
A PAPER ON REPORTERS REPORTING INFORMATION

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Abstract:

Journalists had been responsible for reporting the news in the past. Yet today news stories disseminate from various outlets as the events unfold. Therefore, the collecting, screening, and simulation of events has an growing importance. Enormous volumes of data are usable but it is not an easy job to manipulate them. Data journalism can be characterized as a flavor of journalism, in which numerical data are used in knowledge production and dissemination. This essay discusses the requisite skills journalists need to have to work with data journalism. It describes data journalism more specifically, and addresses the capabilities of information and communication technology (ICT) journalists, As well as the skills required to support data journalism. Web 3.0 and open data which can play an significant role in digital journalism are given special attention. It also introduces and addresses a survey conducted among qualified journalists in Greece on data journalism.

Keywords: *Data Journalism, ICT Skills, Workflow, Data, Visualization, Survey, Social Issues, Authenticity.*

I. INTRODUCTION

The introduction of Information and Communication Technology (ICTs) has practically influenced every part of human activity. Journalism has since been changed, along with its resources, by digitizing the job cycle as well as by incorporating the Internet (Veglis 2009). Citizen coverage has intensified competition, and mainstream media outlets are under pressure to produce more and more content (Allan and Thorsen 2009). Today, the journalist is supposed to be able to: leverage several resources and facilities in order to be updated immediately about the breaking news and current events; Citizen reporting has increased competition, and there is demand from major media sources to create more and more content (Allan and Thorsen 2009).

Today, the journalist is expected to be able to: exploit many tools and services to be immediately updated on the latest news and current events; Journalism has also been considered tightly linked to technology. Air, television and ICTs have increased their reach in the last decade of the twentieth century, and have also created new possibilities for collecting and receiving news and for producing and disseminating news (Spyridou et al. 2013). Data journalism has received significant interest in recent years both in scholarly research and in the field of emerging technologies in digital news production (Appelgren and Nygren 2014; Fink and Anderson 2014; Mair and Keeble 2014) [1]. As in the case of social media journalism and citizen journalism, digital journalism is generally seen as journalism's future (Knight 2015).

Data journalism is a new form of journalism that has gradually evolved over the past few years, driven by the digitally available data. Nearly anything can be represented in the digital world today by numbers (Gray et al. 2012). Data Journalism is a journalistic speciality that represents the increased role of numerical data in the modern era in the creation and dissemination of information. This essay discusses the problem of data journalism. First, the status of data journalism in Greece is analyzed using a survey that focuses on the nature of data journalism among practicing journalists. Data journalism is described in subsequent pages, and the requisite ICT skills that journalists will have to deal with the data journalism needs are addressed. These skills are closely linked to the stages in a data journalism project's growth [2]. It also includes a detailed review of the Platform 3.0 skills journalists that possess. The last section provides findings and possible expansion of this research [3].

II. A SURVEY FOR THE USE OF DATA JOURNALISM IN GREECE

A. Data journalism in Greece: -

Initially, data journalism appeared in Greece in the form of simple infographics which told the public about certain parameters of news stories. Most of these visualizations are static, and are distributed in print and online versions. We have relatively few examples of mid-scale data journalism ventures that disseminate large volumes of content. Some interesting projects were produced during the post-election period and included analytical results of the elections. In Greece the data journalism definition is not prevalent. In Greek media the word Data Journalism is seldom used. In 2014 Veglis and Bratsas translated the European Journalism Center (EJC)'s data journalism handbook (J. Gray et al., 2012) into Greek. In addition, the School of Journalism and Mass Communication at Aristotle University of Thessaloniki taught an elective course on data journalism in the spring of 2014 [4].

