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To cite this article: Bella Palomo, Laura Teruel & Elena Blanco-Castilla (2019): Data Journalism Projects Based on User-Generated Content. How *La Nacion* Data Transforms Active Audience into Staff, *Digital Journalism*, DOI: [10.1080/21670811.2019.1626257](https://doi.org/10.1080/21670811.2019.1626257)

To link to this article: <https://doi.org/10.1080/21670811.2019.1626257>



Published online: 13 Jun 2019.



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Data Journalism Projects Based on User-Generated Content. How *La Nacion* Data Transforms Active Audience into Staff

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ABSTRACT

This article aims to contribute to the debate on audience participation in the media from three points of view: (1) demonstrating how data journalism enables an effective participation by the public in news production, (2) establishing a typology of the forms of contribution, and (3) performing an in-depth study of *La Nación* (Argentina), as an example of success in collaborative data projects carried out in Latin America. In order to achieve these objectives, firstly, all the Global Editors Network Data Journalism Awards were analysed with the purpose of detecting projects involving user-generated content. Secondly, *La Nación* was studied from an ethnographic perspective, as it is the medium with the most prizes in which citizen participation was detected. The results show that collaboration between media and audience can make large-scale journalism projects a reality, and also that citizens in Argentina are recruited by LN Data specially to boost political accountability.

KEYWORDS

Active audience; collaborative journalism; data journalism; open data; participation; reciprocal journalism; user-generated content

Introduction

In 2017, the Panama Papers won the Pulitzer Prize for Explanatory Reporting. This was awarded in recognition of the teamwork of more than 400 journalists from 107 media organizations in 80 countries who, coordinated by the International Consortium of Investigative Journalists, exposed the hidden infrastructure and global scale of offshore tax havens, analysing 11.5 million records and 2.6 terabytes of data (Sambrook 2016). They demonstrated that collaborative journalism in the professional sphere (Stonbely 2017) can carry out prestigious public interest global macro-projects with a greater impact than those that can be produced by a single journalist or organization.

Another landmark experience was Electionland, by ProPublica, which used networked journalism (Van Der Haak, Parks, and Castells 2012) to track and cover voting problems during the 2016 United States presidential election in real time. The new feature of this project was the professional collaboration of 250 news organizations, including content contributed by Journalism students and citizens, and accepting

posts in English, Spanish and Chinese. *The Washington Post* also had citizen support when it distributed cameras among refugees so that they could film their arrival on Lesbos.

In recent years in Latin America, important data journalism projects have been carried out that have required audience assistance in managing content in order to cover topics that journalists cannot do alone, in some cases because of the volume of data to be analysed and in others because of its scarcity. Thanks to the participation of victims and witnesses, a number of media organizations have revealed situations involving huge breaches of human rights not identified in official records. These examples form the basis for a Nieman Lab prediction for 2018: "Sharing is caring ... As an industry, and as individuals, we're realizing that we need to invest in organizational change, personal growth, and the human connections that will get us there" (Thomas 2017).

This context demonstrates that the academic approach to data journalism as a technique that allows effective interrelationships among journalists and audience is relevant. Nevertheless, debates on the topic focus more on interactive functions (Loosen, Reimer, and De Silva-Schmidt 2017), or the audience is perceived more as users rather than as creators (Boyles and Meyer 2016), thus avoiding consideration of how this collaboration is opening doors onto stories that would not have been published in other ways. This study offers something novel in that it considers a scenario that has received little attention: the development of crowdsourced data in Latin America.

Literature Review

Numerous studies reflect how over the last decade the media have developed a great dependence on active audiences (Bolin 2012) and social networks (Singer et al. 2011). Digital tools have the capacity to alter the traditional relationship between journalism and its audience (Loosen and Schmidt 2012), which requires a balance between professional control and open participation in the creation and circulation of media (Lewis 2012).

User-Generated Content and the Two Sides of Participation

This panorama represents a rupture with asymmetrical communication (Marchionni 2013) and an empowerment process that makes it possible to transform a suspicious and alienated audience (Pavlik 2001) from content readers into content producers. This approach is related to the UGC concept, in the sense of "content produced by 'citizen journalists' that closely resembles the output of 'traditional' journalists" (Nashmi et al. 2017), requiring a degree of personal contribution and creative effort (Naab and Sehl 2017).

This potential participation can be considered a remedy for the gap between journalism and citizens (Boczkowski and Mitchelstein 2013), as well as a formula for the greater democratization of the media (Parasie and Dagiral 2013), and it contributes to improving public trust in the media, especially in areas such as Latin America where this is declining (Rodríguez and Zechmeister 2018). This positive approach connects to

the concept of reciprocal journalism, which considers shared benefits for both journalists and the community (Lewis, Holton, and Coddington 2014) and is, therefore, a sign of “good participation” (Kligler-Vilenchick 2018).

