



# Deliverable 7.3

## Focus Report On Innovative Digital Formats Version 1.4

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## REVISION HISTORY

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| v1.0     | 24.02.22 | Marco Boscolo                                  | First draft - definition of case studies             |
| v1.1     | 11.03.22 | Elisabetta Tola, Marco Boscolo                 | Survey circulated, starting interviews with experts  |
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| v1.3     | 30.03.22 | Formicablu team                                | Revisions, corrections                               |
| v1.4     | 31.03.22 | Giulia Bonelli, Marco Boscolo, Elisabetta Tola | Final version, upload                                |

## QUALITY ASSURANCE

To ensure the quality and correctness of this deliverable, we arranged an internal review and validation process. The deliverable was drafted by the work package leader (Marco Boscolo, formicablu). All partners contributed and reviewed the overall draft. Before submission, the formicablu team made a final review and validation.

### STATEMENT OF ORIGINALITY AND DISCLAIMER

This deliverable contains original, unpublished work except where clearly indicated otherwise. It builds upon the experience of the team and related work published on this topic. Acknowledgement of previously published material and others' work has been made through appropriate citation, quotation, or both.

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# 1. SUMMARY

As the ENJOI project was moving its first steps, at the beginning of 2021, the whole world was entering the second year of the Covid-19 pandemic. We all were waiting for solutions, mitigations, and other measures to counteract the deadly SARS-CoV-2 virus that has brought unprecedented distress to all countries.

All around the world, media outlets were packed with infographics and data visualisations. **Many more journalists than ever before were reporting on the pandemic data.** At the same time, more and more people in general, both with and without any real expertise, were commenting on topics like how to "flatten the curve", debating on the quality of the data collected and disseminated by the health authorities and so on. Data visualizations, as well as visual contents, interactive dashboard and other digital native products, were consumed by people in huge amount, and even legacy media knew a moment of renewed popularity. Particularly during the lockdown experienced in many countries, people turned to the media more than before to understand what was going on.

Today, while we are writing this report, the situation is different again. We have become more used to live with the SARS-CoV-2 virus, after two very difficult years. The climate crisis, probably the worst and most serious crisis and collective threat that humanity had to face in its entire history, has finally come back on the media and the public agenda. And then the war in Ukraine was started. **We are at the intersection of three major crises.** And it has become clearer than in the past two decades that we not only need information, reliable and trustworthy, but that the **information plays a key role** in the way we deal with these crises and even in the solutions we decide to adopt.

As ENJOI is now entering its second year of activity, we are examining in depth not only **how people interact with science through the media** and the communication platforms, but also **how the news and information producers**, and mainly the ones involved in covering topics that see science as a main backbone, **are trying to find ways to respond to those information needs.** How they are going by looking for new type of formats as well as new approaches to their audiences. And whether they are on the right path to do so. This report is one of many that will help us **building a multifaceted photography** of the state of the art of innovation in science journalism and communication.



## 2. PROJECT OVERVIEW

ENJOI (ENgagement and JOurnalism Innovation for Outstanding Open Science Communication) is exploring and testing **engagement** as a key asset of innovation in science communication distributed via media platforms, with a strong focus on journalism.

Through a combination of methodologies and in collaboration with producers, target users and stakeholders of science communication, ENJOI is co-creating and selecting a set of **standards, principles** and **indicators** (SPIs) condensed to a **Manifesto for an Outstanding Open Science Communication (OOSC)**.

A first selection of the SPIs has been made public on the [ENJOI website](#). This initial list was produced after a thorough review of existing academic literature, including books, grey literature, and a number of interviews with experts in different communication fields. The inception report on SPIs is the main content of D2.1. ENJOI is then deploying a series of actions via **Engagement Workshops, Labs, field** and **participatory research, evaluation** and **testing** phases to co-design the final list of SPIs and condense them in a Manifesto.

ENJOI is building the **OOSC Observatory**, its landmark product to make all results and outputs available to foster capacity building and collaboration of all actors in the field. The project is based in four countries: Belgium, Italy, Portugal and Spain, taking into account different cultural contexts, with a strong focus on the Mediterranean region and its features, challenges and specificities when it comes to science communication and journalism.

ENJOI's ultimate goal is to **improve science communication** by making it more consistently reliable, truthful, open and engaging. Contextually, ENJOI will contribute to the **active development of critical thinking, digital awareness and media literacy** of all actors involved in the process.



### 3. METHODOLOGY AND RATIONALE

The ENJOI project bases its activities on a **participatory methodology**, involving a variety of science information producers, users and stakeholders to assess high quality in science communication and journalism.

All the partners are setting up a **multi-step iterative approach** to research, co-create and produce SPIs together with recommendations and guidelines that will be condensed into the ENJOI Manifesto.

As a first step, this participatory and iterative approach was implemented within the ENJOI consortium itself to perform the first research task and deliverable 7.1 on engagement in journalism and task 7.2 on data journalism.

A similar approach was undertaken for this task and this report on audience evaluation of **innovative formats** in terms of usability, level of information, efficacy on science communication.

An **in-depth audience survey** was constructed by selecting 12 examples of innovative journalism formats, mostly in English but also including at least one example per local language of the 4 countries involved. The list of examples is available in *Table 1*. The criteria for the selection were harmonized with the criteria utilized in the *Analysis report on the use of data and open science results* (D7.1) and in the *Digital Engagement Focus Report* (D7.2) to assure consistency in the analysis process. The survey was developed as a **qualitative** questionnaire, asking participants to evaluate the 12 selected examples and provide a quite detailed analysis. The survey was circulated via the partners in the 4 countries (Italy, Portugal, Spain and Belgium), and collected 13 answers (for a detailed analysis of the results, see Section 6 in this document).

The results of the survey have been the basis on which having a conversation with **4 innovation experts** interviewed through Zoom/Meet calls. We are convinced that this very special time has had a strong influence to the way the media industry and the media studies are looking at the role of innovation in communication and the role, challenges, potential and effectiveness of media work during such an unprecedented event. The interviewed experts share some considerations on the value of engagement and connection with the community of readers, listeners, publics and the need to reflect, reinforce and sometime rebuild the common ground with the audiences to make sure that they are responding to their information needs.

