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RESEARCH ARTICLE

THE OPEN DATA MOVEMENT

Young activists between data disclosure and digital reputation

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ABSTRACT: Young citizens show an increasing interest for direct democracy tools and for the building of a new relationship with public administration through the use of digital platforms. The Open Data issue is part of this transformation. The paper analyzes the Open Data issue from the perspective of a spontaneous and informal group of digital activists with the aim of promoting data disclosure. The study is focused mainly on the case of a specific local movement, named Open Data Sicilia (ODS), combining traditional ethnographic observation with an ethnographic approach. The aim of the study is to detect the social profile of the Open Data movement activists, understanding how is it organized their network, what are the common purposes and solidarity models embodied by this type of movement, what are the resources mobilized and their strategies between on-line and off-line. The ODS case appears interesting for its evolution, its strategy and organizational structure: an elitist and technocratic movement that aspires to a broad constituency. It is an expressive or a reformist movement, rather than an anti-system actor, with features that are similar to a lobby. The case study also shows all the typical characteristics of digital activism, with its fluid boundaries between ethical inspiration of civic engagement and individual interests.

KEYWORDS: digital activism, openness, civic engagement, data reuse, collaborative production

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1. New social activism and digital production: the Open Data

The growth of the Web and digital communications devices has represented a new opportunity for social movements and political participation (Chadwick and Howard 2009; Pavan 2013), especially for young people.

While States and traditional political actors resize and reconfigure their role in the global scenario (Ohmae 1999; Sassen 1996), the public sphere (Habermas et al. 1974), as an open communication and knowledge system that is increasingly disintermediated, would feed new *connection states* (Bennett and Segerberg 2012; Boccia Artieri 2013) that reinvent the forms of activism.

These new ways of participation are greatly removed from the typical features of the movements in the previous century (Della Porta and Diani 2006). In the so-called post-democratic phase (Crouch 2003), the crisis of trade unions or political parties is accompanied by an increasing empowerment of the citizen-consumers (Arcidiacono 2013; Willis and Schor 2012) and their interest for tools of direct democracy (Della Porta 2013; Fung and Right 2003) or direct management of the commons (Webb 2014). This model of civic activation and engagement is more relevant among the youngest, whose traditional political affection nowadays is described as apathetic and discouraged. In an "individualized collective action" scheme (Michelletti 2003), new social movements arise to establish better conditions for the common good (Wolf 2004) faraway partly by the strong ideological drivers typical of the social movements in the previous century (Tarrow 1996).

The need to restore citizens' involvement responds to new demands for new governance paradigms in public administration; that is, the need to plan, co-produce and manage more and more specific interventions and policies; as well as the will to overcome the stigmatizing logic of dependence and self-reference within the logic of citizen activation, and the enhancement of existing networks as a necessary resource to ensure effectiveness and sustainability of the public actions, in order to give citizens the tools to carry out a new active role of monitoring and evaluating public affairs. These orientations put the basis for a new partnership between public administration and cit-

¹ The article is the result of joint work of the two researchers. However, paragraphs 1 and 3 are attributed to David Arcidiacono, and paragraphs 2 and 4 are attributed to Giuseppe Reale. The concluding paragraph (5) puts together some common remarks of the two authors.

izens along three main lines (O'Reilly 2011; Linders 2012; Lovari 2013): the state and local governments maintain the primary responsibility of the collective welfare, but citizens have a duty to influence the level of public awareness and the results reached (*citizen sourcing*); the availability of technological infrastructure for the development of a new collaborative system between public and private spheres (*government as a platform*); facilitate self-production and co-production processes (*do it yourself government*). In this process of reconfiguring the relationship between citizens and administration, the characters of a new "monitory democracy" (Ceccarini 2015; Keane 2009) seems to take the stage, in which the activist networks are fed through the endless and chaotic flow of information in the digital environment.

The ability to govern and build the sense of this huge amount of knowledge becomes crucial in this new perspective. So a relevant issue concerns Open Data, defined by the Open Knowledge Foundation as "Open data is data that can be freely used, reused and redistributed by anyone – subject only, at most, to the requirement to attribute and share alike"² which is seen as an essential tool to implement not only monitoring and evaluation of public policies, but also as a valuable raw material to develop and co-produce smart services generating potential social innovation processes³. The above definition focuses on access to data that should not only be made available online in an interoperable format, but must also be released without restrictions that limit the reuse, facilitating integration with other data, and also redistribution for commercial purposes. The Open Data becomes a crucial hub for implementing the Open Government principles, stimulating collaborative models between institutions and local com-

² The Open Knowledge Foundation, founded in 2004 in Cambridge, is a non-profit organization with the aim to promote open data policies. See www.okfn.org

³ It should be made clear at this point how often the concept of Open Data only partially overlaps with other concepts such as Open Government and transparency, often used incorrectly as synonyms. The term Open Government means that "the openness and transparency of public administration process at the local and the central level [...] so, the open government expression refers to a pretty fluid concept: in fact, it includes e-government procedures and also those of e-governance but they can only be partially overlapped with the forms of e-democracy" (De Blasio 2014, 45); administrative transparency rather concerns the legal obligations relating to the publication of the government data, so they are immediately knowable to all citizens. The Open Data does not necessarily coincide with the data made transparent. Otherwise, the transparency does not automatically mean opening, but through the opening of the data we could pursue the goal of transparency. However, the issue of interoperability and open licenses may indeed preclude the accessibility and the intelligibility of information to a wide audience, creating a *de facto* "transparency for a few".

munities for the development of new services and applications that integrate and potentiate those already offered, according to the logic of co-production⁴.

This process is part of a more comprehensive change in the productive paradigms determined by the disruptive role of digital technologies. Now we speak of the relevance of *collective intelligence* (Tovey 2008) or *open innovation systems* (Chesbrough 2003) and *crowdsourcing* (Howe 2006), outsourcing to customers/users their professional or amateur expertise and capabilities to solve problems more or less complex, even in the public sphere. In this new space of interactions we could speak of *commons-based peer production systems*, that is, a collaborative production based on horizontal models of governance and the principle of open access (Benkler and Nissenbaum 2006; Botsman and Rogers 2010; Rifkin 2014). These new forms of participative production are quite relevant among the *millennials*, a young generation with high familiarity and skills with digital technology or digital ways of social interactions.

The Open Data issue can also be seen as a result of a coercive and institutional isomorphism (Powell and Di Maggio 1991), already visible by the rapid spread of Open Data Portals from 2009 (e.g., the American portal data.gov). Actually, 69 countries participate in the Open Government Partnership, and in 2013 56% of the OECD countries already had a national strategy on Open Data. According to the Open Data Barometer (2016), the Mediterranean countries, including Italy⁵, compared less well with the liberal countries, because they were characterized by a greater tradition of "closeness" with regards to public sector information⁶. It has been highlighted (Reale 2014) that this data divide is largely tied to the different institutional structures of the Mediterranean countries that affects the different capacity of governments to recognize the usefulness of data disclosure and the acquisition of the necessary skills to extract value from this information. In addition, more recent analysis (Reale *et al.* 2016) tends to show that in countries such as Italy the strategies and national policies on Open Data are less focused on the data re-use and the co-production of services, but more as an instrument of civic control and as an anti-corruption tool.