However, in practice, only some media organizations have emerged from their comfort zones and made use of the communicative hyperactivity of audiences. Despite exceptional cases (Wardle and Williams 2010), most studies show that it is actually quite unusual to allow citizens to form part of the news production process (Domingo et al. 2008) and UGC is not a priority, as it is only being used in a limited way (Naab and Sehl 2017). Media companies have not transferred power to the recipients, and interaction with the audience is reduced to commenting on the information (Peters and Witschge 2014) or recommending content in order to make it viral (Jenkins, Ford, and Green 2012). Furthermore, some media are closing their comments sections, or installing fact-checking units to verify user-generated content. These restrictive attitudes could respond to a sceptical perspective on user engagement affected by a toxic atmosphere full of hateful messages, false contents, and strategic attempts at manipulation. Research focusing on this critical approach cannot be ignored, as it connects this “dark participation” with a large variety of participatory behaviours that are evil, malevolent, and destructive (Quandt 2018). Social media platforms like Facebook or Twitter have a great influence on this negative form of participation, as these external environments present security weaknesses as they fall outside media control and can involve risky changes of algorithm (Chua and Westlund 2019). This scenario has encouraged media like *La Nación*, *ProPublica* or *The Guardian*, to develop alternative solutions to improve audience engagement on their proprietary platforms (Westlund and Ekström 2018) and ensure communication that is more selective and free of intermediaries.

Similarities with Data Journalism

More recently, data journalism has raised positive expectations similar to those generated by early research on participatory journalism, namely, that its practice can: attract new users; increase web traffic and on-site time; build trust with regard to content generated or provided by users; provide transparency and credibility to media (Coddington 2015; Karlsson 2010); develop new narratives; and give items a longer life due to crowdsourcing, the interactivity of the infographics and customization of reading options (Vujnovic et al. 2010; Rosenstiel and Mitchell 2011). Data journalism departments, therefore, have a great responsibility, because their projects can increase the audience and prestige of the media organization concerned (Ojo and Heravi 2017).

The parallels found in the development of participatory journalism and data journalism are linked to the need of media organizations to reinvent themselves in order not to disappear (Bird 2009). Competition among media organizations has increased, and launching differentiated products based on data journalism can be favourable for reaching new users and enabling them to understand complex realities (Gray, Bounegru, and Chambers 2012) that are verifiable through replication (Bradshaw 2015), together with the supporting fact that an active audience increases the possibilities of experimentation based on new techniques and platforms.

The data collected with the aid of the general public are a reality applied by editors, although they are also aware of its weakness because “certain people in the audience can hijack crowdsourcing projects” (Appelgren and Nygren 2014). In this respect, some authors warn of certain dangers related to outdated journalistic control routines (Singer et al. 2011; Appelgren 2017).

The Challenges in Latin America

Saldaña and Mourão (2018) have identified barriers to watchdog journalism in Latin America including the lack of an investigative reporting culture, high levels of crime and corruption, the social institutions (censorship), or the structure and ownership of media organizations. Many organizations, such as the Inter American Press Association or Reporters without Borders, warn that journalists are discouraged from investigating because of the danger and impunity of the region. Despite the fact that this context hinders free speech, and that the region was late in adopting web 2.0 technologies (Said-Hung et al. 2014), digital developments have brought benefits to investigative journalism in Latin America. In recent years, most countries have passed transparency laws that guarantee access to official information, with the exception of Bolivia, Costa Rica, Cuba and Venezuela. The Global Right to Information Rating and UNESCO have positively evaluated progress made in this regard. This context, reinforced by the media’s demand for public information, has contributed to the development of data journalism in the region.

In this scenario, Argentina is an advanced country, but its current situation was reached through a slow transition to digitalization (Becerra, Marino, and Mastrini 2012). The influence of *La Nación* has been very important since it has become a major data journalism organization, winning thirty prizes. Its commitment to this tool dates back to 2010 when it received a leak that contained 26,000 Ministry of Transport email messages. Their analysis required the collaboration of journalists and IT experts, and that was the embryo of the data journalism unit (Mazotte 2017).

Studies that relate media production and data journalism in Latin America are mainly in the Spanish language and underline the enormous potential of this practice for developing local identities (Borges-Rey, Heravi, and Uskali 2018). In 2015, Perry and Paz coordinated a manual to introduce the state of the art of Iberoamerican data journalism. This is the first documentary record that, based on the case study method, collects testimonies on the particularities of style and form shown by this activity in the region. Forty-five authors from 16 countries participated in the project.

The development of participatory journalism and concern with users has generated greater interest among English-speaking academics, who have analysed how the media manage the social networking services (Said-Hung et al. 2014), reflecting a modest degree of interactivity (Bachmann and Harlow 2011) and a special interest in user preferences (Raimondo 2014). It is worth highlighting the study by Mellado and van Dalen (2017), which measures journalistic audience approaches in news content in Chile and proposes a three-dimensional model consisting of the civic, infotainment and service approaches.