III. METHODOLOGY

To thoroughly examine the state of data journalism in Greece, a survey was conducted using an EJC-built online questionnaire.² The questionnaire included seventeen questions about how journalists use evidence, their level of competence, their learning needs, and the obstacles they face. The questionnaire was circulated to members of the Journalists' Union of Macedonia and Thrace Daily Newspapers (ESIEMTH) and also to members of the Greek Section of the Open Information Foundation through the School of Journalism and Mass Communication at Aristotle University. The survey took place between March and June 2014, and featured 58 participants. The questionnaire was issued to journalists as part of a seminar organized by the Educational Institution of Journalists Macedonia and Thrace Daily Newspapers, after a one-and-a-half hour lecture on data journalism. Two very important points appeared in the debate that followed which are caught in our analysis. One of the respondents to our questionnaire said that 'to perform analyzes, to construct visualizations in our papers, there is not much data available in Greece, so it is very difficult to locate such results.' Continuing the debate, added a journalist who engaged in the poll, '[e]ven though we find any details on the internet. Both remarks agree with the findings of the 2014 Open Data Census of the cities, undertaken by the Greek Open Information Foundation, in which it is seen that the key problems that occur with data are the lack of permits and their non-machine-readable nature, rendering them impossible for journalists to use [5].

A. Survey results: -

Of the 58 participants there were 24 men, and 34 women. The participants' education level was very high as 38 were journalism school graduates and 16 had a master's degree and four had a college degree in journalism-related subjects. Among the 58 respondents, 32 were 25–35 years of age, 16 were 35–50 years of age, 8 were 18–25 years of age; And two of the respondents were older than 50 years. Online media served the highest number of participants (55.2 percent; 32 participants). When asked why the participants were interested in data journalism, 3.4 percent (two participants) cited competitiveness as the cause, 20.7 percent (twelve participants) cited technical motivation, 6.9 percent (four participants) expressed excitement, 27.6 percent (sixteen participants) expressed trying to establish a service of public importance, And 41.4 per cent (24 participants) said they needed to increase news output efficiency. The findings show that Greek journalists trust in the added importance of data journalism for both the general interest as well as news output. Concerning the state of data journalism, the survey indicates that 58.62 percent (34 participants) of our respondents did not have any imminent plans for beginning data research.

B. Discussion of the findings: -

The survey results indicate that the majority of Greek journalists are not involved in projects involving data journalism. Journalists who work in internet media tend to have an influence on data coverage relative to journalists who work in traditional newspapers or in the education field. Nonetheless, S, most journalists focused on the value of working with data and were involved in

acquiring more experience and skills in computer journalism. It is worth noting that online journalists tend to be more interested in data journalism and are keen to develop their data journalism expertise and skills. This result agrees with the result of the EJC survey. But we must keep in mind that the number of journalists working in magazines is very low and that the effects of their approach towards data journalism might not be fully correct. Journalists say they need more feedback on diverse topics.

For in-depth analysis, the demand for data on social, environmental, educational and health needs is strong. The journalists noted that financial transparency would offer responsibility to the Greek government and people for their acts and help combat corruption in Greek society. It's very clear that the volume of data on the internet is increasingly growing. And if journalists are to stay competitive, they need to conform to their profession's demands and become, to some degree, data journalists. It is clear that, contrasting with online journalists, newspaper journalists have failed to adapt to the era of data journalism [6]. A worldwide phenomenon is the migration from newsprint to online news. The growing role of online journalists in data journalism and their increased curiosity in gaining more expertise to create more and better ventures in data journalism is evident in the survey. Overall, Greek journalists require guidance on topics related to data journalism. In the next sections we will seek to describe specifically the required skills that journalists require to be able to cope with data journalism [7].

C. Defining data journalism: -

At the end of the twentieth century it was difficult to hire a vast volume of data to compose an article and it demanded expertise that went beyond the ordinary journalist's capability. Few news outlets in the U.S. and Great Britain have also recruited engineers working on new goods. Journalists used to rely on different sources of information). There have been several investigative journalism cases, of course, where journalists have been able to find money to gather and examine their own data and report their findings in papers. The notion of journalism around data is not fresh. Since the late 60s, multimedia data has been used in news reporting of US newspapers (Parasie and Dagiral, 2013). The fast adoption of ICTs and the development of data in digital form slowly brought in electronic journalism. It is synonymous with the term data-driven journalism while the older term, machine-assisted reporting, has faded (it was adopted in the early stages of media history) (Bradshaw 2010). There is an increased interaction between journalists and several other fields in data journalism, such as design, computer science and statistics (Thibodeaux 2011). Simon Rogers, who first listed it in a post to the Guardian Insider Blog (Knight 2015), credits the word data journalism to him. Data journalism is a discipline that incorporates spreadsheets, statistical interpretation of the images and the main news reports (Rogers 2008). It can be described as a process that starts with analysis, and proceeds to filter and represent data in a way that links to a narrative. It is basically news graphics development and contains interface and interactivity features. Megan Knight (2015) describes data journalism as 'a story whose primary source or 'peg'

is quantitative (rather than anecdotal), or a story involving a substantive data or visualization feature.' The concepts of traditional journalism and data journalism are depicted [8].