⁴ In the European Commission communication "Open data, an engine for innovation, growth and transparent governance", adopted as part of the European Strategy for Open Data, presented in 2011 by Neelie Kroes, European Commissioner for the Digital Agenda, it is emphasized that making Public Sector Information (PSI) available and accessible is a pre-requisite for the economic growth of the euro-zone and for the efficiency and effectiveness of public administration.

⁵ The first national Open Data portal dates back to 2011, despite the pioneering experience of Piemonte, which goes back to the end of 2010.

⁶ In 2014, only 10,511 datasets in Italy were released and only a small part of which were in a fully open and interoperable format, compared to almost 200,000 datasets of countries such as Canada (Oecd 2014).

2. Research Design: objectives and methods

The object of our analysis is the Open Data movement. We refer therefore to the Open Data movement as that particular category of aggregation of individuals pursuing as a primary and exclusive objective the data disclosure of PSI in open licenses. This type of movement is not only a promoter of the public data disclosure, but also a 'meaning builder' because this information is not directly usable by citizens and even the public administration is not able to fully understand the potential of Open Data. In particular, some members of ODS, who also collaborate for with the public administration, emphasized the absence of expertise and skills adequate in the PA, with a risk of "open data washing", drifting the issue of data disclosure and transparency only for consensus and propaganda. Similar remarks are common in recent studies (Porlezza 2016; Splendore 2016) demonstrating the inadequacy of the Italian public administration in dealing with the issue of open data.

Therefore, the movement for Open Data has a peculiar identity and purposes, even if the public data disclosure could intersect or overlap with several collective mobilizations or associations.

The work presented is a case study on the genesis and evolution of the movement Open Data Sicilia (ODS): an online group of more than 700 activists⁷ in Sicily that aggregated groups of citizens from different provinces of the island in less than 12 months. It is the largest online community focused on the issue of Open Data in Italy.

Through this case study we intend to analyze the topic of Open Data from a new point of view. On this issue there is a vast literature that is either mostly technical (Auer et al. 2014; Volk 2011), legal (Carloni 2014; Aliprandi 2014), or even concentrated on the economic impact of data disclosure (Bates 2012; Gurin 2014; Kitchin 2014). However, we chose to study the phenomenon from the point of view of an open data movement, on which there is a paucity of literature (Bruno et al. 2014; Gurstein 2011; Postigo 2012). We consider as an open data movement those spontaneous groups who mobilize for the release of public data. The aim of the study is to look closer into the organizational dynamics that define their action between activism and co-production. The analysis has the exploratory aims of trying to find answers to a number of heuristic questions: what is the profile of the Open Data activists? How is their network organized? What are the common purposes and solidarity models embodied by

⁷ This data was detected in August, 2015.

the movement? What are the mobilized resources? What are their strategies and models of action?

We adopt a quali-quantitative approach (Trobia 2005), bringing together the information gathered through participant observation occurring at different times of “physical” or “digital” aggregation of ODS members, along with “netnographic” data (Kozinets, 2010) collected from the digital platforms used by the activists (Facebook, Twitter, Nabble, WordPress). The local dimension of the analysis is an element of strength from a methodological point of view because the battle for Open Data is increasingly a challenge that mobilizes local communities.

For the reconstruction of the social profile of the activists we collected the information available on the blog or their accounts on Facebook or Twitter. Where, some information were not available we detected directly from the activists during the ethnographic observation phases.

In the analysis of internal organizational dynamics we have used especially the social network analysis but also we adopted specific indicators of engagement and influence calculated on the basis of the digital analytics of ODS accounts. These data were crossed with the information gathered during the ethnographic observation phase.

As previously argued, co-production is important aspect of digital activism tied to the principles of openness. To analyze this strategic activity of ODS we tried to reconstruct their peer2peer collaborative mode of production, mostly used specific tools for the analysis of conversations in the mailing list of the movement, but also collecting during the participation in the different moments dedicated to collaborative production during some ODS meetings.

3. Open Data Sicilia: genesis and organization through ethnographic observation

The ODS movement was founded in 2013 thanks to an informal group of professional and digital amateurs interested in Open Data, who are already active in various online groups at national and local levels. This movement, since its first steps, seems to have its ideological roots in the concept of openness (Paccagnella 2010; Sartori 2013) and in hacker ethics (Di Corinto and Tozzi 2002; Levy 1984).

The inspirational model is the Anglo-Saxon experience of web communities that collaboratively elaborate interactive services for citizens such as FixMyStreets and Open Street Map. ODS are inspired by these aggregations of technological and civic communities based on the value of openness, considering “not only open data” - as says one of the founders during a meeting - “but open source and open thinking too”. The value

of open access represents the ideological “glue” of these experiences of mobilization that embrace a framework of an active paradigm based on horizontality, disintermediation, and co-production/co-generation process.

Another important cultural reference for the movement is the “hacker ethics” as a group of computer experts who interact mostly online, adopting creative and collaborative programming models (Aime and Cossetta 2010; Di Corinto and Tozzi 2002). The values of responsibility, openness, collaboration and freedom to which it refers have obvious socio-political values that have permeated the narrative of those who work with the web, defending the free software culture and its prerogatives (freedom to run, study, distribution, and improvement) (Paccagnella 2010). This is the “open thinking” mentioned before, which reflects any specific strategic and communicative choice of ODS; for example, the logo of the movement (a cloud from which rains down some binary codes) is released under open license, meaning that it is replicated and re-used on the web, and taken up virally by many other digital activists and online groups.

Despite the main reference values of ODS being clear and easily identifiable, in the participant observation phase we have not found a common view on its identity. In their blog, for example, they introduce themselves with the words “ODS is a civic initiative that aims to raise awareness and spread the culture of open government and practices of open data in our territory through an open public discussion” (opendatasicilia.it). At the same time, some members of the movement represent ODS, during the moment of ethnographic observation, as “a spontaneous aggregation of citizens”, or even “an association of active citizenship”, although there is no formal or substantive act that could justify the use of this expression. Their narrative stems from the idea that they are promoters of “simple but critical actions for a new political action”-said one of the activist during a meeting. However, some members interviewed also refer to ODS as a “conversational space”, “a social collector, a place of confrontation of ideas and experiences” that embodies the idea of a free, non-hierarchical and horizontal space of aggregation. Quite different then is a narrative that has emerged from the most recent posts on the social network and in the blog of ODS, or even during some different offline meetings: one of the founders simply declared, “we are not an association but an active special interest group focused on Open Data” or “an interest group determined and well organized [...] capable of bringing innovation in such a vast and practically virgin territory, as Sicily”. It seems best to summarize the nature of ODS as an interest group and an aggregation of citizens, confirming ODS as a sort of boundary organization (Guston 2011) with an increasing hybridization in the form of political action between the public and the private spheres.