Our research aims to demonstrate how data journalism enables effective audience participation in the process of news production. Our main objectives are to define patterns in audience collaboration based on data journalism and to detect what kind of benefits it brings to the information. In this regard, two questions are asked:

Q1 Is it possible to categorize audience participation in data journalism projects?

Q2 What motivates the media organization to favour the integration of citizens into the professional routine of a data journalism department like LN Data?

Methods

In order to achieve these objectives, a mixed-methods strategy was applied. Firstly, what we propose here is an up-to-date classification of audience participation adapted to data journalism projects, resulting from a descriptive, qualitative content analysis (Altheide and Schneider 2013). This model is designed based on all the possibilities established in previous studies and with the addition of distinguishing characteristics. Domingo et al. (2008) identified five levels of information production and studied the involvement of users at each of them. A decade after the creation of these categories, the development of interactive tools has increased the possibilities of audience participation in the news-making process. Peters and Witschge (2014) redefined the proposal, establishing three pillars and, within each, different degrees of intensity.

During this phase, we conducted a systematic examination of all Global Editors Network Data Journalism Awards—from their foundation in 2012 until 2018—to identify projects involving audience collaboration. This universe has been selected because these awards acknowledge journalistic quality according to an international consensus. Previous studies focused on the same referent (Ojo and Heravi 2017; Young, Hermida, and Fulda 2018) had also followed a pragmatic approach to analyse the technical characteristics of visualizations, the skills required by the journalists who create these stories, and the kinds of stories that are built up based on data.

In designing our sample (Table 1), the inclusion criteria were that audience participation appeared explicitly in the description provided by the journalists who entered themselves as candidates for the awards. A deductive directed approach was applied to this sample (Mayring 2004), made up of examples from Argentina, Colombia, Egypt, Peru, Philippines, United Kingdom, United States, Venezuela, and global projects with no geographical borders.

The classification proposed was applied to the audience contribution with the result that the main variables considered were related to the project production phases, the type of media, the citizens' expertise, the technical mediation, the topic and location. These variables in our codebook were developed inductively based on previous studies and explorative analysis of a subsample of 2018 nominees.

Secondly, an ethnographic study was undertaken. Among all the international award-winning media, *La Nación* is the one that has received more Data Journalism Awards—a total of six (Table 2)—and it is the only one with three awards for work based on citizen participation. For these reasons, this case study was selected.

Table 1. Sample: projects that have won a Data Journalism Award and which involve audience participation.

Argentina		
Year	Media/website	Project
2014	<i>La Nación</i>	Declaraciones Juradas abiertas (Open Sworn Statements)
2015	<i>La Nación</i>	VozData La Nación
2016	<i>La Nación</i>	La Nación Open Data
Colombia		
Year	Media/website	Project
2017	Rutas del conflicto	Rutas del conflicto (Routes of the Conflict)
Egypt		
Year	Media/website	Project
2018	Info Times	Info Times Team
Global		
Year	Media/website	Project
2014	Media Consortium	The Migrant Files
Peru		
Year	Media/website	Project
2015	Ojo Público	Cuentas Juradas (Sworn Statements)
2016	Excesos sin castigo	Excesos sin castigo (Unpunished Excesses)
Philippines		
Year	Media/website	Project
2018	Rappler	#SaferRoadsPH
UK		
Year	Media/website	Project
2012	BBC	Every Death on Every Road in Great Britain, 1999–2010
2013	BBC	Great British Class Calculator
USA		
Year	Media/website	Project
2017	ProPublica	Electionland
2017	<i>The Wall Street Journal</i>	Rap Hamilton
Venezuela		
Year	Media/website	Project
2018	Rurun.es, Caracas Mi Convive, El Universal	Monitor de Víctimas (Victim Monitor)

Table 2. Most awarded media in Data Journalism Awards (2013–2018).

Media	Awards
<i>La Nación</i>	6
ProPublica	4
BBC	3
Berlinger Morgenpost	3
FiveThirtyEight	3
<i>The Wall Street Journal</i>	3
Al Jazeera America	2
France TV/Wedodata	2
The Globe and Mail	2
<i>The New York Times</i>	2
Thomson Reuters	2

A wide range of studies has examined data journalism using content analysis techniques (Stalph 2018; Loosen, Reimer, and De Silva-Schmidt 2017; Young, Hermida, and Fulda 2018), while the internal opinion of the newsroom is more inaccessible. Alberto Cairo was a pioneer in combining both approaches. This data visualization expert completed his dissertation through a qualitative content analysis of Malofiej winners and visiting two hubs of innovation in data reporting: Univision News Online and the ProPublica News Applications team (Cairo 2017). Along these same lines, we implemented our hybrid procedure. This has given us more knowledge and provided a greater understanding of this activity in the natural setting in which it takes place,

with notes being collected on the journalism routines studied. The usefulness and benefits of this first-hand experience have been demonstrated by well-known academics who, thanks to its application, have examined the impact of the arrival of the internet on content creation (Paterson and Domingo 2008), media convergence (Huang and Heider 2007), and the deterioration of civic journalism (Nip 2008), among other matters.

