



Ob.EMMA: A pioneer observatory of electronic music and media art in Portugal

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ABSTRACT

The Observatory of Electronic Music and Media Art (Ob.EMMA) is a pioneer observatory created in 2019 for monitoring, mapping, diagnosing and promoting the investigation of electronic music and media art in Portugal. Ob.EMMA is part of the ID research center CITCEM_Center for Transdisciplinary Research on Culture, Space and Memory. Given its hybrid nature, this observatory includes artists and academics from various institutions and areas, namely, communication sciences, social sciences, technologies, humanities and arts. Ob.EMMA integrates two main lines of research: 1_Electronic Music and 2_Media Art. explored both autonomously and also together.

One of the objectives of this observatory is to create a digital platform with the main purpose of organizing, managing and preserving information, using different storytelling forms of visualization. The work in progress is a pilot project, developed within the scope of line 1_Electronic Music to be later applied in the line 2_Media Art and if possible, to create intersections between both and available on the web for public access.

CCS CONCEPTS

• **Applied computing**; • **Arts and Humanities**; • **Media Arts**;

KEYWORDS

Electronic Music, Media Art, Observatory, Storytelling, Data Visualization

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1 INTRODUCTION

Ob.EMMA emerged primarily to fill some blanks in academic research on electronic music and media art in Portugal, essentially outside the denominated mainstream industries. In order to better

organize our goals, we defined four intervention groups composed by several topics and categories for both research lines:

- 1) Artist | Work | Creation
- 2) Industry | Production | Consumption | Exhibition
- 3) Dissemination | Preservation
- 4) Mapping | Reflection | Investigation

The premises of an observatory must above all, generate knowledge. According to Sakata et al. (2013) [1] an observatory works as a device for the visibility of action, sustained in new forms of institutionalization of scientific practice in the social space. It is based on these premises that we intend to materialize the aspirations and the objectives of Ob.EMMA.

In the line 1_Electronic Music, we intend mapping portuguese electronic music artists (DJ's and producers), events, labels, physical places and on-line platforms, music genres and formats. Through the collection, organization and analysis of data, we intend to define indicators that allow to understand this big universe from an artistic, info-communicational, technological and sociological perspective. Regarding the line 2_Media Art, we also intend mapping national media artists, physical and on-line places and events, formats and preservation of digital media artworks. The dissemination and the preservation of electronic music and digital artworks is also an area that we intend to explore.

Ob.EMMA intends to develop transdisciplinary research providing information based on quantitative and qualitative data, actively contributing to scientific knowledge and portuguese artistic and cultural scene. Achieve this outcomes implies not just literature analysis but also a deep dive into the industry, combining interactions with other researchers, artists and other professionals and the results of research projects of both lines will be available to different audiences through digital platforms with creative visualization.

The first experimental phase of Ob.EMMA research started in 2019. This first approach focused the line 1_Electronic Music and consisted especially in data collection, in order to define a preliminary set of descriptive and organized categories, for a future analysis of the alternative electronic music in Portugal.

Explore the alternative electronic music is a very complex and ambiguous task, given its fluid, multidimensional and not consensual characteristics. Gilbert and Pearson (1999) [2] pointed the difficulty in establishing a sociological or anthropological view of the culture of electronic music and dance music, since dance cultures are fluid and multifarious formations very difficult to map. But on the other hand, the author also highlights the recent efforts for a stronger empirical contribution to this theme.

Media art and even more specifically, digital and new media art are equally fluid and ambiguous territories, fertile for often