The authors of this report strongly feel that this type of evaluations, rarely made



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before the pandemics when the focus was always more on tech innovation and the need to produce more and diversify the market, has been ignited by the very particular situation created by the pandemic. The **renewed central space played by the media**, both legacy and digital native ones, as well as **the scale of the misinformation dynamics** and the risks associated with it have raised the attention towards **the need for a very well crafted, reliable, truthful science journalism**. There has never been a time before when science journalism and science communication have been so strongly called **to be responsible and to support the collective effort** to fight against the deleterious impacts of the epidemics on society.

Therefore, the scope of this deliverable has been broadened. Not only focused on describing and analysing innovative formats in journalism, with a particular focus on science, but we went further trying to see how innovation as a frame of mind, as an attitude to do better research and better communication, can contribute to a stronger and more useful communication effort. The results of this work, combined with the other WP7 focus reports, will factually contribute to the scope of the **ENJOI Observatory** and its potential as a platform eliciting collaboration, research, experimentation as well as training and capacity building for a science journalism done for the public good and interest.



## 4. ANALYSIS OF CASE STUDIES AS EXAMPLES OF INNOVATIVE FORMATS IN (SCIENCE) JOURNALISM

Table 1: List of 12 examples

|   | Title   | Media  | Country                    | Innovation  |
|---|---|--|----------------------------|---|
| 1 | Built on sand                                     | 99 Percent Invisible                             | USA                        | Indie-podcasting, syndication of podcasts   |
| 2 | The dispatch series                               | Radiolab   | USA                        | Sound design as part of the narration   |
| 3 | The air monitoring with sensors                   | Sensor Africa                                    | Kenya                      | self-made sensors used as source of data; collaboration between citizen scientists, journalists and coders/tech activists |
| 4 | In my nature                                      | Are We Europe                                    | Europe/<br>International   | blending of comics, graphics and journalism in an arty, non-linear narrative  |
| 5 | Land of plenty, land of but a few                 | Divergente                                       | Portugal/<br>International | cross mediality, use of hyperlinks and document sharing, choices during the fruition                                      |
| 6 | Diseas X  | Drawing The Times                                | The Netherlands            | use of comics for journalism  |
| 7 | #MineAlert  | Oxpeckers Investigative Environmental Journalism | South Africa               | networking, reporting from volunteers, engagement with community  |
| 8 | The Energy Charter Treaty                         | Investigative Europe                             | Europe/<br>International   | cross national, motion graphics   |
| 9 | How will we deal with all of the world's rubbish? | BBC Future                                       | BBC                        | short videos expressly designed for social media sharing  |



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|    |  |             |                       |  |
|----|--|-------------|-----------------------|--|
| 10 | Quanto mais estou a pagar por combustíveis? Onde estão os postos mais baratos? | Publico.pt  | Portugal              |  |
| 11 | La grande onda   | Independent | Italy / International |  |
| 12 | El estronismo climático que no nos deja respirar                               | El Surtidor | Paraguay              |  |

## 4.1 Built on sand

**Authors:** Roman Mars (99 Percent Invisible staff)

**Keywords:** environment, natural resources, design and architecture

**Media Outlet:** 99 Percent Invisible podcast

**Country and language:** USA, English

**Date of publication:** 7th September 2019

**Link:** <https://99percentinvisible.org/episode/built-on-sand/>

**Innovation:** indie-podcasting, syndication of podcasts

### Description

*99 percent invisible* is a podcast show created in 2010 as an independent project by radio host Roman Mars. The podcast is a weekly show based on great quality of sound design and a great attention to narrative structure of each episode. The series began when podcasting was a relatively little known media, especially if compared to the success it has today. *99 percent invisible* started mainly telling stories on design of everyday life with an approach to deep research and on-location reporting that blended together the depth of feature journalism with the narrative opportunities given by the audio format. Since then, the show has expanded, made itself sustainable and profitable, and Roman Mars was one of the founders of [Radiotopia](#), the first modern syndication of independent podcasts in English (the shows are mainly US-based, but not-exclusively). The show has since left Radiotopia, but Mars was a key figure in letting new podcast shows, with attention to sound design and high narrative quality, blossom. Here we chose just one episode where all the qualities of the show are on display and where the chosen theme is related to science at large.



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## 4.2 The dispatch series

**Authors:** Radiolab staff producers and reportes

**Keywords:** numbers, data, Covid-19, pandemic

**Media Outlet:** Radiolab

**Country and language:** USA, English

**Date of publication:** 27th March 2020 - 29th May 2020 (6 episodes special series)

**Link:** <https://www.wnycstudios.org/podcasts/radiolab/articles/dispatch-numbers>

**Innovation:** sound design as part of the narration

### Description

*Radiolab* is a podcast series by the WYNC Studios, a public radio station in New York City. It was founded in 2002 by Jad Abumrad and Robert Krulwich, but since then both the two have left the show. The show always focuses on the relationship between science, society and politics, but what was - and to a certain extent still is - innovative is the use of sound and sound design as an integral part of the narrative structure of the episodes. Without the limitations and conventions of traditional radio shows, Abumrad and Krulwich were left free of disrupting the use of tapes and music in the show. For example, there is almost no classical question and answer as in traditional interviews, but the tapes are rather used as part of a narrative structure that give to the listeners a more concrete sense of place or of atmosphere when listening to a story. Another innovative audio feature of the show is the extensive use of sounds from the field and the use of original music. All of these lead to an innovative editing style, with a large quantity of different audio sources blended together in a unique style. All these innovations are not just technical, but rather used as means to get to the listeners through more channels than just the content. This led to one of the most imitated podcast shows ever.

The *Dispatch series* is a special six episode series produced by the show's staff during the pandemic in 2020. Not able to report from the field due to the lockdown and the consequent limitations in traveling, the producers of the show looked for another way of creating something in the style of the show, but using just a poorer set of journalistic and narrative tools. Anyway, the *Dispatch series* focused on less reported aspects of the pandemic, such as psychological effects of the lockdown, wellbeing of people bombarded with dramatic news and so on, that complemented the more traditional journalistic coverage of the period. The series, in particular, offered an in-depth analysis of the meaning of the huge quantity of data and



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numbers that were accessible during the peak of the pandemic in the US. For this, the show used its credibility built during the previous 20 years.

### 4.3 The air monitoring with sensors

**Authors:** sensors.AFRICA citizen journalists and citizen scientists

**Keywords:** air quality, pollution, environmental data

**Media Outlet:** own website and various outlets

**Country and language:** Kenya, English

**Date of publication:** January - April 2019

**Link:** <https://sensors.africa/air>

**Innovation:** self-made sensors used as source of data; collaboration between citizen scientists, journalists and coders/tech activists.