In November 2017, we spent a week in *La Nación* newsroom in Buenos Aires to observe data journalists, data editors, the data visualization manager and supervisor and multimedia development routines. We were there every weekday from 9.30 a.m. to 6.30 p.m., and seven face-to-face in-depth semi-structured interviews were conducted and recorded to complement the observational research. The in-depth interviews give evidence regarding the nature of the phenomenon being studied, offering a perspective on the context and the origins from which it arises, as well as the internal viewpoints of those who have direct experience of the situation being analysed (Miller and Barry 2016, 51).

We attended all of the department's meetings and activities, without appreciating that our presence made any of the staff uncomfortable. With regard to the privacy of communications, correspondence was not consulted, and we only accessed those digital documents that the journalists interviewed provided to justify their oral statements. All the interviews were transcribed and uploaded together with the notes to the Atlas.ti application in order to categorize the content and enrich the qualitative results.

Unfortunately, during our stay, the organization did not carry out a project requiring audience support. This limitation was solved by applying visual ethnography (Gillárová, Tejkalová, and Láb 2014). Scenarios involving collaborative work with the public had been captured in video format and in photographs by the journalists, and they commented on these images obtained during the interviews.

Results

Classification of Audience Participation in Data Journalism Projects

Analysis of the data journalism projects selected for the sample enabled us to establish and validate a classification based on the role played by the audience. The proposed categorization is organized along three dimensions (Table 3). The first (project production phases) is the determinant one and deals with audience participation during the three stages of creating a project: pre-production, production and post-production. Crowdsourcing in the first two stages is crucial because without it the information could not be published. This engagement entails a desire or requirement, on behalf of the journalist, to involve the community in the construction of the storytelling process.

The second dimension studies the level of citizen expertise (high, medium, low) that the media organization demands from the citizen. In data journalism, the public can provide information as a source, on a scale of knowledge that goes from expert to simple witness to an event, or contribute with technical knowledge as civic technologists (Baack 2018).

Table 3. Dimensions of audience participation in data journalism projects.

Project Production Phases				
Pre-production	a. Proposal of subjects	b. Crowdfunding		
Production	a. Data contribution or collection	b. Data analysis	c. Short news writing	d. Audiovisual content
Post-production	a. Reprocessing news	b. Correction and expansion of data	c. Data reuse	d. Diffusion on social networks
Level of Citizen Expertise				
Low	Accidental or face-to-face knowledge of the data			
Medium	Personal knowledge			
High	Professional knowledge or educational training			
Technical Requirements for Transmitting the Data to the Medium				
No technical mediation	Personal interviews			
Basic technical mediation	a. Telephone	b. Email		
Advanced technical mediation	a. Interaction via social networks	b. Add content to a DB	c. Design a DB	d. Visualization design
	e. Blogs and wikis	f. Live streaming	g. Comments or review of news	

The third dimension to define audience engagement (technical requirements for transmitting the data to the medium) involves looking at the techniques used to communicate the data to the media organization.

A total of 74 Data Journalism Awards have been given since 2012. In this study, those categories that include portfolios were excluded. The sample is composed of 14 items in which crowdsourcing is observed during the pre-production and production stages. Audience participation in the dissemination and post-production stage was not included in this study, despite any influence, this might have had on the item's impact, because the virality obtained is not always linked to the quality of the content (Tandoc and Jenkins 2017).

The study's qualitative and current approach yields novel results. The data show that real collaboration between media and audience can make large-scale journalism projects a reality. Although the 14 award-winning projects based on user participation proceed from European, Asian, African and American media organizations, half of the sample was developed in Latin American countries. This finding reinforces the importance of this region for the research. In addition to the three Argentinean items published by *La Nación*, the others were created in Colombia, Peru and Venezuela by civic websites, small media organizations or social activists, and none by major newspapers (Table 4). The only award-winning projects carried out in Latin America by legacy media belong to the *La Nación* newspaper.

With regard to the production phase of the project, the most common finding is that citizens provide their personal data (contribution), notwithstanding the fact that *La Nación* reports from the public records (collection), or acts as media analysts. In these cases, the level of citizen expertise required was high for collecting or studying data.

According to the third dimension, a great disparity in the technical requirements for transmitting the data to the medium was detected in the sample. The most advanced collaborations were orchestrated from the Argentinean newspaper, where citizens added contents to the database. In contrast, no technical mediation was detected in Colombia or Venezuela, where crowdsourcing was done through personal interviews in morgues or family homes.

Table 4. Dimensions applied to Latin American projects that have won a Data Journalism Award, and which involve audience participation.