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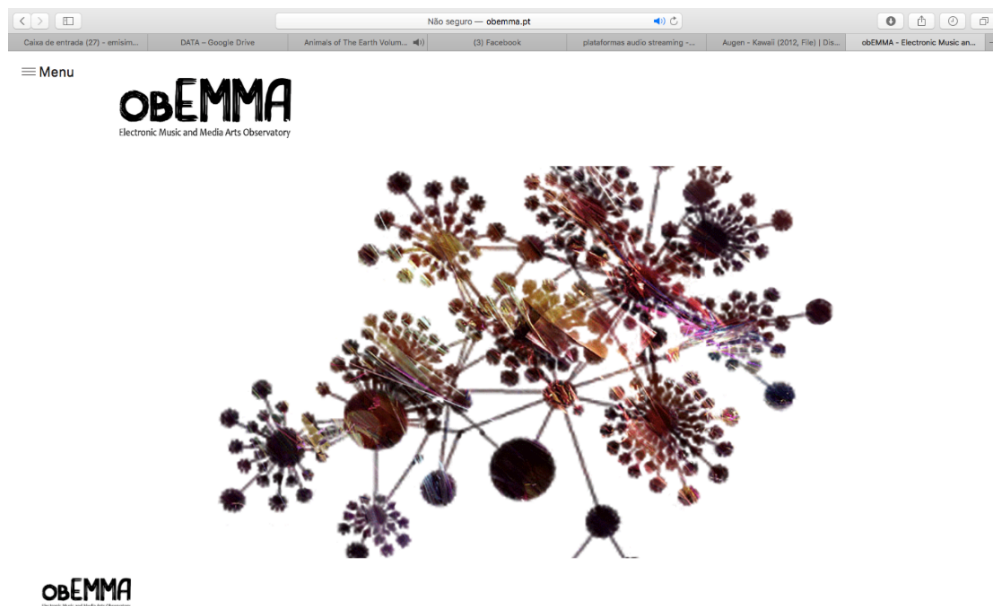


Figure 1: Ob.EMMA website <http://obemma.pt/>

raising complex epistemological questions. Is taking this issues into consideration that confront and explore the definitions of both concepts also remains one of the main concerns of this observatory.

1.1 Ob.EMMA 1_Electronic Music considerations

Technology has (also) been absorbed, appropriated, manipulated and explored in the musical fields (Lopes et al., 2010) [3] and is increasingly difficult to define and place the electronic music in the contemporary and digital society. In the late 90s, Théberge (1997) anticipated digital technologies as the tools of choice to shape music: *In many corners of the world at the end of the twentieth century, digital audio technologies have become the media of choice for purposes of composing, recording, archiving, analyzing, and teaching music* (Théberge, 1997) [4]. For a better understanding about this subject, Thomas Holmes proposed several characteristics of electronic music: the e-sound resources are unlimited; it can expand the perception of tones; it exists in a constant state of updating; it has a special relationship with the temporal nature of music; the sound itself is the material of composition; it is not affected by the limitations of human performance and provides a great space for mental and imaginative experience.

During the 70s the use of general-purpose music synthesizers simplified the production of electronic music - a music of continuity and non-continuity (Holmes, 2020) [5] In the 80s, the Disc Jockey (DJ) culture revolutionized the dynamics of electronic music, that have been growing exponentially until today. According to Cox and Warner (2004), *it has altered the very nature of culture production, opened new channels for the dissemination of music, and activated new modes of listening. It is not surprising then, that DJ Culture has fostered new social practices and operates on the front lines of cultural policies* (Cox and Warner, 2004) [6].

Considering the influence of electronic and digital artifacts in the musical production of the last decades, to mention electronic music per se can remain a vague approach. That is why it should be reinforced that Ob.EMMA focus is not on electronic mainstream but on the alternative/underground scene, from electronic dance music (EDM) rave/clubbing to experimental and exploratory formats (which is still quite comprehensive). There are several differences between rave/clubbing culture and experimental music: from restrict live performance to massive dance-floors, from modular synthesizers to *Ableton* or similar software, from formal labels to DIY practices, this subculture is a lode that we intend to explore deeply.

Even though it has more and more addicts, alternative electronic music scene is still a subculture stuffed with neo-tribes, communities, ideologies and practices followed by relatively restricted groups, when compared to other musical genres. But even this subculture cataloging is not consensual.

The new methods of composition and fruition accompanies technological evolution, as well as the desire to perceive and deepen new performance formats that transform the traditional relationship between performer and public (Holmes, 2002) [7]. On other hand, virtual EDM events on digital platforms and immersive environments, where avatars replace the organic bodies and the sweaty dance-floor while result of the technological evolution as well, are not profoundly marking the relationship between performers and publics but also reconfiguring the whole context (Simão, Silva and Magalhães, 2015) [8]. It is evident that these issues have been influencing the dynamics of electronic scene in the last years and the pandemic we are experiencing is also reinforcing these changes.

1.2 Ob.EMMA preliminar research

According to INE (Statistics Portugal) [9], in 2019 Portugal held 37,042 live events, accounting 16,926,411 spectators. 13,345 of these live events were live music shows, divided in different categories: Classical, Baroque and Ancient Music; Popular and Traditional Portuguese Music; Fado; Jazz/Blues; Pop/Rock and “another style of music”. Of the 13,345 live music events, 2,530 were “live music shows of another style of music” and we believe electronic music events can be included in this latter designation.