In fact, the founding members of the movement were already digital activists, but they were also young digital professionals following the model of a small “community of practice”, or “community of practitioners”; these founders consist of a geomatic consultant who uses Open Data through GIS software, a free-lance data-journalist, and an ICT consultant in the field of social innovation in the Public Administration. All of these actors are in the early stage of their professional career and they move easily in the network of amateurs and professionals with high levels of endorsement (one is an Italian Ambassador of the Open Knowledge Foundation, another one has received several international awards for the construction of innovative Open Data portals, etc.). One of the main goals of ODS activists is to act not only as a promoter of citizen engagement, but also to propose themselves as a competent partner for local administrators in order to get some professional advantages from this new wave of the digitization of public administration. This aim is explicitly put in evidence by one of the ODS activists:

In my opinion, the public management of information systems is undersized. As a pressure group, we need to provide political weight to a strategy in favor of a more extensive digitalization of whole the administration.

The initial participatory model of ODS was based on an elitist conception of action based on the monopoly of knowledge and skills about data among the small group of the founders. However, the founders, since the beginning, were aware that they had developed strong individuality, professionalism and a very relevant digital reputation on this issue creating simply a community “for the few” instead of a “critical mass aggregation” (quoting one of the ODS founders). A transitional choice was to open up their network (where the interaction was based on a closed systems – a Google group) in a social network environment, constituting the Facebook Group Page Open Data Sicilia. The idea was not quite original because other groups at the local level had moved already in this way (Open Data Venice, Matera Open Data, etc.). The choice met some resistance. For some of the original group of activists Facebook is an unsuitable tool for the purposes of ODS because:

it is useful to raise awareness but there are limits for a true dialogue in depth, for actions that require time, that are more structured, and with more exchanges, while a post on Facebook after a few hours immediately goes down (ODS founder).

However, as defined by another activist, this “radical chic” attitude is undermined by the need to increase the base of the movement and its legitimacy, mobilizing a real

constituency that is able to give strength and “amplify the contractual power of ODS”. According to one activist, the founders need convincing to “get our hands dirty [...] we need to find other crazy people like us, capable of doing things with open data, but not only that”.

The great energy given to this new course far exceeds the initial doubts. In less than a year, this small group of a dozen of activists has exceeded 700 fans, becoming the most popular Open Data Group on Facebook in Italy (Table 1).

Table. 1 Open Data Groups Active on Facebook-Italia in 2015

<i>Groups</i>	<i>N.</i>
Open Data Sicilia	748
Open Data Venezia	447
Open Data Calabria	97
Open Data Torino	103
Open Data Emilia Romagna	245
Open Data Bari	131
Open Data Romagna	263
Open Data Territorio Enna	325
Open Data Lecce	679
Sardinia Open Data	510
Open Data Milano	89
Open Data Salerno	33
Open Data Trentino	396
Open Data Matera	334

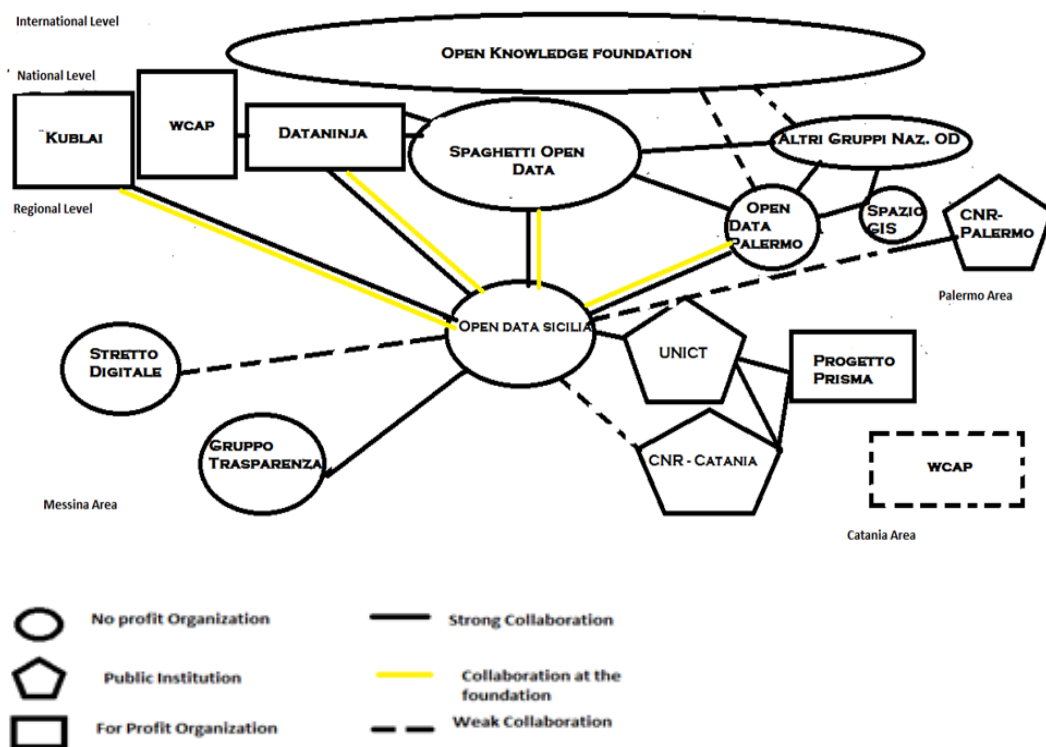
Source: personal elaboration Facebook data retrieved the 26th of august 2015

The choice is a clear success and it allows the expansion of not only the constituency, but also the relaunch of the horizontality and the openness of the movement. In addition, the arrival on Facebook expands the territorial boundaries of ODS, which had been partly ‘confined’ in the origin territorial areas of the founders (the province of Messina and Palermo), especially including the province of Catania. It also enables new partnerships with groups specializing in similar or related issues such as *Gruppo Trasparenza* and *Stretto Digitale*. The strategy adopted allows the expansion of the quantity and quality of human capital of the movement, intensifying its co-production capacity with the inclusion of new professionalism and skills, not simply in the ICT sphere (as sociologists, project managers, communication experts, etc.).

The growing size and complexity of the movement does not alter its organizational model: a purely fluid structure, with forms of horizontal coordination in a sort of matrix structure. It brings together the expertise possessed and the purposes planned according to a crowdsourcing logic, without formal hierarchies but with contingent project

leaderships. The movement rejects any calls to strong political symbols and narratives. They promote a great individuality and personal activation seen as a dynamic resource because, according to one activist, it is a "community of actions" or a "community of individuals".

Figure 1. The Open Data Sicilia Network.