D. Journalists' ICT skills: -

Today the journalist is required to possess the ICT skills necessary to successfully deal with the difficulties of his everyday work. Today, journalists often try information on the internet and via email (Veglis 2013). It is worth noting that by embracing news tools, resources, and software as they are usable, these capabilities must be maintained and expanded. Veglis and Pomportsis grouped the ICT skills of the journalists into five categories: technical skills, online publishing skills, Online 2.0 skills, cloud casting skills, and competencies in computer journalism. This categorization will be expanded with the introduction of a new level relating to Web 3.0. Web 3.0 capabilities include technical information and Web 3.0 Engineering practice [9].

Some of the journalist's most important elements in Web 3.0 are the Semantic Web and Linked Open Information. The Semantic Web is an effort aimed at promoting the use of semantic information in web pages to encourage common data formats on the Internet. Thus the web, now dominated by unstructured and semi-structured documents, is converted into a data web. It is based on the framework for resource description (RDF), which provides a common framework for sharing and reusing data across applications, enterprises and communities (Allemang and Hendler 2011). Based on the form of semantic data a journalist will use to analyze, he will need to learn basic terminology and ontology defined using the Resource Definition Framework Schema (RDFS) (Brickley and Guha 2014) or the Ontology Web Language (OWL) (McGuinness and van Harmelen 2014).

Such vocabulary is used in the data web or Linked Open Data (Bizer et al. 2009), and is defined as a living ecosystem in the Open Software Foundation's Linked Open Data Vocabulary (Vatant and Vandenbussche 2014). Open data is a move that encourages the principle that all data will be publicly accessible to all to use and republish as they wish, without copyright limitations, trademarks or any protection structures (Auer et al. 2007). Open Data is data which can be widely accessed, reused and shared by anyone according to the Open Data interpretation. Open Data can be followed by an open license such as ODBL (more appropriate) or Creative Commons granting rights or allowing third parties to reuse the data freely. The related open data is a critical Platform 3.0 feature, since it can be related to other data and thus help the semantic platform [10].

IV. DATA JOURNALISM STAGES – SKILLS

There are two basic methods to producing an essay on data journalism. In the first method, the data set contains more details on the story topic that has already been uncovered in the newsroom, and in the second, the data set acts as a starting point for the exploration of additional knowledge

.Mirko Lorenz, an intelligence architect and digital journalist, is proposing Phases in data journalism workflow: diving deep into data by scrapping, washing and structuring it, searching by scanning for relevant information, and visualizing and assembling 23 stories (Lorenz 2010). Paul Bradshaw explains the cycle of data journalism in a similar way: the identification of data that might involve advanced skills such as MySQL or Python, then the interrogation; For which jargon and statistics comprehension is important, and finally visualized and mashed with the help of open source software.

Data journalism should also be seen as a method of refinement, where raw data is converted into something tangible and, as a result, interest to the public is growing, particularly as complicated facts are boiled down to something tangible. A simple tale that people can quickly understand and recall (European Journalism Center 2010). Paul Bradshaw (2011a) also suggested an inverted ladder of data journalism. The inverted pyramid consists of five stages: Compile, Clean, History, Merge and Communicate. Based on what has been published, we are proposing a Data journalism workflow with six stages: data collection, data washing, data interpretation, data analysis, data visualization and article writing. The workflow model is seen in Figure 5. These stages that mean the skills of journalists will have to be a computer writer. First, we analyze each of the six steps of the workflow.