#### Description

In a context where data on air pollution and air quality is generally unavailable, the project put together journalists, activists and members of the civil society to gather their own data on the matter. The project is backed by Code for Africa, an organization of “civic technology and data journalism labs, with teams in 20 countries”. The air monitoring project is part of a larger initiative that gathered data also on water, sound and radiation.

The project shows the great potential of journalistic and technological innovation in a context often overlooked by experts in journalism and its practices. It is also innovative in its own terms, bringing together an already existing community of practitioners - the Code for Africa Labs - with local journalists in highlighting the lack of information on these health-related issues. At the same time, its development is largely based on the engagement of local communities through the local media outlets where the stories have been published.

The stories were possible only thanks to a joint effort of people with different backgrounds and experiences: tech enthusiasts able to work with chip sensors and data gathering, and journalists and their reporting ability.

### 4.4 In my nature

**Authors:** Marcelina Kieskiewicz Dvorak, Jarek Oleszczynski and Toon Vos

**Keywords:** environmental, climate crisis, transhumanism

**Media Outlet:** Are We Europe

**Country and language:** Europe, English



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**Date of publication:** 2021

**Link:** <https://www.inmynature.areweeurope.com/>

**Innovation:** blending of comics, graphics and journalism in an arty, non-linear narrative.

### **Description**

*In My Nature* is a multimedia project that can be accessed through a scrollytell-like online environment. As a user you are asked to follow one of the three “cyborg-guides” on a hike around Barcelona: one has tectonic sensors in her feet, one a color-sensing antenna and one weather fins. The idea is to use these fictitious characters to guide the reader through a variety of stimuli on nature and environment. The project fuses texts, photos, videos, comics and drawings in an arty object.

The story presents several crossroads, where the reader can choose the sequence of the narration and take advantage of some paratextual objects (a map and a glossary) to delve deeper into the themes. This results in an interactive and engaging storytelling experience, rather different from the traditional journalistic style.

## **4.5 Land of plenty, land of but a few**

**Authors:** Boaventura Monjane, Sofia da Palma Rodrigues, Diogo Cardoso, Sofia da Palma Rodrigues, Emma Lesuis, Ana Grave, Marian Pedrosa, Paulo Nuno Vicente, Inês Marques, Francisco Costa, Luciana Maruta, Sara Capelo, Boaventura Monjane, Luciana Maruta, Cristina Pinheiro, Felicity Pearce, Sandra Young

**Keywords:** access to land, poverty, agriculture, forestry

**Media Outlet:** Divergente

**Country and language:** Portugal, Portuguese and English

**Date of publication:** 2018

**Link:** <https://terradealguns.divergente.pt/>

**Innovation:** cross mediality, use of hyperlinks and document sharing, choices during the fruition

### **Description**

In 2017 a team of journalists and videomakers from Portuguese media outlet Divergente went to Mozambique to shoot some video interviews for a project. Instead they found themselves inside a story on a difficult relationship among small villages’ peasants, the government and a few large international companies that



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operated in the country. In particular, with the support of the government, they took control of villages' land and they were supposed to compensate the local farmers. But the compensation didn't arrive as expected. The result was a large number of dispossessed families, condemned to a poorer life than before the companies arrival.

*Land of plenty, land of but a few* is a cross media web documentary that uses videos, photos, drawings and texts to narrate a complex story. The story is organized in four chapters that can be navigated as pleased by the user, with also a certain degree of freedom: some contents can be skipped, in other cases the user is asked to choose the next content. While reading the main text that serves as a skeleton for the user's experience, a few icons can appear on the margin of the page, indicating that extra content on the subject is available. It could be a direct link to a specific document (for example, the text of a law) or a dedicated video or else. This use of extra materials, not relegated to the end of the web documentary or in a dedicated page, allows the user to choose the degree of information they are interested in.

## 4.6 Disease X

**Authors:** Merel Barends

**Keywords:** comics, virus, Covid-19, pandemic

**Media Outlet:** Drawing The Times

**Country and language:** The Netherlands, English

**Date of publication:** June 2020

**Link:** <https://drawingthetimes.com/story/disease-x/>

**Innovation:** use of comics for journalism

### Description

*Drawing The Times* is an example of the wave of websites and other more traditional media outlets that use comics as a tool to produce journalistic stories. Though being an online outlet, *Drawing The Times* is organized like a printed magazine in periodical issues that often revolve around a specific topic. In the case of *Disease X*, the Dutch comics writer and illustrator Merel Barends was working on a story about a hypothetical pandemic when Covid-19 arrived in Europe, altering the story he was working on and the lives of millions of people. The story by Barends is a great example of how the comics' language could be of assistance to talking about a complex scientific subject like a viral infection. Comics can be easily adapted for containing charts, invisible little things (like a virus) and abstract concepts (like, for example, trying to reply to the question "what is an organism?").



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## 4.7 #MineAlert

**Authors:** Oxpeckers Investigative Environmental Journalism staff

**Keywords:**

**Media Outlet:** Oxpeckers Investigative Environmental Journalism

**Country and language:** South Africa, English

**Date of publication:** ongoing investigation series

**Link:** <https://oxpeckers.org/minealert/>

**Innovation:** networking, reporting from volunteers, engagement with community

### Description

#MineAlert is a project of Oxpeckers Investigative Environmental Journalism that allows users to track environmental impact assessments. This is the last of a series of Alert projects and it is focused on the mapping of mining licenses in South Africa and their environmental impacts. The main outcome of the process is a national map where all details of mining licenses can be navigated. For each node on the map, users can read information about the type of license, what company is operating and the kind of commodity they are extracting. On top of that data-collection through inputs from the readers and a large community of activists from all over South Africa, the journalists from Oxpeckers built a series of more traditional investigations that has been published on the organization's website as well as on various different media outlets.

The project is a response to the general opacity of South Africa's government about natural resources exploitation and has received support from Open Science Foundation For South Africa, as well as technical and communicative support from Code For Africa, an organization devoted to data and tech education and activism in the continent, and Science Link, a science communication and communication training agency based in South Africa.