Source: elaboration based on the ethnographic observation in 2015

We reconstruct the network of ODS through the analysis of projects and contacts of the movement (Figure 1). Even if it is impossible to speak clearly of institutionalized collaboration, we could speak more of informal contacts and synergies, for the most part managed on an individual basis. Palermo is symbolically the hegemonic area of the movement because the first activities of ODS started in a smaller group, called Open

Data Palermo, who elaborated the guideline for data disclosure in collaboration with the local municipality. Despite Open Data Palermo now being absorbed into Open Data Sicilia, it continues to play a leading role in the movement as a sort of benchmark. However, the other two main geographical areas, Messina and Catania, claim their autonomy and authority. The presence of ODS in Messina seems to be related to the *Kublai project*⁸ or to the collaboration with *Gruppo Trasparenza*⁹ and *Stretto Digitale*¹⁰, that want to maintain their operational and strategic autonomy from ODS. However, Catania, as the last area included in ODS and less present in the original core of the founders' network, claims a more relevant role in the movement. This area is quite important because of the presence of a subsidiary of Working Capital, one of the biggest incubators financed by the most important Italian ICT company, Telecom. Therefore, Catania can be distinguished as a dense area in terms of collaborations between the movement and academia, as an essential factor in building an environment conducive to social-innovation.

In the absence of a formal hierarchy or clearly defined leadership, the members speak about the principle of "the authority of doing", which is attributable to each member regardless of the time of their experience within the movement. Such a reality not only confirms the cultural value of individualism, but also highlights the osmosis between individualistic actions and movement goals. The fact that so many members of ODS are professionals, operating even as consultants, makes the boundaries between the movement's aims and their professional interests quite blurred. So we have a lot individual action 'played' in the name of the movement that could not be separated by their personal branding strategies, oriented to the construction of their own job reputation online and offline. In this mutual exchange between individual interests and the movement's aims we could detect the selective incentives for the participation of many of those who collaborate with ODS.

This reality is especially evident in the issue of digital champions, a position established by the European Union in 2012, and which is seen as a kind of 'digital innovation ambassador' in every country. In Italy, unlike the rest of Europe, we have not chosen the path of a unique ambassador, but rather multiple representatives which tends to highlight the importance of local territorial networks in our country. It is clear that the

⁸ The Kublai project, created in 2008, is a platform that aims to create a "collaborative environment for developing ideas and initiatives in the digital environment that have an impact on the territory and promote its development" (www.progettokublai.net)

⁹ This group is composed of public administration employees who promote innovation through the implementation of transparency rules.

¹⁰ This group aspires to join the digital innovation movement active in Messina and in Reggio Calabria.

digital champion nomination has become an important event for all those working in the ICT sector and it could not be coincidental that most of the digital champions are nominated from among the members of some Open Data groups such as ODS: many ODS members, project leaders in more than one ODS project, easily became digital champions; at the same time, those who were already champions became among the most active actors within the movement in order to consolidate their reputation and public visibility.

The principle of “the authority of doing” also rewards the role of the founders, appearing those better tied to the Open Data Movement at the national or international level. Therefore, the conflicts and coordination among the principal areas of the movement are increasing along with its expansion. The most active leaders of the movement are aware how, proportionally with the growth and ambitions of ODS, its fluid and informal organization could be inadequate for its development and the achievement of higher objectives. However, the theme of institutionalization appears to be a new source of internal tensions. On one hand, there are the founders who are quite jealous of the current model and the balance achieved between the movement’s goals and the pursuit of professional interests. Some of the activists interviewed declared they do not harbor any confidence in the effectiveness of a more structured organizational model, and are disappointed by the previous experience of associative militancy. They consider the creation of a formal organization as a hasty step for a group that is considered “not mature enough”(ODS founder). In fact, once activist used the expression “we must preserve Open Data Sicilia”. On the other hand, some activists do not deny the potential benefits of an associative structure: that is, from a greater lobbying power to being able to sit with a clearer identity within specific working groups with the public administration:

I think that creating an association would facilitate greatly the relationship with other organizations and it would also give a higher weight to our actions in connection with the institutions, we would be an entity with a legal identity and not just a bunch of nerds. It means knowing who we are and what we want to do, making us recognizable outside (ODS Mailing List post).

This choice for ODS could represent an opportunity to give a formal role system, defining specific and coherent communicative choices, but also to gain the possibility of obtaining a budget that affects the quality of the initiatives promoted. In particular, they are interested in participating in community planning and European projects (Horizon 2020, the European Social Fund, Pon Metro) that would provide funds in the

field of smart communities within the major metropolitan areas. As one activist observed,

I propose that the ODS community gives a reading of the following European call that I have already skimmed the criterion of #opendata tag, #socialmedia, #partecipazione, #opengovernment, [...] we think that some local networks can be built (universities, business incubators, associations active in the area ...) to submit project proposals. It is a very interesting call for both the PA and for communities and professionals who are dedicating themselves to open data in the various EU territories (ODS Mailing List post).

The issue of financial resources is quite central among the supporters of the transition to a formal association. They consider it a mistake not to capitalize the efforts made in ODS and not to take advantage of the particular contingency in terms of available funds. The decision means to remove the thin veil that separates civic and professional interests within the movement. Moreover, they consider the opportunity to define hierarchies and rules, or to introduce representation mechanisms, overturning actual leadership and activation mechanisms. Therefore, the main activists in the area of Catania mostly support this option, facing the resistance and the reluctance of the great part of the dominant group in Palermo. The activists from Palermo imagine possible hybrid solutions with the constitution of micro-organizations at the local level, leaving ODS as a free and not institutionalized space for discussion and coordination among the activists at a regional level. They want to avoid the overlap of the "Open Data business" and the aim of improving the 'open data culture', which is the privileged scope of ODS.

The question of the constitution of the movement's institutionalization also stems from the growing strategy of acting offline. The network initially was developed especially through the social network, now it increasingly tends to elaborate projects offline pursuing a strategy of "territorialization" of its action. Recently, ODS has enlarged the moments of 'physical' meeting among the members (for example through the creation of meetings, conferences or hackathons). The movement also organizes some initiatives of meeting with politicians, entrepreneurs, and non-profit organizations, as in projects such as #IOVOTOPENDATA, the OPEN DATA TOUR, or engaging new experiences of cooperation with local authorities for the development and co/production of services, such as ALBO POP, or the Unofficial OPEN DATA PORTAL of the Sicilian Region.

4. Relations and co-production in ODS through a netnographic approach

The ODS movement is characterized by a multi-channel activation strategy that has been structured over time and it has become not only a tool to enlarge the constituency and the visibility of the movement, but it has also been a self-reflexive system that has shaped and co-built the models of internal organization and interaction. We try to look through their online “traces” in an effort to point out the characteristics and profiles of the emerging leaders and followers, the participation patterns, and their internal organizational processes. All these elements could be observed in depth by analyzing the content of online conversations, or by using the analytics extracted from the social platforms used (Table 2).