Evolution by country					
Argentina					
Year	Media/website	Project	Project production phases	Level of citizen expertise	Technical requirements
2014	<i>La Nación</i>	Declaraciones Juradas abiertas (Open Sworn Statements)	Data analysis	High	Advanced technical mediation
2015	<i>La Nación</i>	VozData La Nación	Data collection and Analysis	High	Advanced technical mediation
2016	<i>La Nación</i>	La Nación Open Data	Data collection and Analysis	High	Advanced technical mediation
Colombia					
Year	Media/website	Project	Project production phases	Level of citizen expertise	Technical requirements
2017	Rutas del conflicto	Rutas del conflicto (Routes of the Conflict)	Data contribution	Medium	No technical/ Basic technical
Peru					
Year	Media/website	Project	Project production phases	Level of citizen expertise	Technical requirements
2015	Ojo Público	Cuentas Juradas (Sworn Statements)	Data collection	Medium /High	Advanced technical mediation
2016	Excesos sin castigo	Excesos sin castigo (Unpunished Excesses)	Data collection	Medium /High	Basic technical/ Advanced technical
Venezuela					
Year	Media/website	Project	Project production phases	Level of citizen expertise	Technical requirements
2018	Rurun.es, Caracas Mi Convive, El Universal	Monitor de Víctimas (Victim Monitor)	Data contribution	Medium	No technical mediation

The importance of *La Nación* in the region can be seen in how one of its projects influenced similar initiatives in other countries. In Peru, the audience participated actively in the production stage of two award-winning projects. One of them, “Cuentas Juradas” (“Sworn Statements”), followed the example of “Declaraciones Juradas Abiertas” (“Open Sworn Statements”). The Argentinean case monitored the publicly available sworn statements of public sector workers with the aid of volunteers who codified the data. In the Peruvian case, the audience’s responsibility was limited to the post-production stage, where it only participated in correcting or expanding the information.

The outstanding characteristics and international recognition (Table 5) that the work of the *La Nación* data department has received since its creation justify the ethnographic study of its projects, enhanced with comments by their authors.

How LN Data Involves the Audience in Its Projects

A Department with Civic Motivations

La Nación is a large organization, founded in 1870, which has 333 staff journalists and a commitment to involve audiences in the pre-production and production of large-

Table 5. LN Data's awards (2013–2018).

Year	Prize	Category	Content
2018	Data Journalism Awards (GEN)	Breaking news	Submarino ARA San Juan: un video del recorrido de los barcos que buscan en la zona (Submarine ARA San Juan: a video of the route of the boats that are looking for in the area)
2017	Prize FOPEA & Google Argentina	Digital and journalistic innovation	Dos años de análisis de las escuchas de Nisman (Alberto Nisman Phone interceptions)
2017	Prize Konex	Digital entrepreneurship	
2017	SND	Portfolio: organization	Revelaciones y audios inéditos de la denuncia de Nisman contra Cristina Kirchner (Revelations and unpublished audios of the litigation of Nisman against Cristina Kirchner)
2017	SND	Features: single-subject project	Candichat
2017	SND	Graphics: breaking news	Submarino ARA San Juan: los 10 puntos clave, en una visualización (Submarine ARA San Juan: 10 key points in one display)
2017	SND	Graphics: breaking news	Detrás del discurso de Macri: chequeos y hallazgos (Macri's speech behind the scenes: checks and findings)
2017	SND	Graphics: features and planned coverage	Dónde ganaron y dónde perdieron votos las principales fuerzas políticas (Where main political forces won, where the lost)
2016	Data Journalism Awards (GEN)	Open data	Open Data Journalism for Change
2016	LATAM Digital Media Awards (WAN-IFRA)	Best data visualization	La lupa de los comicios (Elections magnifying glass)
2016	Adepa	Multimedia coverage	Elections Project
2016	Malofiej	Best of show	Cobertura de las elecciones de 2015 (Elections 2015 coverage)
2016	Malofiej	Breaking news	Coverage of the protest for the strange death of a prosecutor
2016	Malofiej	Breaking news	Nisman prosecutor: Murder or suicide?
2015	Data Journalism Awards	Data journalism website of the year	
2015	LATAM Digital Media Awards (WAN-IFRA)	Best data visualization	Congresoscopio
2015	Journalistic Excellence Awards (GDA)	Web animated graphics	Congresoscopio
2015	SND	Information graphics (planned coverage)	Comparativo de los discursos de asunción de Macri, Cristina y Néstor Kirchner (Comparison of the investiture speeches of Macri, Cristina and Néstor Kirchner)
2015	SND	Information graphics (planned coverage)	Cayó el caudal de votos de Pro en el 78% de las escuelas (Decrease in number of votes for Pro in 78% of poll stations)
2015	SND	Information graphics (planned coverage)	¿Cómo fue el resultado del ballottage en la escuela donde votaste? (Which was the result of the election in the poll station where you voted?)
2015	SND	Information graphics (planned coverage)	Elecciones 2015: la conformación del próximo Congreso en tiempo real (Elections 2015: the shaping of the next congress in real time)
2015	SND	Portfolio: organization	Elections 2015 coverage
2014	SND	Features (single-subject project)	The political maze 2015
2014	SND	Continuous use (section or topic)	Congresoscopio

(continued)

Table 5. Continued.