## 4.8 The Energy Charter Treaty

**Authors:** Alexia Barakou, Aris Athanasopoulos, Pavlos Zafiroopoulos, Reporters United (Athens, Greece)

**Keywords:**

**Media Outlet:** Investigative Europe

**Country and language:** International, English



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**Date of publication:** 22 February 2021

**Link:**

[https://www.youtube.com/watch?v=3ViVjWigK2I&t=97s&ab\\_channel=InvestigateEurope](https://www.youtube.com/watch?v=3ViVjWigK2I&t=97s&ab_channel=InvestigateEurope)

<https://www.investigate-europe.eu/en/2021/ect/>

**Innovation:** cross national, motion graphics

### **Description**

*The Energy Charter Treaty* is an investigative series by a cross national group of journalists from Europe that goes under the collective name of Investigative Europe. The team usually works with official documents from the European Union to uncover the wrongdoings and opaque corners of European politics and economics (see also the ENJOI *Analysis report on the use of data and open science results*). For this investigation they looked into the Energy Charter Treaty, a little-known investment protection treaty that allows foreign investors to claim billions in compensation from the signatory states before international arbitration tribunals if the companies feel treated unfairly by the states energy or climate policies. Among the problems coming from this procedure, this treaty could get in the way of Europe's climate goals in the near future.

The investigation comprises a series of more classical pieces published both on the organization's website and on several media outlets in different countries. But for this work, the team also created a short video in motion graphic as a general summary of the investigation. This takes advantage of a sophisticated animation technique and it also serves as an autonomous short video that can be shared as an introduction to the series of articles but also as a stand-alone piece of information.

## **4.9 How will we deal with all of the world's rubbish?**

**Authors:** Bryan Lufkin, George Mason

**Keywords:** Rubbish, recycling

**Media Outlet:** BBC Future

**Country and language:** UK, English

**Date of publication:** 3rd October 2017

**Link:**

<https://www.bbc.com/future/article/20171003-how-will-we-deal-all-of-the-worlds-rubbish>



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**Innovation:** short videos expressly designed for social media sharing, solution journalism approach

### Description

*How will we deal with all of the world's rubbish?* covers the issue of rubbish and recycling from an original perspective, using a solution journalism approach. It is part of the BBC Future's special series *Grand Ideas*. The series claim reads: "The 21st Century is continually throwing us new challenges and expecting us to adapt - but for every Earth-shattering megatrend, there are dozens of genius solutions".

So, rubbish is looked from this "genius solutions" angle. In this particular case, 4 solutions are presented through a very effective 2-minutes animation, showing how grand ideas help deal with the problem of rubbish in different part of the world. For example, in the Indian State of Tamil Nadu, the local government has turned 1,600 tonnes of plastic rubbish into pavement for 1,000 km of public roads.

The short videos is expressly designed for social media sharing: it has catchy animations, a simple but effective speech, subtitles, and a great sound design. These aspects, combined with the solution journalism approach, make this product an innovative example of digital format.

### 4.10 Quanto mais estou a pagar por combustíveis? Onde estão os postos mais baratos?

**Authors:** Rui Barros and Cátia Mendonça

**Keywords:** Fuel, petrol, simulator

**Media Outlet:** Publico.pt

**Country and language:** Portugal, Portuguese

**Date of publication:** 15th March 2020

**Link:**

<https://www.publico.pt/interactivo/quanto-estou-pagar-por-combustiveis-onde-estao-postos-mais-baratos>

**Innovation:** cross mediality, interactivity, choices during the fruition, high level of audience engagement

### Description

*Quanto mais estou a pagar por combustíveis? Onde estão os postos mais baratos?* ("How much more am I paying for fuel? Where are the cheapest petrol stations?") is a cross-media project developed by the Portuguese daily national newspaper



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Público. Its main goal is engaging the audience around a crucial aspect for our everyday life: the price of petrol. To do that, it uses a simulator taking into account three variables: the consumption of cars, the distance travelled and the price per liter of fuel.

The fuel prices are based on the values reported by the petrol stations to the Directorate-General for Energy and Geology (DGEG) and available on the website [Preço dos Combustíveis Online](#).

As a first step, the user is asked to select the kind of fuel he or she is using (the choice is between petrol and diesel at the moment), the type of car, and the numbers of kilometers per month. This generates an estimate of the user's fuel expense, with a focus on price rises.

For example, for a small petrol car travelling around kilometers per month, the increase in fuel price is estimated around 3 euros more per month.

The user can then select his/her borough, and find the cheapest petrol stations in the area. Interactive graphs show both the price rise over time and the comparison among different fuel stations.

The main innovative aspect of the project is using an online simulator as part of the journalistic reporting. Starting from their own everyday experience, users are engaged and probably keen to further explore the topic through the other articles and investigation offered by Público.

## 4.11 La grande onda

**Authors:** Davide Mancino

**Keywords:** Covid-19, pandemic, economics, social crisis

**Media Outlet:** Independent

**Country and language:** Italy, Italian and English

**Date of publication:** 2021

**Link:** [www.grandeonda.it/en](http://www.grandeonda.it/en)

### Description

*La grande onda* ('The Great Wave') is a chronicle and a data-based reconstruction of the 2020 Covid-19 pandemic in Italy, the first country that registered cases and deaths in Europe at the end of February 2020. The five-chapter scrolly tell long-form starts from the first cases registered in Northern Italy in Val Seriana, a busy and densely populated area near Bergamo, Lombardy. Local administrators and journalists (see the Covid-19 related section of this report) started to grasp the dimension of the event only when they looked at the excess mortality, i. e. comparing the number of deceased people in a particular month in 2020 with the average for



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the previous years. From this scenario, set thanks to infographics and data visualization, La Grande Onda tackles the first year of the pandemic in Italy from different angles: the long term effects on health in the survivors, the mental health consequences, the subsequent economic and social crisis, the scientific analysis of the effects of the pandemic for different countries and what science learnt on how the SARS-CoV-2 spread from person to person. These themes are treated in a data-based manner, sourcing a great variety of data from mostly open access sources.