In particular, we will consider the following data sources:

- The open document about the establishment of the blog, which is an essential source of information on the ODS’ internal debate about its identity and its models of action;
- The analytics data of the blog and the main social networks used in order to analyze the internal interaction patterns and the external communication activities;
- The online conversations of ODS members inside the mailing list to identify relevant issues and areas of action;
- The specific cases of some of the most successful initiatives (exclusively online or between online and offline).

The analysis was conducted using specialized software such as Google Analytics, Socioviz, Netvizz, Gephi, Klear, Grytics and T-Lab.

Table. 2. The Main Strategic Channels of the Open Data Sicilia Movement

<i>Channel</i>	<i>Opening Date</i>	<i>Subscribers</i>	<i>Activities</i>
Facebook (group)	23/08/2013	748 (561 active members)	1.094 post
Twitter	13/08/2015	348 follower/274 following	411 tweet
Mailing List	22/09/2014	74	234 topics

Source: personal elaboration ODS web analytics retrieved the 26th of august 2015

4.1 Networks and Hierarchies

The web domain “opendatasicilia.it” was registered on March 28, 2014 after a brief exchange of ideas among a core group of Sicilian opendata activists who met in Bologna on the occasion of SOD14, the second national meeting organized by “Spaghetti Open Data”, the biggest Italian community on Open Data.

The site was co-designed online between June and July 2014 starting from an exchange of proposals and comments on a shared open document called “Building OpenDataSicilia”, which was created on Google Drive and freely accessible online. From the comments on the initial draft, there emerged two perspectives: the first stance, but supported by a minority, was to push to broaden the discussion by referring to the more general concept of “openness” and preferring the name “Open Sicilia” (“My fear,” says one of the activists, “is that the target of our communications (people to engage, involve and inform, could have a prejudice reading the word ‘data’ considering it too technical”). The second stance, preferred the name “OpenDataSicilia” because they want a strong identification of the group with the word “data” because “if we are focused, we will be more incisive.”

However, although the mission initially proposed that “OpenDataSicilia.it” aims “to promote a participated debate on the theme of Open Data in Sicily, comparing different experiences and stimulating the local environment”, the latest definition goes beyond the narrow focus on data; so, “#opendatasicilia is a civic initiative that aims to spread the culture of open government and the practice of open data in our territory developing a participatory public discussion on this issue”.

From the operative aims outlined in the founding document, three key actions of the movement in particular emerge: “Control” of local authorities through the released data, on their “level of openness”; “Community mapping” of the Sicilian territory, which highlights the significant presence of geomatics experts inside the group; and “Training” in the field of Open Data, as a necessary instrument enabling an Open Data culture among the younger generations “to create the hard core of the new Sicilian active citizens, operating in the local context”. It is evident, even at this embryonic stage, that the interest to give space to “tutorials” and “cases study and best practice”, including cases of Open Data reuse for commercial purposes, creates possible engagement with “companies that use open data to make business” or “companies that produce open data”.

According to the greatest part of ODS' members, the management of the blog seems a significant challenge, said one of the activist in the open conversation on line to build up this space, "for a group so little structured, even from an editorial point of view": many people fear, in fact, not being able to effectively manage their content or maintain an appropriate updating of contents. However, these members of ODS do not realize initially how the blog is more than an instrument of communications, but also represents their organizational matrix. It is quite evident how the blog becomes their *legal residence* as well as their dialectic arena and managerial model.

Within a year, the *opendatasicilia.it* blog published 68 articles/posts, with an average of almost five articles per month: a good result considering the initial doubts. The tools and metrics provided by Google Analytics help us to analyze the first 13 months of the blog's life (July 14, 2014 - August 14, 2015). In total, 7,621 users opened at least one session¹¹ and the total of initiated sessions was 11,905. Of these, 35.9% (4,277 sessions) depends on recurring visitors, while 64.1% (7,628 sessions) regards new visitors. The total views of the page (including repeat views on the same page) were 21,668. The indicator "average depth of the page"¹² was 1.79, while the average length of a session was 2.06 minutes; however the "bounce rate"¹³ was equal to 57.45%: a good result for a blog that shows a niche of frequent users, often similar to other sites focused on specific topics.

From the analysis of the demographic data¹⁴ on the users of the blog, there is a predominance of young male users (54.15%); over 60% are in the range between 18 and 34 years, confirming the young profile of these activists. Examining deep the data, it is clear that the two main cores are located in the two biggest cities in Sicily: Palermo (27.49%) and Catania (14.41%). It is interesting that the sessions from Palermo are almost twice those from Catania, a further confirmation that the core of the group is currently focused around that area.

¹¹ A session is a group of interactions that occurs on a website in a given period of time. For example, a single session may contain more than one screen or page views, events, social interaction or even e-commerce transactions.

¹² The relationship between the previous two values, page/session, which expresses the average number of pages viewed in the same session.

¹³ The percentage of single-page sessions with users leaving the site from the same page from which they entered, without making any other interactions.

¹⁴ Data are collected by Google via of cookies tracking, through an identification code, which tracks the activities and visits that we carry through a web browser on a specific computer. It is not a detection of specific people but an association between certain activities and some demographic variables. The data collected will also take account of the information entered on the Google profiles.

The Facebook group of ODS, created 23 August, 2013, was the first channel used to try to aggregate activists and experts on Open Data. By the end of 2015, the groups had almost 748 members, 561 of whom are active members who post, comment or express likes at least once. By analyzing the activities of the group we know that 1,094 posts have been published, 11% of the overall activity, they received a total of 4,656 likes (48% of the group activities) and 4,000 comments (41% of the total activity).

Going deep into the data on the posts by type, it is clear that they are above all textual contents, "status updates" (48%), which is a type of content that requires a higher level of attention and participation than the others; after that we find posts with links to other content on the web (46%). There is a little presence, however, of posts for sharing photos (3%), events (3%) and video (1%). These data show a clear snapshot of the ODS Facebook group characterized by a real exchange of "active" communication, with a willingness to share insights and updates found in the web, without using photos or videos in order to easily increase the engagement.

In the case of the ODS group, the number of likes (47%) and comments (41%) is very close. This shows that, despite the prevalence of actions with a lower intensity of participation, the share of the comments is significant, highlighting a good intensity of interaction among the members. Calculating the level of engagement through the "engagement score"¹⁵, which measures the average engagement generated by a post, in our case it is equal to 11.57. This reflects a high level of involvement among the group members. Altogether, 86.65% of the published posts generate an interaction, although only 57.76% of that interaction takes the form of a comment. The level of activity of the group measured by the "activity score"¹⁶ is equal to 13.28, a satisfactory value considering the early stages in which the online activities of ODS were limited, as were the number of subscribers and interactions. However, it is evident that there has been a constant growth over time in the number of posts; in the last year, in particular, it has reached significant levels remaining above 50 monthly posts starting from the end of 2014. In addition, the average duration of the talk generated by a post (its "life cycle") is about 53 hours, although it should be noted that a similar level of engagement is largely due to a niche of activists; In fact, 50.62% of the members have never expressed a "like", and 72.4% has never expressed a comment.