Year	Prize	Category	Content
2014	Data Journalism Awards	Best data journalism application or website	Open Statement Assets from Argentina's Main Public Officials
2014	Malofej	Breaking news	Inundaciones en la Plata (Floods in La Plata)
2014	Malofej	Features	Las fugas en Argentina (Capital flights in Argentina)
2014	Malofej	Features	Dolar blue
2013	Data Journalism Awards	Data journalism website or section	

scale projects run by the data department. La Nación Data (LN Data) was founded in 2011. Its members are defenders of experimentation, open data, civic journalism and a public-oriented model (Hermans and Drok 2018); they are mostly women. Momi Peralta, Multimedia Development Manager at *La Nación*, coordinates the department: "The fact that we are all women except for the programmers was not a condition, but pure chance; but it is true that women are more adaptive."

The data department is an innovative team with an international reputation, which creates original news items on a weekly basis that have a significant social repercussion. These items have an average of a 10-min visit time per user on the website. Using datasets they build from scratch and the content is then transformed, opened up and shared in print, online and on social media. Its projects are oriented towards politics and anti-corruption topics, although "we aim to extend our activity and success to other areas such as culture, fashion, or sports, implementing datatainment... convinced that data is the future," explains Flor Coelho, Multimedia Development Research and Training Manager.

The eight people working in LN Data form an interdisciplinary team of two developers, two programmers with experience in data mining, three journalists and an open-source evangelist lawyer, who holds the position of the training manager. All have digital skills and an open, positive attitude towards communications innovation. They are permanently connected, and the most-used applications are Tableau Public, OmniPage and Google Sheets. Gabriela Bouret, the database expert, also uses Excel for backups, Postgres and Microsoft SQL Server. The team's two programmers added Carto, Mapbox, D3.js, Python and Nitro to the list. Their choices are always geared towards a responsive design.

Despite the expansion of digital interactivity and the transparency websites, journalists are often obliged to demand information in person or to reconstruct it because the data are not public or has been published but cannot be imported. The LN Data journalists do not attend press conferences and only travel when they need to request documents that cannot be accessed online. Sometimes, they write content and update their blog in order to raise the profile of their projects, but their main functions are to compile data, which they aggregate, clean and analyse, and then use to create new stories. This has involved implementing new specialized routines, such as data scraping and report mining.

Romina Colman, Data Production Manager and Project Coordinator, is in charge of requesting less accessible public information, monitoring information published by

governments and coordinating projects in order to promote alliances among stories. These duties do not involve separate profiles:

Assistants and interns normally do what nobody else wants to do. At Data we try to avoid that situation. Here they analyse data, finish off the item to be published, they are taught how to work with csv files and Excel, and to improve their journalistic senses ... Young people can provide very original content.

In this context, *La Nación* contributes to open data (Lewis and Usher 2013) in Argentina. They demand public data and are prepared to upload thousands of pieces of data manually because they are convinced that the time invested will be worthwhile. Their projects involve using free and collaborative technological tools. As Flor Coelho says, “no project can be carried out by a single person,” and that is why they use the support of the community’s knowledge, creating a link of trust. Above all they have worked with a “serious workforce”: universities that teach Journalism, Engineering or Law, retired people, volunteers, NGOs and transparency organizations.

Participatory Practices

For LN Data, engagement does not only consist of listening to the audience, because collaboration is necessary. So, on 21 March 2014, they organized their first civic marathon. Following the recommendation of Transparency International regarding citizen monitoring of public spending in the service of accountability and in order to fight against corruption, volunteers released and published 4,800 verified public documents in real time via the Vozdata platform on Lanacion.com. These documents were related to Senate expenses between 2010 and 2012. This collaborative tool, inspired by ProPublica’s Free the Files and *The Guardian’s* crowdsourcing MPs’ Expenses, has 1,500 registered users and allows the transformation of complex public documents into a database aimed at citizens and journalists. As Momi Peralta says, “we do what nobody else does.” In this regard, they have not only implemented their Vozdata platform but have also open-sourced the code in Crowdata for others to reuse, in order to engage citizens and competitors in investigative reporting.

Vozdata has also allowed citizens to detect possible irregularities in the electoral telegrams created with the ballot results of the 2015 elections. *La Nación* required a massive call to investigate 90,000 pdf uploaded to Document Cloud. As results were decided by a reduced margin, the objective was to discover if telegrams had deletions or any alterations.