The distribution of these events throughout the portuguese territory is not uniform and still reporting 2019, most of the live music shows where electronic music can be held took place in the metropolitan area of Lisbon (908 events), followed by the Center (614), North (441), Alentejo (251), Islands (220) and finally, Algarve (96). However, this category does not only include electronic music events and there is no information about more particular characteristics of these events. These data are a good starting point, but they do not refer specifically the reality that Ob.EMMA intends to study. This is why there is a need to conduct an exploratory investigation, especially focused on alternative electronic music events and using more appropriated tools.

Given the circumstances motivated by the pandemic, it is known that music festivals to be held in 2020 were mostly postponed to 2021, some of which were postponed to 2022. According to APORFEST (Portuguese Association of Music Festivals) [10] in 2018 there were 311 festivals in Portugal and in 2019, 287. The 2019 annual report “Music Festivals in Portugal” of the association registered a decrease in the number of festivals by 7.7% compared to 2018, apparently because some smaller festivals located in non-urban locations supported by public institutions or associations did not happen due to lack of financial support. However, there has been an interesting growth in alternative events of small dimensions.

Music festivals have a strong economic impact in Portugal. Measured for the first time and taking into account that 2.1 million people went through these events, with tickets, transportation, food and other daily average expenses, music festivals contributed with 18 billion euros for the economy. [10]

Considering these evidence and other observations of Ob.EMMA, electronic music events in Portugal continues to register a representative growth, mobilizing various age and social groups and attracting more and more foreigners.

The initial mapping work started in 2019 and consisted of a preliminary data collection and organization in categories and sub-categories. The collected comes from various qualitative sources and references such as APORFEST, Club DJ Portugal, A Cabine, Alinea A, Dance Club Magazine, DJ MAG and other platforms, labels, event producers, social media, virtual communities, published works, direct contact with artists and direct observation, in order to also be subsequently transformed into quantitative.

The analysis of a random sample of 600 DJs revealed that half (358) have at least part of their work edited and published in EP's or single tracks, integrated VA compilations, albums, remixes or other variants. Due the increasing heterogeneity of music, the categorization of musical genres proved to be quite complex, especially when many artists refuse to be categorized. However, attempting to achieve measurable data, it has been identified some musical

genres and sub-genres like EDM/Big Room; Experimental Electronic; Techno (Minimal, Deep Techno); Ambient (Downtempo, Dub, Space Chill); House (Micro House, Deep House, Tech House); Drum & Bass, Dubstep; World Music and Psychedelic Trance (Goa, Progressive, Full On). It is important to mention that new genres may already be subgenres, varying according to the identity that the artist gives to the music, the moment and the context. The remix culture is characterized among others, by the constant reconfiguration, overlap and fusion of different musical aesthetics [11], which makes these categorizations increasingly difficult.

In a global view, most of the sample (660 electronic music artists) are in Techno and House main genders but is very common to fit in several. In relation their origin we could verify a segmentation by districts where the vast majority are from Lisbon and Porto, followed by Faro, Coimbra and Braga. The rest are approximately divided by the remaining districts and islands. The beginning of the activity of these artists lies between 1979 and 2019, confirming the perception that ages are relative and heterogeneous. The beginning of the activity of these artists lies between 1979 and 2019, confirming what we have been observing – in electronic music age is relative and heterogeneous. About gender issues, 565 individuals are male, 85 are female and 10 are non-binary which reveals that the dominance of the male gender is quite significant. Even if collective electronic music genres can have more than one genre, the scene is still predominantly male and hetero-normative.

The electronic music festivals scene is growing mainly because of the tendencies to include several formats in the same event. There are more and more multidisciplinary events with various stages and dance-floors, conferences, art installations, multimedia performances and event with several aesthetic tendencies. In parallel with the growth of some of the major Portuguese festivals (Boom Festival, Forte, ZNA, Freedom Festival, NEOPOP, among others) it is also verified that smaller festivals are spreading in urban context but also out of the big cities, extending to a much larger geographic area. Allied to this, there is also an increasing attention to the sustainability.

In numbers, in 80 music events, 45% are dance music festivals, 26% are EDM raves/parties, 15% are related to conferences held by agents of the electronic music industry and academics and 14% are generalist festivals with disruptive artistic practices.