Data Comprehension: data collections typically contain specific identifiers to represent divisions, classifications or areas, and special jargon that is not readily interpreted by journalists. For certain instances, additional data is often required to make the current data relevant. This means that journalists should be able to absorb information, generate information in a cohesive way and think objectively about it. This skill is referred to as computer literacy. Data literacy also involves statistical literacy, but also learning how to deal with broad data sets, how they have been created, how to link various data sets and how to view them (Gray et al. 2012).Data Validation: at this point, the journalist cross-checks his original data and obtains additional data from sources. In order to enrich the knowledge available (Silverman 2014; Veglis 2013). As any source, evidence cannot necessarily be trusted because it comes with its own narratives, prejudices and goals. The journalist will also examine questions such as: who gathered it, where, for what reason, and how it was gathered (Bradshaw 2011a). This can be solved by researching history.

The development of a data set, the identification of connections to a data set or the use of certain sources of knowledge that relate to the same topic under investigation (Silverman 2014).Data Visualization: data visualization is a digital branch of statistical statistics, which includes the development and analysis of visual representation of data. It is worth noting 26 that infographics are also part of static visualization. They are concise visual izations of evidence or facts that are capable of communicating detailed information easily and simply (Smiciklas 2012). These are also used in magazines, weather forecasts, as well as charts, location images, and historical data graphs. Article Preparation: the final stage involves the drafting of a news story. Depending on the format

planned for publishing, the article may contain unique features (e.g. external links to other posts or similar information, multimedia content, mashups and static or immersive visualizations) to better leverage the medium's ability.

Because in order for a journalist to be able to deal effectively with all phases of data journalism, he must have very advanced ICT skills. This is why the majority of news outlets that use data journalism have set up teams with various specialties to write stories focused on data sets or deploy computer-driven news applications (Gray et al. 2012). The development of the data set, the identification of references to the data set or the use of other sources But even though the journalist operates with a team that involves programmers and data visualization specialists, the expertise mentioned above would enable him to communicate successfully with the members of his team, resulting in a good data set. Journalism ventures. Knowledge relating to the same topic under review (Silverman 2014). Data Visualization: data visualization is a digital branch of statistical statistics, which includes the development and analysis of visual representation of data. Our analysts say they need more data on specific topics. The need for data on policy problems, the environment, education and health needs for in-depth analysis is strong. Journalists observed that financial accountability could make the Greek government and people responsible for their acts and help combat corruption in Greek society. It is very clear that there is a lack of data. It's rising quickly on the network. Therefore, if journalists are to stay competitive, they must conform to the demands of their career and become, to some degree, data reporters. This is clear that newspaper journalists, in comparison to internet journalists, have not evolved to the age of data journalism. Migration from newsprint to electronic news is a regional trend.

V. CONCLUSION

This essay deals with the topic of data journalism. The required skills that journalists should learn in order to deal with this current development in media have been given special attention. These skills are closely linked to the stages of data journalism which were described in great detail. The above findings could guide educators in adapting their programs to journalism. This is already happening as the constant changes in market demands, with regard to journalistic skills, have forced journalism educators to adjust their programs to better facilitate the industry's needs. Journalism students would therefore enter the media industry more able to manage their jobs. It also published a study on the use of data journalism in Greece. Its findings are in line with a related survey conducted in Great Britain which also identified a low penetration of media organizations data journalism practices (Knight 2015). There is no question on the part of journalists that data journalism needs specific skills. In this scenario the success of these abilities is apparent.

While they are likely to collaborate on these projects in the future, the majority of journalists are not yet interested in data journalism. Online journalists tend to be more active and inspired, and this result is in line with research showing a continued move towards online media (Cokley et al.

2015). We do not ignore that you can only harness the full potential of data journalism on the internet. The findings of this analysis will assist journalist educators in developing training programs on different skills related to data journalism. It is worth remembering that Aristotle University of Greece's School of Journalism & MC will begin offering life-long learning programmes directly aimed at trained journalists in data journalism (Veglis and Bratsas 2015). Tim Berners-Lee claims that 'data-driven news is the future' and encourages reporters to dig into data sets for reports (Arthur 2010). We are persuaded that in the future of digital journalism the Semantic Web and Related Open Digital would play a significant role. Journalists will be able to consider and use new technology of the future that will provide more 'intelligent internet.' Web-technologies, mobile appliances (smartphones, etc.) and software are being constantly converted and updated. These innovations will be embraced by data journalism and so data journalists need to learn the expertise required to leverage them. Future continuation of this research would provide a comprehensive wide-ranging study of the educational needs of journalists with respect to the expertise of data journalism.

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