The Vozdata platform is so transparent that it lets people see who has contributed and which documents each person has analysed. These rankings promote competition. To participate in projects, no specific technical knowledge is necessary, you just have to enter the site and fill in a form with some mandatory fields referring to the document read. Although teamwork with the community is based on trust, the media organization sets strategies to verify the results they provide. As Flor Coelho states:

Citizen contributions are submitted to a three-fold verification before being passed into a consolidated database. Only if another two different users classify the same document in the same way in all mandatory fields are the audience’s indications accepted.

The Telegrams project was followed by the Sworn Statements project, which makes visible the assets of public workers in Argentina. In order to run it, NGOs selected six

volunteers to join LN Data. In the department, they were considered part of the staff for the year that collaboration lasted, and they were given a training manual and were even offered prior training.

Although most user contribution is undertaken without the expectation of remuneration, in the most recent *La Nación* projects participants were given a gift card worth 1500 Pesos, and in some cases, external contracts were created. Express recognition of the volunteer participation and their testimonies was also included in the news items of the newspaper, the digital edition, television programs, social networks and the *Nación Data* blog. As Coelho adds, “volunteers play a relevant role promoting and spreading projects.” For that reason when *La Nación* receives a prize from the GEN, the volunteers participate in the celebration; LN Data organize a brunch, and a picture of the volunteers making a toast is published in relation to this social event.

All the journalists interviewed emphasized that community service is their priority, and this viewpoint has been expressed in the creation of stories with social impact and a global reputation. Although each project represents a challenge, the most complex one—and the one they are most proud of—is the Nisman tapping story. Over two years, they analysed 40,345 telephone taps, 986 h of audio, aided by 120 volunteers with previous experience in the release of documents, and in doing so they reinvented the traditional form of covering court cases. Although almost all the work was done remotely, they organized four civic *audiothons*. “The audios were leaked and several media outlets published the whole database or some individual recordings. But we decided to combine technology and collaborative work, to take on the classification and analysis of every single audio” (Pallaro 2018). Finally, they published the 200 most important audios in an interactive audio digital story inspired by the playlists of Spotify. This project allowed the Prosecution to reopen the case. For Bianca Pallaro, this experience changed her life. She began as a volunteer—she was a journalism student at the time. The third time LN Data contacted her, they offered her a contract. Two years later, she is still working there.

In 2015 Hernán Capiello, Head of the Department of Communication Sciences and Journalism at the Universidad Católica Argentina, announced in the lecture hall the possibility of listening to and classifying audios. As volunteers we never had any contact with the newspaper; we received instructions by e-mail, even though we had had no previous training... It was a mechanical process that took me about 30 hours work. Later they selected me for the sworn statements, which was a more complex and intense process... I took 50 sworn statements home with me. In this case they gave us a handbook... They even gave us the option of working alongside the journalists in the newsroom... When you work as a volunteer you are constantly being asked whether you need something or whether you have any doubts; there was constant support.

Organizational Culture and Routines

A culture of innovation has also become established in the newsroom’s organizational and other routines, all of which are characterized by convergence. LN Data are located on the second floor of the newsroom, together with the magazines and supplements. The ordinary morning newsroom meetings at 10:30 a.m. are attended by around 20 *La Nación* journalists, one of them from the LN Data team. She announces the number of page views obtained with the items launched, the innovations they have

implemented, such as the case of 3D maps, and proposals for collaboration with other departments are considered in order to enrich their coverage.

LN Data also have set times for their own meetings. The 2:30 p.m. meetings on Mondays and Wednesdays are the longest, and these are attended by a newsroom manager in order to plan the projects underway. On other days, meetings are shorter but take place constantly, because they work on breaking news as well as on other longer-term projects. This intense face-to-face working relationship is combined with permanent virtual contact, given that they work cooperatively, sharing online spreadsheets. In general, members from the same department tend to sit together and talk during lunchtime in the canteen. The LN Data team is strongly activist, and takes advantage of everyday situations such as lunch or a *mate* break to do brainstorming sessions, debate potential stories, carry out daily post-mortem analyses to see what has worked and make progress with projects underway. The tyranny of the click (Nguyen 2017) is a constant concern during these conversations.

They frequently meet in person because they are seeking to create reusable content that enriches the experience of the user on the Web, on paper and on television. In order to achieve this, they work closely with the visualization and interactivity team. They are in charge of designing the best way to tell the story behind the data. They do not use external applications, and although there are no strict rules, they try to have a visualization or an interactive item published each day. They have created their own algorithm and say that the visualizations always work. However, in order to do this, they have to rationalize their efforts. Although the most successful news items are those that are presented in a familiar format that creates audience empathy through personalization of the content, this cannot always be done. As Pablo Loscri, Graphics Editor, says, “interactivity does not always add up. It requires an extra effort, and so we have to assess the need for it.”

With regard to financial information, we were not given access to this, since it was considered to be of a confidential and sensitive nature. However, we were told that while the data department had its own budget for new applications and projects, other departments did not.