## 4.12 El estronismo climático que no nos deja respirar

**Authors:** Maximiliano Manzoni, Lis García, Guillermo Achucarro

**Keywords:** Climate change, Politics, History

**Media Outlet:** El Surtidor

**Country and language:** Paraguay, Spanish

**Date of publication:** 3rd February 2021

**Link:** <https://elsurti.com/futuros/culpables/especial/estronismo-climatico/>

**Innovation:** scrolly tell with original illustrations on public domain data

### **Description:**

El estronismo climático que no nos deja respirar is a special data investigation in the form of scrolly tell. The word "estronismo" refers to Alfredo Stroessner, the Paraguayan army officer that took the power of the country with a coup in 1954 and served as President of Paraguay from 15 August 1954 to 3 February 1989. El "estronismo climático" is the concept elaborated by the three authors of the investigation after they analyzed the relationship between dictatorial policies and the validity of the production model that led the country to be one of the countries with the highest Greenhouse Gas (GHG) emissions per inhabitant in the region. The investigation points out that the economic policies of estronismo shaped the deepening of Paraguay's extensive land estate structure, placing Paraguay as a supplier of raw materials for foreign capital, particularly Brazilian. "We cannot talk about the increase of Paraguay's emissions without considering the state terrorism since 1954 – disappearances, kidnappings, torture and murders – as a method to silence those who opposed the model that fuels these broadcasts", conclude the authors.

So the story investigates the relationship between policy choices and the consequences of climate change in today's Paraguay using an interactive temporal line, where the rise of the GHG is directly related to facts from Paraguayan history.



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## 5. SURVEY: THE RESULTS

The Survey “[Innovative digital formats in journalism](#)” was developed in order to collect a qualitative evaluation of the 12 selected examples of innovative journalism formats (See Section 5). The survey was circulated via the ENJOI partners in the 4 countries (Italy, Portugal, Spain and Belgium), and collected 13 answers.

The main target of the Survey included journalists, communicators, and researchers. It asked their opinion as information consumers rather than producers.

It was structured as a **qualitative survey**, and required a **high level of commitment** to be completed. However, the collected answers were very useful to evaluate how innovative formats in journalism are perceived, and how innovation itself is defined.

The Survey included the following questions.

1. Among the examples listed above, which ones did you already know?
  - Built on sand
  - The Dispatch Series
  - In my nature
  - Land of plenty, land of but a few
  - Disease X
  - Mine Alert
  - Energy Charter Treaty
  - Quanto mais estou a pagar por combustíveis?
  - How will we deal with all of the world’s rubbish?
  - Air monitoring with sensor
  - Quanto mais estou a pagar por combustíveis? Onde estão os postos mais baratos?
  - La grande onda
  - Estronismo climatico
  - None of the above
2. Among these examples, which one do you like more? And why? (*Open Question*)
3. Among these examples, which one do you think it is more effective in communicating science? Why? (*Open Question*)
4. Which one do you prefer to focus on for the rest of this survey? (*Open Question*)



5. Of the one you have selected, how easy it is to understand the focus of the piece? (*From 1,very hard, to 10, very easy*)
6. On the same example you already selected, how do you evaluate the rigour? (*From 1,very hard, to 10, very easy*)
7. On the same example you already selected, how easy it is to use it (navigate, scroll, interact, etc.)? (*From 1,very hard, to 10, very easy*)
8. On the same example you already selected, how much the format helped in understanding the content? (*From 1,very hard, to 10, very easy*)
9. On the same example you already selected, is there something missing? (*Open Question*)
10. In general, regarding this survey and innovation in journalism, is there something you'd like to tell us? (ideas, suggestions, critiques, etc.) (*Open Question*)

The majority of the survey participants (7) didn't previously know the selected examples. Three persons had seen *How will we deal with all of the world's rubbish?*, one person *Built on sand*, one *Mine Alert*, one *Air monitoring with sensor*, one *La grande onda*.

Below are listed **the most liked examples**, with the reasons identified by the survey participants. *Air monitoring with sensor*, *How will we deal with all of the world's rubbish?* and *La grande onda* were the most voted, with 3 preferences each.

- Air monitoring with sensor (3)
  - "It represents a lot of information in a very visual way."
  - "I really appreciated both on the design side and the content side. I think this project brought to light a relatively unknown topic, in a very scientific way and avoiding tones of pity. In common perception, the problems of the African continent related to environmental problems, usually focus on the loss of exotic animals (lions, elephants, etc), forgetting the inhabitants of the continent."
- How will we deal with all of the world's rubbish? (3)
  - "It presents solutions, although the solutions are not really convincing, because the time dimension is missing (meaning: how long does it take that those solution have an impact). And: It has nothing to do with science. However, technically, it is the most balanced article."
  - "Perception that BBC represents a legitimate source. Well



- researched, neutral objective and verifiable.”
  - “The source is reliable”.
- La grande onda (3)
  - “Because it is about a topic that I found particularly interesting in this moment and because of its data visualization”
  - “For its effectiveness in linking the investigation with creative and artistic "diversions"”.
- Estronismo climatico (1)
- Built on sand (1)
  - “Clear and good design.”
- In my nature (2)
  - “Originality, well designed, really innovator, emerging field (transhumanism).”

In particular, the **innovative aspects** highlighted most were **the visual aspects**, the **crossmediality**, and the **data visualization**. Two persons declared to have chosen *How will we deal with all of the world's rubbish?* because of the BBC, so the perceived reliability of the source seems to be a crucial aspect.

Overall, the results highlighted are consistent with some of the findings emerging from the most recent reports on Digital Innovations (such as the report [Journalism, media, and technology trends and predictions 2022](#) produced by the Reuters Institute at the University of Oxford and the [Nieman Lab predictions for Journalism 2022](#)) that show an increasing request for interactive formats, crossmedia and visual products.

For what concerns the **more effective examples** in communicating science, below are the main results. Also in this case, *Air monitoring with sensor* and *How will we deal with all of the world's rubbish?* were the most voted (3 votes each).