Despite the fact that the movement qualifies itself as a horizontal and disintermediated network of actors, the analysis shown in Figure 2 shows the presence of true gatekeepers of information, represented by the darker blue nodes. From the figure it is

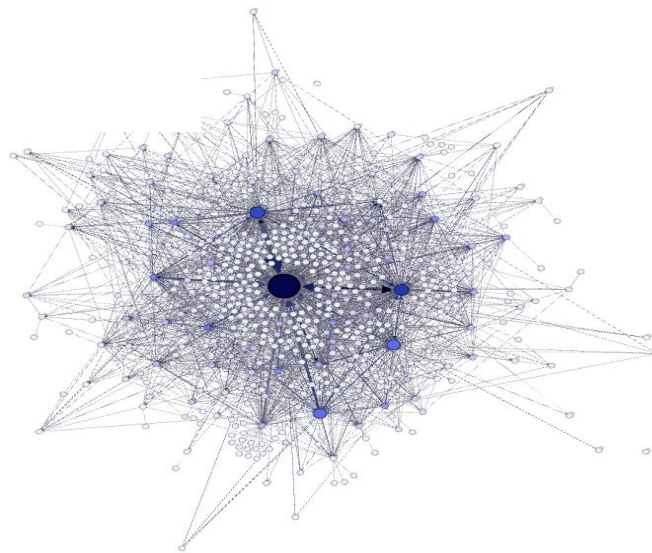
¹⁵ Engagement score = (2 * number of comments + number of likes) / number of posts.

¹⁶ Activity score = (Number of posts + number of comments + likes of number) / Number of days.

evident that the communicative activities of the group is strongly oriented by the members with the highest outdegree value that could reach more nodes, and that they are more able to communicate and share more information within the network. These nodes have higher outdegree values with respect to all the other members: the central node is an outdegree level of 107, while the node to the right and one on the upper left have values respectively equal to 73 and 66; furthermore, the majority of the remaining nodes in the network have a level between 0 (white in color) and 18 (light blue).

Figure 2. ODS network seen from the Facebook Group (2015).

Average degree: 4,146
Network Diameter: 5
Graph Density: 0.007



Source: personal elaboration ODS Facebook Group members

In Table 3 it is possible to see who the main activists on the Facebook channel are: the data shows the substantial leadership of one of the founders coming from Palermo (AB) which is clearly above the others for the number of posts published, as well as for the level of engagement and influence. To contend for this space, the most active representative of the Catania area (CL), which, although from a distance, tries to build an autonomous leadership, or at least an alternative one. The other areas of the region seems marginal and under-represented inside the movement, while it is worth highlighting the presence of important exponents of the Open Data digital and innovation movement at the national level (FC, MN, FP, ANM).

Table 3. Top Activists of the FB group of Open Data Sicilia

User	Area	Digital Champion	Top engaged ¹⁷	Top publishers	Top Commenters	Top Influencer ¹⁸
AB	Palermo	YES	1568 (1°)	274 (1°)	857 (1°)	3768 (1°)
CL	Catania	YES	1100 (2°)	131 (2°)	680 (2°)	1262 (2°)
CS	Palermo	YES	596 (3°)	30 (5°)	360 (3°)	366 (5°)
NG	Messina	YES	471 (4°)	43 (4°)	108 (6°)	344 (6°)
ANM	Bologna/Messina	NO	465 (5°)	47 (3°)	204 (4°)	631 (3°)
FP	Lecce/Matera	YES	326 (6°)	-	157 (5°)	-
GDP	Caltanissetta	NO	191 (7°)	-	-	-
GLM	Caltanissetta	YES	173 (8°)	-	-	-
IV	Napoli	NO	163 (9°)	-	76 (8°)	-
GDC	Palermo	NO	145 (10°)	26 (7°)	67 (9°)	456 (4°)
FDA	Messina	NO	-	21 (8°)	-	-
LS	Messina	YES	-	20 (9°)	55 (11°)	-
GCV	Enna	NO	-	20 (10°)	53 (12°)	162 (8°)
SLB	Palermo	NO	144 (11°)	13 (12°)	61 (10°)	120 (11°)
FC	Londra/Palermo	NO	-	17 (11°)	-	150 (9°)
MN	Trento	YES	-	-	86 (7°)	-
EA	Agrigento	YES	-	-	-	128 (10°)

Source: personal elaboration ODS Facebook Group analytics retrieved the 26th of august 2015

The ODS mailing list, active since September 2014, is one of the latest communication channels set up by the founders of the group in order to create a more suitable space of interaction between the most active ODS members. As of 13 August, 2015, there are 73 addresses on the ODS mailing list, 67 of which have opted to receive all e-mail in real time, while the remaining seven have opted for the digest mode. The 74 members of the mailing list can be considered as the most active core and purposeful with high skills in the field of Open Data. This small group is the strategic core of the ODS movement, that defines strategies and modes of action. Following the principles and values of openness that are at the base of the movement, they decided to make the contents and the mailing list interactions public and accessible to all through the Nabble platform, in a logic of full transparency.

Using the number of posts as a quantitative indicator of the intensity of participation and influence of single participants, it is possible to confirm the previous data on the leadership: there are four subjects that exceed the number of 50 posts since the birth of the mailing list (22 September, 2014). From Table 4 it is also possible to note that in

¹⁷ The engagement of the single member is based on the following calculation: 2* number of posts + number of comments + number of likes.

¹⁸ The *Influence score* = number of likes + 2*number of comments received on his posts.

this case the weight of the city of Palermo emerges from which come the first (AB with 443 posts), the third (CS with 181 posts) and the fourth (GDC with 67 posts) leaders in terms of posts. In second place, Catania (CL with 216 posts) and a user that resides in Bologna (the Italian city hosting many of the meetings of the national group SOD “Spaghetti Open Data”), but he was born in Messina. The data shows that many activists have technical profiles related to the ICT industry, though with different expertise (programming, semantic web, GIS, engineering, etc.). Many of them are digital champions working in different areas in public administration, academic research, consulting.

These results confirm what already emerged from the social media analysis and the ethnographic analysis: on one hand, the central role of the area of Palermo in the development of strategies and actions; on the other hand, the rise of the area of Catania, mobilized by a young researcher in computer science at the University of Catania.