Discussion and Conclusion

Data journalism is an emerging area of practice, and previous studies have detected a knowledge gap between the West and the Global South (Heravi 2018). Although Latin America is characterized by severe constraints on investigative reporting (Saldaña and Mourão 2018), data activism initiatives cannot be ignored (Chenou and Cepeda-Masmela 2019). With this contribution, we aim to stimulate research related to reciprocal journalism applied to unusual contexts where exceptional case studies can emerge, demonstrating that positive forms of participation between media and users are not outdated (Kligler-Vilenchick 2018). The implementation of secure proprietary platforms to formalize collaboration activities is a key point for achieving this success and it represents another strength of this investigation. As Westlund and Ekström (2018) underscore, the media are deemphasizing non-proprietary social media platforms and this trend requires more attention from scholars.

At a conceptual level, this article categorized audience collaboration in data journalism projects as follows. Three kinds of dimension were defined: the production phase in which collaboration occurs, the level of citizen expertise, and the technical requirements for transmitting the data to the medium.

The projects analysed should make us reflect about a reality that is not simple, and tackling it exclusively with low-cost journalistic solutions is irresponsible, given the social impact that the media has. The creation of data departments including programmer-journalists (Parasie and Dagiral 2013) can provide context and in-depth analysis in order to discover, with rigor, complex relationships and facts. The journalist's proximity to the audience can facilitate the achievement of these tasks. This perspective connects with the exploratory study of LN Data, offering a view from the inside, analysing its routines and talking to members of a team that defends the civic commitment of journalism. Previous research has also examined the adoption of UGC by mainstream news organizations applying in-depth interviews, discovering a traditional gate-keeping role towards participation (Hermida and Thurman 2008), enquiring into new ethical dilemmas (Singer and Ashman 2009), or developing renewed social responsibility because data journalism products are able to stimulate criticism (Boyles and Meyer 2016) and open government advocacy (Parasie and Dagiral 2013). This challenge connects with LN Data members, aware that the audience can contribute to democratization and the transparency of information (Schrock 2016) in Argentina monitoring the government and the public economy. The attributes of the social media (participation, openness, conversation, community, connectivity) have been integrated in a proprietary platform by a department that is committed to prosumers and social capital (Bourdieu 1986). *La Nación* has managed to make technology use serve a cause, and they consider that impact and real change can be affected through cooperation. In its case, asking for help is not a weakness, but a strength. LN Data develops tools that empower users (Batsell 2015), assigning them a watchdog role (Loosen, Reimer, and De Silva-Schmidt 2017) because it is convinced that "good citizens" (Kligler-Vilenchick 2017) can have new, active functions that can help the media improve their product, reduce disinformation and even increase their credibility. And sometimes they recognize the effort of the volunteers by integrating them in the newsroom.

Although they aim to extend its activity to datatainment, nowadays they focus on politics. Citizen collaboration is transformed into a mechanism for involving users in the accountability of public affairs even though this could involve a blended responsibility in such gigantic journalism projects (Aitamurto 2016).

The concern regarding disinformation in today's society has meant that many important, endless news stories, fed by constantly updated databases, are published. This is an analytical perspective on current affairs, in which the method applied to obtain the information is more important than the speed of publication (Herman 2015). Sharing these data and citizen participation can promote a situation whereby journalism becomes a useful exercise in transparency since the active audience is key when it comes to introducing new topics into the agenda-setting process but also in order to analyse a large volume of documents, as has been seen in Argentinean projects. The way citizens consume journalism is being reinvented, and this hybrid

audience (Mellado and van Dalen 2017) favours diverse news, both useful and plural, in the era of algorithms.

The digital environment makes for constant challenges in the sphere of communication and is causing drastic changes in media organizations. Focusing on new narratives, interdisciplinary teamwork, and being more responsive to the audience (Tandoc and Wen Foo 2018, 53) have been the industry's main responses in recent years. Ethnography is vital for the analysis of situations that are so dynamic (Ilan 2015) since it contributes to making advances in research thanks to the discovery of new realities that consider new kinds of questioning and the formulation of new theoretical models. In this regard, the main limitation of the present study is that it only explores the case of a single Argentinean newspaper, and other studies could complement it with the analysis of data journalism departments in other countries that also ask for citizen contributions in order to carry out journalistic projects, with the goal of ascertaining whether these routines fit into a pattern, whether they are widespread and global. Furthermore, carrying out focus groups with readers and contributors to these projects would further an understanding of motivation, as well as the citizen support that other data macro-projects might receive in the future, and make it possible to see whether the recognition that such content obtains within the professional field is perceived and replicated by audiences.

Acknowledgements

B.P. wishes to thank the whole La Nación Data team, and particularly Flor Coelho, for their help during the visit, and for facilitating the interviews at the Buenos Aires office.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

This research is supported by the national research project "The influence of the audience on journalistic innovation: risks and opportunities" (CSO2015-64955-C4-3-R MINECO/FEDER).

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