- How will we deal with all of the world's rubbish? (3)
  - “I really appreciated how this longform explored the issue from very different points of view, combining under the theme of rubbish different critical issues in different parts of the world. In this case, the idea of the complexity of the management of the problem, of its magnitude, but also of the possible solutions emerges clearly and it's connected to the scientific side of its management.
  - “Because the video is short and clear and arouses curiosity and encourages to deepen the theme. This is my quick response, but actually "more effective" is a bit vague and I am not sure I'll choose the same with a more detailed/contextualized question”
  - “Very clear, but not so rigorous”



- Air monitoring with sensor (3)
  - “Quality information, well presented”
  - “Because it’s very visual”
- Land of plenty, land but a few (1)
  - “Because the graphic is very clear”
- Disease X (1)
  - “Simple but easily accessible and scalable approach - builds the knowledge up in a progressive and digestible manner”
- La grande onda (1)
  - “Because while you read, you are absorbed by the narrative, and science is communicated at a different level, not explicitly”
- Disease X (1)
  - “Simple but easily accessible and scalable approach - builds the knowledge up in a progressive and digestible manner”

The two examples more liked and considered more effective (*Air monitoring with sensor* and *How will we deal with all of the world’s rubbish?*) were also the most chosen for the quantitative part of the survey. *La grande onda*, *Land of plenty, land but a few*, *In my nature* and *Build of sand* were also selected. Overall, the clarity, rigour and interactivity received an average high evaluation (See Table 2)

Table 2: Survey scores

| Piece   | How easy it is to understand the focus of the piece? | How do you evaluate the rigour?         | How easy it is to use it (navigate, scroll, interact, etc.)? | How much the format helped in understanding the content? |
|---|--|---|--|--|
| Overview  | Most voted score from 1 to 10: <b>8</b>              | Most voted score from 1 to 10: <b>8</b> | Most voted score from 1 to 10: <b>10</b>                     | Most voted score from 1 to 10: <b>9</b>                  |
| The air monitoring with sensors                   | 3 Votes, Average: <b>9</b>                           | 3 Votes, Average: <b>7,7</b>            | 3 Votes, Average: <b>9,7</b>                                 | 3 Votes, Average: <b>9</b>                               |
| How will we deal with all of the world’s rubbish? | 2 Votes, Average: <b>8</b>                           | 2 Votes, Average: <b>7</b>              | 2 Votes, Average: <b>9</b>                                   | 2 Votes, Average: <b>8,5</b>                             |
| La grande onda                                    | 2 Votes, Average: <b>9</b>                           | 2 Votes, Average: <b>8</b>              | 2 Votes, Average: <b>9,5</b>                                 | 2 Votes, Average: <b>9</b>                               |
| Land of plenty, land of but a few                 | One Vote: <b>7</b>                                   | One Vote: <b>9</b>                      | One Vote: <b>8</b>   | One Vote: <b>9</b>                                       |



|               |                     |                    |                     |                     |
|---------------|---------------------|--------------------|---------------------|---------------------|
| In my nature  | One Vote: <b>8</b>  | One Vote: <b>9</b> | One Vote: <b>10</b> | One Vote: <b>10</b> |
| Build on Sand | One Vote: <b>10</b> | One Vote: <b>8</b> | One Vote: <b>7</b>  | One Vote: <b>9</b>  |

Further feedback received are listed below. This includes also some critiques to the survey/project, that were considered during the Expert interviews. In particular, the issues raised in the last comment (science communication VS science journalism) were already discussed among the ENJOI partners and stakeholders, and will be further explored when developing the Observatory.

- “Perhaps there is a language barrier issue on some projects (Spanish, French), but I understand the efforts to put different editorial products to be considered”
- “How did you selected these journalistic formats ? There are journalistic formats more interesting and more innovative”
- “I didn't answer to the question on "rigour", because I am not sure about what is intended with this term and I don't think I could really evaluate it. *La grande onda* by the way seems very weel documented, it provides references and methodological clues”
- “The examples provided are many and would require time to be seen, read, listened: I took a look, but honestly the opinion expressed could be superficial”
- “Make it accessible, scalable, relevant to intended audience, ensure its objective, accurate and verifiable (from a trusted source)”
- “Do not mix science communication and science journalism. You cannot explore the two together in the way you plan it. Your project is a typical EU funded project, even your wording is "Brussels English". – Science communication is part of public relations, thus always partisan and very biased. Science journalism is journalism, therefore the opposite of science communication. Take politics: Journalism ist not there to promote a political programme, but to scrutinize politics. Or economic communication: Journalism is not there to hype a company or its products, but to scrutinize or question the work or product of a company. The same for science journalism: It has to scrutinize science programmes, science projects, scientific "breakthroughs". At least science journalists have to put scientific outcomes into a broader perspective. Questions journalists need to answer: What do other



scientists say? Is an outcome really new, or does it only add a small puzzle bit to an overarching solution? How biased is a scientific result, and who paid for it? How much statistical noise is in a research outcome? Who benefits? Is it published only to hype the reputation of a research institution or a specific scientist? Does something cause too much hope?”

Overall, the Survey results highlight the need to strongly connect the innovation of format and the innovation of contents. This aspect was further explored during the interviews with experts.





## 7. DEFINING INNOVATION IN JOURNALISM - INTERVIEWS WITH THE EXPERTS

The media sector has witnessed a lot of dramatic changes in the past few years. After the crisis of the first decade of the century, legacy and digital media have been struggling to find new business models, new type of revenues and also new approaches to a fast changing environment. There have been innovations and changes at least in three different dimensions:

- **Organization:** the old fashioned broadcasting one-to-many model has given place to new type of organizations. Content production is not an exclusivity of legacy media, anymore. Basically, every person with a digital identity can become a “media company”. And yet, lots of attention, from institution, policy makers, economic establishment, is still given to the traditional media. On the other hand, a lot of the audience is consuming contents and information produced by other actors, be them digital innovative media; solo creators; disintermediated experts; influencers; social media content producers and so on. It is an interesting moment and yet a very complicated one since it is very difficult to understand who are the key and reliable sources of public information.
- **Process:** information is more and more assimilated to a product in many media organizations. This implies the introduction of new methods to design new media products, to make them more respondents to the needs of the audiences, to make them more accessible, to make them original and diverse. It also implies understanding the audiences much more than before, and try to tailor the products to the audience needs. Design-driven technologies have become central in many media organizations while other are still reproducing old processes of news selection and production. Innovation of the process requires, firstly and foremost, innovation of the mindset behind the goals of the news production and distribution.
- **Product:** lots of experimentation is taking place, from using data to introducing AI in the journalistic and reporting process, from working on visuals to adopting gamification, from going to AR/VR to digital animations. Recently, not-so-innovative and low-tech formats such as newsletters and podcasts are becoming very popular.

Innovation cannot be approached with a one-way definition. There are many ways to define innovation, and they do not stop at the format. To gain insights, beyond the



ones offered by the answers collected through the survey, that can help and nurture our work in the process of building our ENJOI Manifesto for Outstanding Open Science Communication and the Observatory we have asked four experts to share their views with us.

Following here there are their main contributions to the discussion.