Analyzing the universe of electronic music with relative depth shows that is increasingly integrating other artistic practices. Festival SEMIBREVE, an event of exploratory e-music and digital art is a good example of transversality and even fusion of electronic music and digital arts (in this case, sound design, live performance, video art, generative art, interactive art, immersive art and others). Is based on these examples that Ob.EMMA intends whenever possible, converge its two research lines.

Observation, collection and organization of information is essential for the production of knowledge however its dissemination and visualization are also important.

To facilitate the integration of linking interaction into this project, we proposed an approach to automatically integrate text and visualization elements to build visual stories. This approach is based on a detailed analysis of narrative text to identify data key elements that can directly index into the visualizations to create a deep coupling (Figure 2).

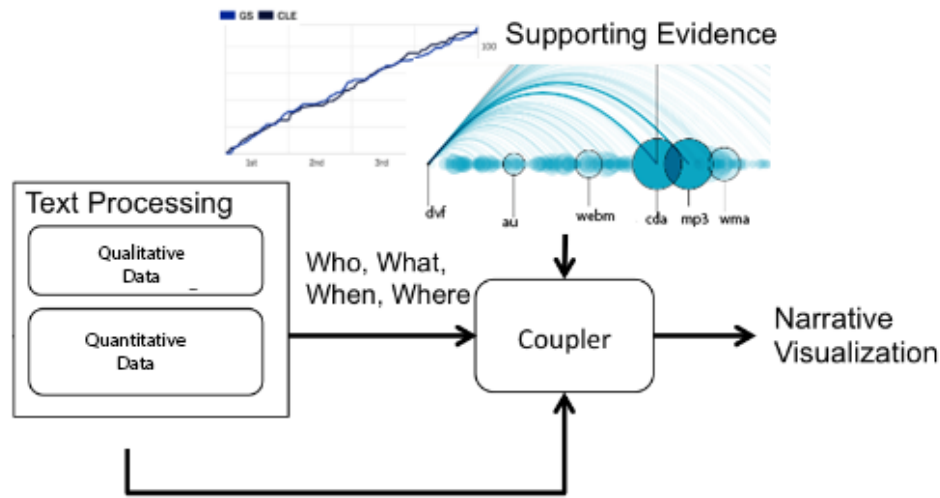


Figure 2: Software architecture for deep coupling of data and visualization components

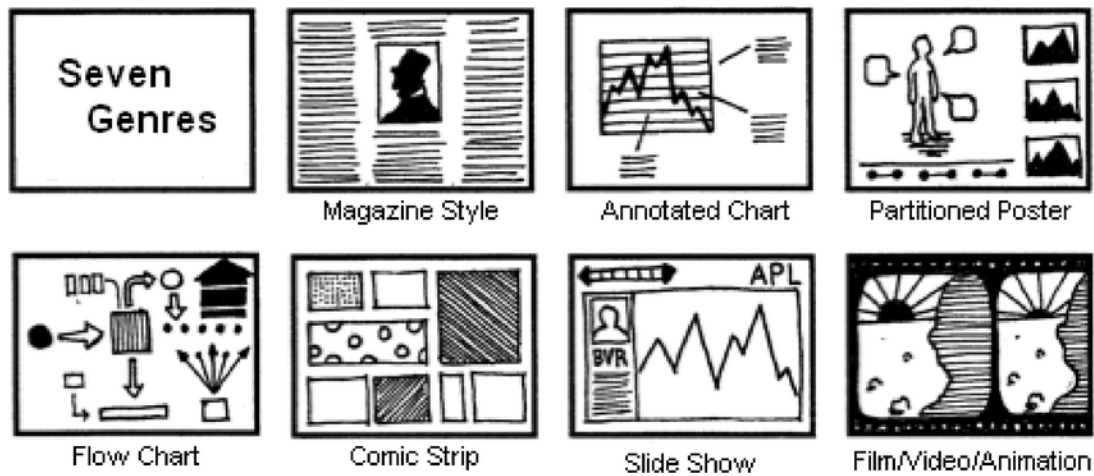


Figure 3: The figure shows the seven genres of narrative visualization presented by Segal and Heer [15]

The focus is solely on data (qualitative and quantitative) to produce the multimedia elements visualization (charts, tables, video, images, and audio). Examining and documenting the physical state of an object is an important part of understanding its overall condition [12]. The process of examination and documentation will allow to follow the work and author.

