community. Thus, the narrative becomes a reflection of the normalising practices, in which the city is presented as a co-construction model of society, showing how actors engage in collaboration networks to build the smart city. The mobilisation phase occurs in different moments in time and, in some cases, it can be unsuccessful. For example, BCN went through a political change, impacting the smart city consolidation. Thus, the city redefined the smart city perspective leading to stop multiple initiatives and re-entering into an interessement phase and the narrative reconstruction. This change takes into account the counter narratives, related to the social impact and the technological segregation generated by the smart city.

Normalising practices become the most relevant market practice in the mobilisation phase, this includes the revision of legal frameworks and the development of routines and habits. In that way the city is responsive to the cultural responses of the residents and changes in the market. In this phase, the narratives become a fundamental tool for cultural transformation and knowledge sharing, permitting to explain to the community the new city model.

5 Discussion

Drawing on the literature on market shaping proposed by Kjellberg and Helgesson (2006, 2007), this paper analyses the role of the narrative as an assemblage tool that permit the coherent articulation of market practices. The cases elucidate how actors resort to narratives with two aims. First to explain the technology and how it works. Second, to give sense to new collaboration and governance models that will be incorporated as part of the smart city construction.

The cases present the relevance of governmental agency in normalising practices and how narratives are used to enact practices, routines and habits that enable the institutionalisation of technology solutions, while serve as material to explain and share regulatory processes related to smart city. By doing so, this study combines the initial definition of normalising practices established by Kjellberg and Helgesson (2006) and adds elements of market stabilisation Kjellberg et al. (2012). As Doganova and Karnøe (2015) affirms the central challenge of market making is to create an alignment among market practices that become "mutually supportive" contributing to create irreversibilities. This article expands the importance given to the regulatory process arguing that regulations per se are not enough to construct and stabilise a market. Therefore, it requires the support of tools, in this case narratives, which permit the adoption of the technology in the cultural context of the city. Likewise, this paper highlights the importance of governmental behaviour in technology development promotion (Caerteling et al., 2013) and how those environments contribute to the technology commercialisation (Chiesa and Frattini, 2011). Furthermore, this study shows the plasticity proprieties that the narratives possess, being able to be malleable and adapt to the different perspectives, the actors and the stages of the market shaping.

6 Contributions and further research

At the theoretical level, this paper contributes to the literature of market shaping by presenting an alternative view in the assemblage of market practices, showing how narratives work as an assemblage tool that gives sense and permits to assign meanings to the actions developed by different actors in each market practice that allow the shaping of the market. This paper permits to practitioners to observe the role of the narratives in the market construction and understand it as a cultural and dialectic process that can be managed to avoid counter argumentation and to increase the adoption rate of new technologies.

This paper offers an offspring for future research on market construction. First, it is important to analyse the role of the government in market shaping by taking into account the concepts of embeddedness proposed by Granovetter (1985) and explored by Caerteling et al. (2013) which in the B2B literature is still scarce. Likewise, forthcoming research can focus on the idea proposed by Harrison and Kjellberg (2016) of market shaping by users. However, this requires a depth analysis that permits to enhance the conceptualisations provided by scholars.

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