## **Luca Zorloni, Web Editor at Wired IT, Milan**

### **Innovation in legacy media**

There is a lot of growing interest in digital production that goes beyond traditional websites. Finally, even the legacy media seem to have become more familiar with the digital environment as an integral part of their working asset. They now have started to be present in different digital environments, with more attention and care to design native products for each platform and media, addressing different audiences and not simply trying to bring them all to the central website. They are learning to use different languages and registers depending on the platform, trying to convey complex contents in simple and effective outputs. There are quite many good examples of formats that are born from the need to be present on a platform with that specific approach and language. Some are experimenting well with new formats, such as Tik Tok videos or other social media products, that respond to the need of having different conversations with different audiences. In other words, the media now might keep their conversation in different environments, without merging them on the central website. By doing this, they reach a higher number of people.

### **New (old) formats: limits and opportunities**

There are these days a lot of collateral assets that have been implemented, in particular podcast and newsletters. Again, they are used to create new and very specific audiences that can be reached directly and do not represent a general indifferenced public.

However, in most cases there hasn't been a real change of paradigm here. For instance, data journalism has remained a little bit decorative, at least in Italian newspapers. Surely, the idea that a number or a graph might elicit engagement is there, and they are used particularly in print media. Also, many new tools and platforms ensure a certain degree of interoperability. What we still don't see, though, is the part of data analysis. The ability to find the news, to build new databases,



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original ones to be used and referred to when a journalist or a newsroom might want to tell a different story, an original one. In a way, as a metaphor, there is too little *digital shoe leather* reporting. There are no new skills involved in the newsroom, such as a data scientists or a developer. These type of professionals are brought into the marketing area but not in the reporting sector. One of the reason might be that most Italian journalists are older, and they have a very diverse cultural background and approach to their job. Another one is that data are not always available, and that there is the need to plan in advance, to have plenty of time to find it and put it together, something that requires investment and time. There would be the need to learn how to analyse the data, how to find a good story in the data, but this is not happening in Italian media for now.

Another element of innovation that is still in its infancy is AI, and its application to the reporting work. There are a lot of discussion around the idea of a cyborg or robot journalist, more on the side of the idea of defending the job as it is done today. However, there is no doubt that reports and data analysis, and also a very basic writing, can be done better by the machines, while machines cannot compete with humans in in-depth analysis and insights, and that's where there might be a great application. Also, AI might be interesting on the side of better understanding the readers, the audiences, and come up with a differentiation of the journalistic output in order to reach a broader segment of public. Of course, this type of profile requires data and raises a number of problems again with privacy and availability of information. And yet, it might be very interesting to break some bubbles, to make the contents available to different types of people.

### **What about engagement, is that a key to innovation?**

First of all there is a technological issue. There are more skilled professionals in defining the parameters and the approaches to profiling, but then if a platform changes approach (ie., Google moving from cookies to topics) that will have an impact and strong effect on the way audiences are studied, defined, profiled and so on. One point remains very clear: the big challenge today is grabbing the public's attention. Media, also the most innovative ones, reach a plateau after a while. There is an interesting trend to look at: innovators break the market, they are disruptive, they create new business models. And many others follow through and imitate. But after a while, only few of them will manage to survive in the attention market, those who will compete to keep their audiences.

### **Is there a specific challenge to focus on?**



Legacy media have been very slow in trying to enter new type of markets, in experimenting, in trying to find new media. Creators, innovators, influencers... these people might have found a key to reach new audiences. However, they rarely step further than trying to experiment with format and new approaches to retell the same story. These creators often are not the ones who find the news, they take the news and work on them. The news, the original informations, are still coming from traditional channels. And this is a problem: there is the risk that innovation is only in the format and is not coupled and doesn't go along with the ability to find new information, news, new stories to tell.

## **Karma Peirò - journalist, data activist and Founder/Director of Visualization for Transparency Foundation (VIT), Barcelona**

### **Innovation can be declined in many ways, what is your first thought about it?**

In terms of formats there is the need to work more and more to develop tools to communicate in an immediate and immersive way. Visual narratives are very powerful when trying to reach new audiences and also to make sure that all audiences truly understand the information, the data, the facts in depth. And that could be with video images, with data visualizations but using great skills to make them more accessible. That means to bring programming in the newsroom. And this effort is to be done in order to connect more with audiences and try to solve their problems, the questions they are pondering about and offer them the information they need. There are many such nice innovations and not only in the usual suspects, the American newsrooms that invest a lot in these new news apps. There are great examples coming also from South America or Asia, for instance.

Making the visual product very effective is crucial also because anything that doesn't work properly on mobile, today, is non-existent. And therefore, there is the need to use more audio, more narratives, anything to make that product more approachable.

It's not only media that should go down this lane, though. Institutions should and can do even more. For instance, VIT was involved in developing a visualization of data for UNEP, on the state of the climate to ignite climate action. There is a wealth of data, but usually that is offered as a report and for a citizen is very difficult to see how to act, what to do. In this experiment, programming was used to design [a series of visualizations](#) to make the messages stronger and clearer for the audiences.



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## **And how do we know that the audiences understand and take part?**

There is no exact formula, but the effort of journalists and reporters should always be that of analysing their audiences as well as possible. And even if using the available data might not be enough it's already a good step. Many traditional media do not even do that: they don't analyse the data, they presume they know their audiences but in reality they do not necessarily understand them. There should be a continuous monitoring of how readers and users get to the news products, how they consume them, whether their behaviour changes in time. There should be studies and periodic reports. And yet, in most legacy media, there is still the old system of an editor deciding what is important to publish, whether that is of interest or not for the people.

Media, at least in Spain, are still very reluctant to change their process and their habits. Even when presented with stunning and very new projects, like the one developed by the students of the Master held by the VIT at the University of Girona, that incorporate lots of thinking, of design, of planning, they seem to find that unfit for the general media. Meanwhile, though, some institutions are more interested in finding new ways to communicate and maybe there is there a space to experiment, to craft important information for the public, as the example done with Unep. But there is still a lot of work to be done.