1.3 Visual storytelling for data communication

Ever since Edward Tufte (1983) projected the basic guidelines for visual data representations containing Graphical Excellence, Visual Integrity, and Aesthetic Elegance [13], visualization has been

commonly promoted to show information and promote data analysis. Gershon and Page (2001) launched the idea of storytelling in information visualization [14] arguing that a story is worth a thousand pictures and storytelling allows visualization to reveal information as naturally as if the viewer were watching a movie [15]. The possibility of storytelling in visualization research was accentuated again by Kosara and Mackinlay (2013) who consider this method the next step of the visualization research [16].

Data visualization is regularly promoted for its ability to reveal stories within data, Segal and Heer (2010) divided the narrative in seven genres as showed in Figure 3

All over the past, storytelling has been an effective way of conveying information and knowledge. In the field of visualization,

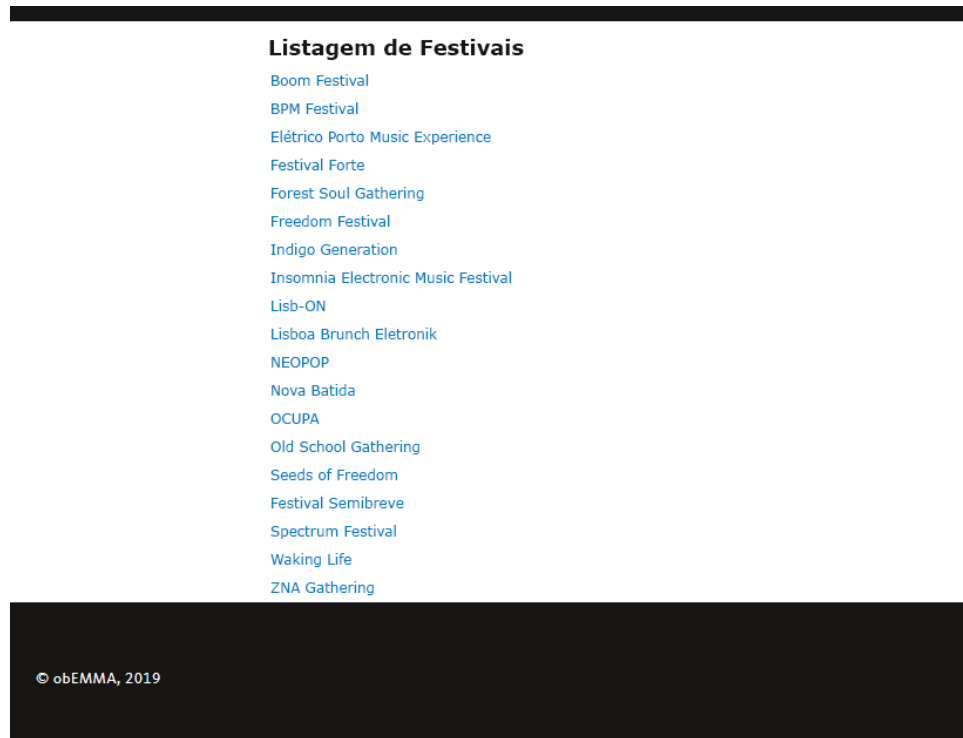


Figure 4: Ob.EMMA Festivals list

storytelling is quickly gaining force and evolving pioneering techniques that enhance understanding. Many communities have commented on the importance of storytelling in data visualization [17].

Data visualization is often promoted for its ability to reveal stories within data, yet these data stories differ in important ways from traditional forms of storytelling. Our project suggests design strategies for narrative visualization, including approaches to storytelling and educational media. For long time, there have been a lot of interfaces and tools developed to promote and simplify visualization creation. Recognizing specifying visual structures and mapping are the vital aspects for building visualizations, Grammel et al. (2013) identified distinct visualization construction approaches in the literature: Visualization Spreadsheet, Visual Builders, Textual Programming, Template Editor, Shelf Configuration and Visual Dataflow Programming [18]. Current web technologies have facilitated authors to create and promote numerous ways of integrating text and data visualizations for storytelling. This combination may influence the narrative and thereby affect the reading experience. However, this combination promotes the engagement between data and users and brings back to this project the need to explore this way to show all information available.

1.4 Data visualization

Telling a story through narrative visualization seems to be effective for communicating the intended message. However, there are no clearly defined metrics or evaluation methods to measure the effectiveness. For this reason, Ob.EMMA will make available the

information collected in two different ways. We use the more traditional method of displaying information in lists with data crossing and also a more graphic method through the construction of narratives based on the work and the author, for example, providing the crossing of visual information. Data is gathered and shared to help and assured that its possible see patterns and have understandings we would not otherwise. Numbers and data need to be put into context for understand it and stories are how can help numbers make sense, not only to ourselves but to others.