Table 4. The Most Active Members in the ODS Mailing List (Sept. 2014 – Aug. 2015)

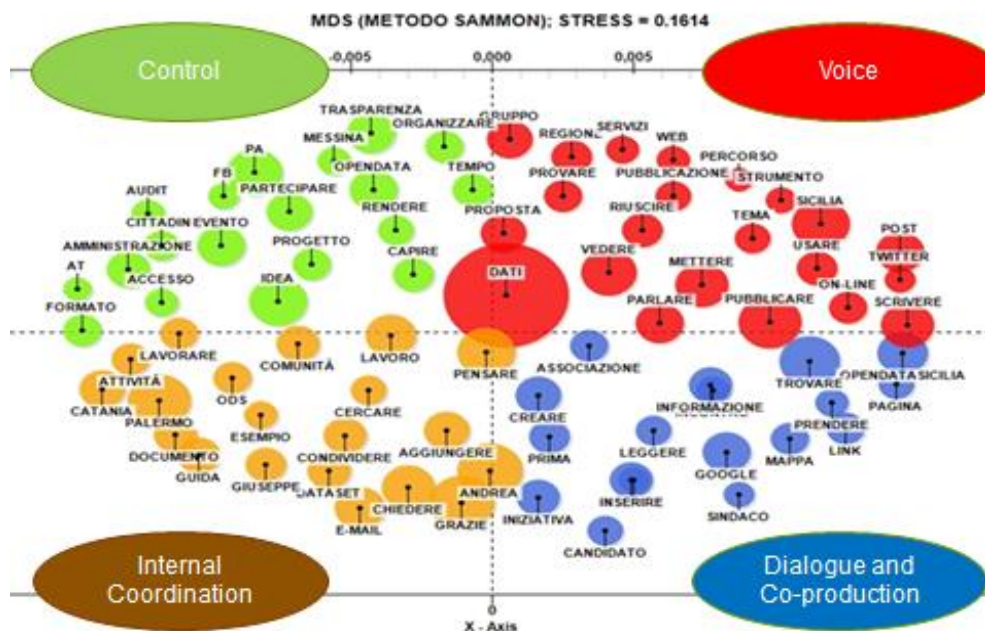
<i>Initials</i>	<i>City</i>	<i>Sector</i>	<i>Digital Champion</i>	<i>Number of posts</i>
AB	Palermo	Geomatic (freelance)	YES	443
CL	Catania	Research Assistant Unict	YES	216
CS	Palermo	IT technician (PA)	YES	181
ANM	Bologna (Messina)	<i>Data journalist</i> (freelance)	NO	134
GDC	Palermo	Expert in urban mobility	NO	67
GLM	Caltanissetta	Entrepreneur ICT	YES	63
LS	Messina	Official (PA)	YES	53

Source: personal elaboration ODS Mailing list analytics retrieved the 26th of august 2015

4.2 Actions and co-productions

The mailing list has been subjected to content analysis using the T-Lab software. The corpus analyzed was created with all the emails exchanged through the address opendatasicilia@groups.dataninja.it (and archived on the forum Nabble) from 22 September, 2014 (the date of the creation of the mailing list) to 11 August, 2015.

Figure 3. Map of the thematic unit (co-word analysis) of ODS Mailing List (September 2014 - August 2015).



Source: personal elaboration ODS Mailing list messages

The concepts map (Figure 3) is based on the co-occurrence of words in the entire corpus analyzed. It shows four core themes articulated in two fundamental dimensions. The vertical axis represents the 'action' dimension articulated between two semantic poles, collaboration and dialogue (at the bottom), and that of voice and protest (at the top). On the horizontal axis we identify the dimension of the space of action between inside (on the left) and outside (on the right).

On the top left in green, we find the theming of the movement's role as a watchdog of public administration: the most common words are "PA" (weight, 173; centrality, 0.054), "administration" (weight, 104; centrality, 0.032), co-occurring with the concepts "transparency" (weight, 132; centrality 0.052), and "audit" (weight, 70; centrality, 0.037); however, there is also "access" (weight, 60; centrality, 0.028), "AT" (weight 41; centrality, 0.029), "project" (weight, 90; centrality, 0.026), "idea" (weight, 174; centrality, 0.042), "Open Data" (weight, 134; centrality, 0.05), and "citizens" (weight, 76; centrality, 0.036). In this sphere of action we could include all the initiatives of monitoring of public action, first of all through the analysis of data released in open format, but also through the construction of tools and indicators for the evaluation of Open Data and transparency policies in the different Sicilian administrations. The area of "Messina" (weight, 69; centrality, 0.033) seems the most focused on this issue, due to the role of the *Gruppo Trasparenza* that is more and more involved in ODS.

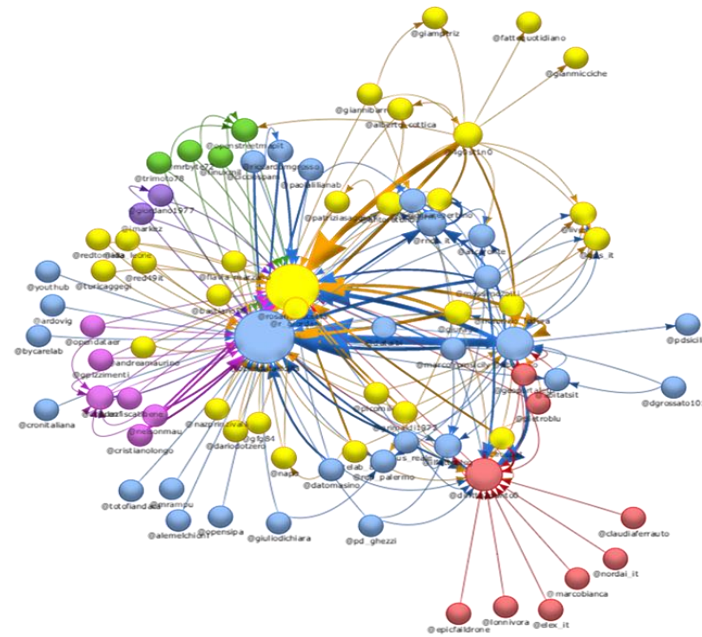
The word "data" (weight, 575; centrality, 0.078) represents a sort of bridge toward the external action of dissemination of the "Open Data culture" among citizens visible in the red area: the words "put" (weight, 136; centrality, 0.037), "publish" (weight, 207; centrality, 0.051), "write" (weight, 145; centrality, 0.045) are mainly related to the external communication action realized especially through the digital media, as shown by the recurrence of words such as 'post' (weight, 133; centrality, 0.045), "online" (weight, 79; centrality, 0.033), "Twitter" (weight, 58; centrality, 0.023), "web" (weight, 67; centrality, 0.042). This thematic area, that we define as the area of "voice", concerns all the actions organized by ODS as "demonstration", processing public data (often visualized on a map) to push some reflection on these issues (in particular, on mobility and the environment), or in real action of protest.

This is the case of a recent ODS action on the Sicilian Geographic Information System (SITR), that was suddenly turned off in 2015 due to 'technical problems'. ODS has highlighted the public resources spent on the SITR (more than 9 million euro of the FESR 2007-2013). The ODS group decided to become a promoter of a pressure action by organizing a tweetstorming against the Twitter account (@rosariocrocetta) of the President of the Sicilian regional government (see Figure 4).