## **Mattia Peretti, Manager of JournalismAI Polis - London School of Economics**

### **Define innovation in journalism from your observatory**

Innovation for me is using the technology but it's not technology-driven, it is more focused on the idea of making the content more interesting and accessible to more people, for instance exploding the concept of a traditional article. Not that the text is to be considered outdated, because in some cases it is still the right way to produce content, but it is no longer the only way to do everything. We could look at a concept of journalism as a modular one, where technology does play a role in making it becoming true, but the innovation is not the technology itself. It's in the theory of how to change the way we create, in trying to work more on the personalization of the content and its accessibility. So, not merely as a business idea, that we want to reach more people and that's it. But precisely with the idea that not everyone wants to approach information in the same way or needs the same content. In other words,



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we should help more people in using the content in the way they like, working more on the accessibility. Science journalism is a perfect example where there is the need of making it more understandable, more accessible to the audiences.

### **What kind of formats are more innovative and effective?**

Surely there has been a big change in terms of relationship with the audience: it's not the audience going to the media website but rather the content producers trying to find their audience and meet them where they are. For instance, the huge interest in newsletters is linked to this: you enter a person's email directly. Or podcasts, although there might be a plateau soon in that field since it has been exploding. In general, it would be important to change attitude toward journalism and accept that it is a product, and that having a product-oriented approach doesn't diminish the importance or relevance of journalism. And this means that product design becomes a key, a central focus in the process of innovation. Design is playing a major role in innovation, and therefore taking design-driven methodologies and applying them to journalism might help improving the way journalism is distributed, is made available to people.

### **Is innovation driven by economic resources and wealth? Are media from less wealthy countries incapable of innovation?**

Surely, the Nordic countries are the ones that have witnessed the major changes in the media environment, the highest investments, even if maybe more on the business side than on the actual editorial one. But there are many small and yet very innovative organizations that are innovating, trying to do a type of information that ends being of very high impact, a social innovation using technology.

For instance, this is the case of [Texty](#), a Ukrainian data journalism agency promoting "transparency and accountability by developing high-quality journalism and data journalism" and investigating and researching socially important topics that neglected by other media. Also, [DataCritica](#), a small Mexican team doing OSINT and other type of digital investigative reporting to expose corruption and malpractice, for instance in the environmental sector. As a matter of fact, there is a lot of innovation coming from difficult contexts, where the political or the social situation is very complicated and it might be difficult to think that tech innovation might find a space. And yet, these journalists and teams use it to change and have an impact on the situation they and their audiences have to face daily. So, the innovation is more in the question that unleashes a process than in the tech that is used. Even in countries, such as Italy, where the situation is different again and there is a panorama of legacy



media that are more conservative when it comes to innovation and change, a lot of innovation is coming from outsiders, small teams, independent organizations of skilled individuals. But there is a lot more that can be done.

## **Luca De Biase - journalist, essayist and innovation writer at Il Sole 24 Ore, Milan, and Research and Media Director at Reimagine Europa, Brussels**

### **What is the role of innovation and what is its main goal**

Innovation cannot be defined only from the technological point of view. It is firstly and chiefly the adoption of a changing attitude and it requires the collaboration of those who propose innovation with those who use it. Innovation can only be called as such if it has consequences, if it has an impact. And to get there, it needs to be adopted by the people it has been designed for. There is the need to go further though, since innovation not only needs to produce a consequence, but it needs to produce a desired consequence, a right one, one that can respond to the challenges that humanity is facing. And surely, technology plays a role, but innovation cannot and should not be merely technological. Innovation only serves its purpose if and whether it is capable of involving, of engaging and keeping the stakeholders within its unfolding.

### **How can we look at innovation in the context of science journalism?**

Focusing on science journalism, we should distinguish between scientists and journalists who communicate. Scientists can be at times even better communicators than professional journalists or communicators. But they have a very diverse goal from journalist. Surely, even scientists need to reflect on the rhetoric of science communicated and disseminated as if it were always done flawlessly and in the public interest. There is the need of a critical approach to the role of science, to its processes in time, to its social impacts. But nevertheless, scientists tend to disseminate the results and the core concept of their own work and field.

On the other hand, there is a very strong need to discuss the relationship between journalists and their sources. It is not sufficient, as it happens far too often, that scientific facts are disseminated and communicated based on the fact that the source is considered reliable, prestigious, highly regarded in the environment or because a very prestigious publication or media has already given that news. There



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might always be mistakes or malpractices that happen even in the most esteemed institution or in the most authoritative media. The truly innovative journalist is the one who has a very critical and at the same time perceptive and discerning attitude. She is the one who understands the dynamics of innovation and sees one when she sees it. Journalists and scientists are two players within a similar system: they both have to use a greatly innovative approach while connect thoroughly with their stakeholders.

While scientists are more vertical in their approach, with a very strong knowledge and an understanding of complexity within their field, journalists and communicators are more transversal, intersectoral, more empathic and their main asset is that of connecting with their stakeholders.

The media ecology framework and approach looks exactly at this interconnections. There is growing interest in defining these roles, and that is the main goal of the media ecology field, that defines connectors, and looks at innovations and revolutions not as one-step events but rather in an evolutionary key.





## 8. CONCLUSIONS

Innovation is not a mere matter of technology development. It has more to do with a in-depth reflection on the role of journalism and communication and on its relationship with the information needs expressed and demanded by the audiences.

When looking at innovation in journalism within the framework of science, it becomes even more crucial to raise the degree of awareness and ability to discern and comprehend the impact on society of any communicative action and choice.

Innovative formats can help to convey data and fact in a way that is more approachable, that combines immediacy and simplicity without trivializing the knowledge behind them. However, it is far from easy to design the right format for the desired audience. And sometimes, indulging on the aesthetics of visualization and immersiveness might compromise the effort.

This report meant to collect the views of those who, albeit being already attracted to scientific knowledge, are demanding readers, listeners, users of interactive journalistic formats. And let them share their critical views, their evaluations and preferences.

To complement the views collected through the survey, and put them in a more general discussion on innovation, intended at different levels and with diverse meanings and nuances, we had conversations with four experts: two who work mainly in two of the countries that are the focus of the ENJOI project and two who are involved in international projects at the european or global level. Their views, although differing in terms of some of the focuses and insights, converge on a few substantial points:

- Innovation both as a guiding principle and as a tech effort is still in its infancy in the media sector. Innovation needs to be conceived at the social, philosophical, ethical level and not merely at the technological one.
- Experimenting with diverse approaches, production methods and processes as well as formats requires diversity of skills to work together in the newsroom.
- Knowing the audiences, engaging with them and understanding their needs are the key to shape any communication effort.
- Information has now, even more than in the past decades, a crucial role to be played in order to face the contemporary challenges. But it needs to be redesigned in order to build a common ground with the public.