In Figure 4, its possible to see Ob.EMMA prototype where in a first stage, the information is available on a formatted list. Users can access all info through a query system.

Figure 5 shows another way to access information. It is possible to see all the details from an artist through its participation on a festival. All the data collected about the artist is concentrated in a kind of evolutionary technical sheet.

In Figure 6 we show the second form to access information. It's possible to access to the details of each artists of the Artists List. When we choose one format, we can select whether we want to segment by festivals, artists, genres, labels or other variables from the platform lists.

2 CONCLUSION

This paper presents Ob.EMMA, the Observatory of Electronic Music and Media Art and its data visualization prototype for Electronic Music, based on a multidisciplinary approach combining social, artistic and technological research. The collected data will be gradually inserted into the platform to monitor the model's effectiveness

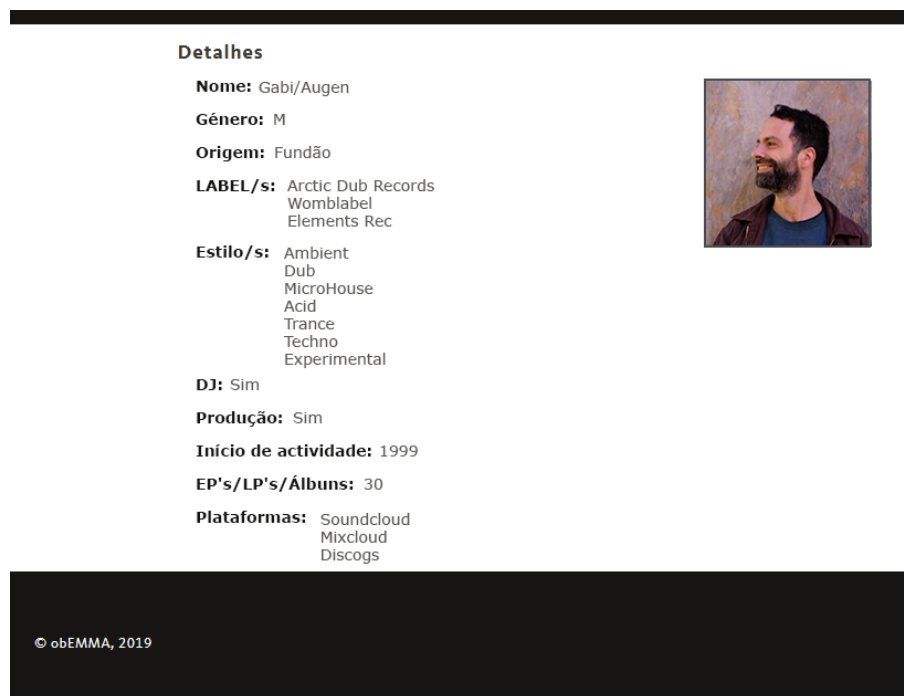


Figure 5: Ob.EMMA Artists Data view

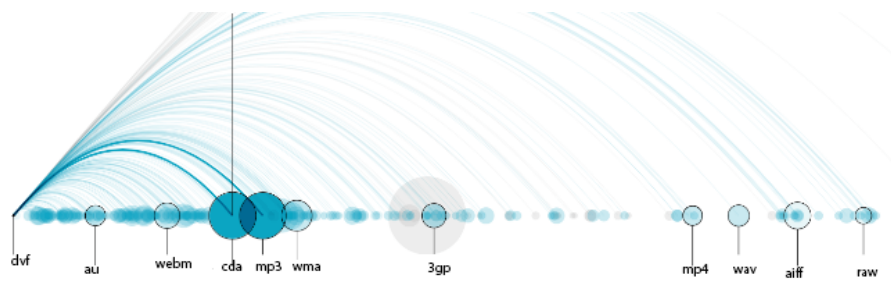


Figure 6: Ob.EMMA Data Storytelling file formats view

in terms of information organization, dissemination and visualization. Future research will evolve use the model to design, analyze, and evaluate new metrics in electronic music and media arts. In studying the different integration formats of data and visualization in storytelling, we found that linking data and visualization can improve user engagement and decrease users mismatched the data and the corresponding visual elements. To extend our work, future research should also perform studies to investigate the effect of various design factors of visual storytelling on crossing qualitative and quantitative data.

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