The action started on 10 August, 2015 and lasted for the next two days; it involved an increasing number of tweets (132) and re-tweets (83). This action of voice involved 79 members who "bombed" the account of the President of the Sicilian Region, also using ironic hashtags such as "#epicfail" and "#padaincubo" and then celebrating the victory with hashtags such as "#pressingragionato" and "#consapevolezzadati". The action was

a success in terms of results, above all in terms of visibility in national newspapers, *Il Fatto Quotidiano* and *Repubblica*.

Figure 4. ODS network in the tweetstorming action for SITR malfunction.



Source: personal elaboration twitter data

The yellow quadrant of the thematic map concerns the activity of internal collaboration and dialogue in ODS. We find recurrent words such as “ask” (weight, 150; centrality, 0.042), “share” (weight, 104; centrality, 0.034), “thanks” (weight, 217; centrality, 0.039), showing a basically collaborative model that does not exclude the strong role of some actors who exercise their charisma and their personal dedication to the function of leadership: this is the case of the use of certain names such as “Andrea” (weight, 206; centrality, 0.045), which is the name of two of the founders, as highlighted from the analysis of social media platforms, that mobilize much of the content within the movement. The use of the name “Giuseppe” (weight, 97; centrality, 0.033) refers to several activists who were the protagonists of recent initiatives that have achieved an ever stronger space of internal legitimacy. Also significant is the use of the words “Palermo” (weight, 213; centrality, 0.046) and “Catania” (weight, 125; centrality, 0.036) as

the more vital areas of interaction within ODS, but also as interpreters of a different sensibility about the future of the movement, its structure and organization.

Returning to the conceptual map (Figure 3), at the bottom on the right, the area in blue represents the external action of relationship and dialogue with local authorities, which is structured in particular through a very successful initiative called “!iovotopendata”. This action tried to promote the Open Data issue during the local elections held on 31 May, 2015 (with a runoff voting on June 2). The activists decide to send to all the candidates for mayor of the Sicilian municipalities a call to sign a commitment for data disclosure policies. More than 190 candidates were contacted, but only 18 candidates signed the commitment. Only four of these were elected. Although the political results have been poor, the action was a success from the point of view of the engagement of the candidates and making the issue better known at a political level. Therefore, this initiative was an interesting element for understanding the organizational model of action, between online and offline. The idea, developed informally by two activists and proposed in the mailing list, has rapidly progresses through the design of a logo, a press release and a dedicated platform on line; however, at the same time it has received the significant offline support of many local activists for searching the contacts of the candidates, or informing directly the aspiring mayors to join #IOVOTO-PENDATA initiative. The relevance of this action on local and national newspapers, such as the *Huffington Post*, have ensured the movement a relevant showcase stimulating the imitation of the initiative in other territories (such as Puglia and Basilicata).

Returning to Figure 3 on collaboration and dialogue with the public administration, we can find the occurrence of the word ‘create’ that concerns the sphere of products and services building an interchange of skills and resources between the movement and the public players. This co-productive dimension is clearly evident in some actions. One of the most relevant is that of “Albo POP”. This initiative transforms the “Albo Pretorio”, which traditionally publishes the most important decisions of a municipality, and that is almost unknown by citizens, in a system of push notification through Telegram (a kind of open version of WhatsApp). This idea received the interest of several Sicilian municipalities including Pedara, Leonforte and Bagheria. The initiative was also appreciated that it generated a process of imitation in Northern Italian municipalities such as Roncade, Bondeno, Cento and Bologna, thanks to the open production model that was adopted (based on Github platform, the release of the code in open format, including tutorials and operating manuals) exploiting the viral power of the internet.

A second example of co-production regards the Open Data UNOFFICIAL PORTAL of the Sicilian Region, which was realized in order to respond to the absence of an official regional portal as a single point of access to administrative data. The interesting di-

mension of this initiative is not only how this lack was compensated by the movement, but also how different actors (including public employees of some local administrations) are working to improve the quantity of dataset and the use of the portal. Also, in this case there was an interest from other regional areas such as Campania and Molise, regions without an official Open Data portal, that now want to replicate the ODS initiative.

These actions represent one of the elements of force of ODS and are constantly evolving: from the question of mapping the use of mafia confiscated assets in collaboration with Libera, the most relevant anti-mafia organization, to the collaboration with ARPA, the agency for environmental protection for the use and publication of open data on the quality of air, and AMAT, the company of Public Transport in Palermo

5. Concluding remarks

The study, despite its exploratory purposes, has highlighted some interesting elements that could be the basis for a future research agenda on this issue.

Specifically, the ODS case appears interesting for its evolution, its strategy and organizational structure: an elitist and technocratic movement that aspires to a broad constituency, varied and legitimizing, which looks ever more carefully, competently and reflectively to the communicative dimension of its actions. ODS is proposed as an expressive or a reformist movement, rather than an anti-system actor, with features that are similar to a lobby. The case study also shows all the typical characteristics of digital activism, highlighted by the recent literature (Walliser 2013; Della Porta 2013; Andretta et al. 2015), with its fluid boundaries between ethical inspiration of civic engagement and individual interests.

However, some unsolved problems emerge: once the data are 'free and reusable', who will really be able to read them and turn them into services for citizens? Then, will these services always be equally available and free? Could an Italian citizen, well below the average of computer literacy in the advanced countries, be an active user and an autonomous interpreter in an Open Data released world?

If the Open Data phenomenon is seen mostly as an opportunity for citizens, the features and the action models of ODS reveal how ambivalent the nature of this debate could be for its synergetic and coexistent aspects, that is, data disclosure and data reuse.

Some Anglo-Saxon scholars have already argued how in the case of the UK the issue of the data release is not politically neutral (Kitchin 2014), because most of the open

datasets were either mainly used in the consulting industry, or to justify the processes of liberalization and marketization of public services (Bates 2012); this is contrary to the idea of knowledge as a common good recurrent in the analysis on Open Data and E-Gov (Hess et al. 2009).

Certainly the movement has generated collaborative production practices as a tool to stimulate the public actor, but it is also creating new market opportunities through the extraction of value from public data. As already observed (Gurstein 2011; Shah 2013), if the issue arises regarding the emphasis on the empowerment of citizens, the relevance of data reuse empowers those who have no need for Open Data culture and they could be only interested in commercial exploitation of public information or in increasing their professional reputation. The relevance of similar interests of a community with a strong presence of engineers and practitioners interested in data release would give a “new verticality” to this phenomenon, creating some new asymmetries, despite a pattern of action intended as horizontal and equal.

Nonetheless, the local level seems of particular importance in the analysis of this contemporary movements, which were also affected by the most recent trends in terms of neoliberal regionalization and decentralization of policies and investments. Moreover, the offline space continues to be the real “arena” that is so relevant to determine the success and legitimacy of movements.

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