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Abstract: Research has shown that publishing budget data in open platforms does not directly lead to journalistic use. Specifically, tailored data and budget trainings for journalists significantly enhance the usability. This report gives an overview on steps taken to increase journalistic use of open data platforms focusing on financial transparency.

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Executive Summary

As our previous reports have shown simply publishing budget data in open platforms does not directly result in media coverage. To enhance the utilization of such platforms and increase the coverage, this work package focuses on how to properly transfer public finance knowledge and data skills to increase the use of open budget data for journalistic analysis. A key finding is that more context is needed to increase understanding and use of financial data.

This has been overcome by the workshops and tutorials part of this work package. The report lays out how we attempted to tackle the persisting discrepancy. We used an iterative process of giving workshops at different conferences - focusing on a journalistic audience - and established best practice trainings to provide interesting introductions to working with financial data. Therein, it is paramount to embed financial data into the rich context of public finances and show journalists examples of what can be done with budget data.

We fostered the knowledge exchange on several occasions and have made this material publicly accessible thereby further enhancing the reach and enabling journalists to cover financial transparency issues.

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Abbreviations and Acronyms

NGO	Non-Governmental Organisation
OKFDE	Open Knowledge Foundation Germany

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1 Introduction

Work package five applies the concept of transparency through open budget data, to the field of journalism. Journalism plays the crucial role in our society of deriving information from data and other observations, creating content with it and communicating this content to an audience. Our previous research in deliverable 5.1 and 5.2 has shown that simply publishing open budget data on online platforms, does not directly turn into significant use of those resources. This was highlighted in the extensive gap analysis undertaken that asserted obstacles in accessing and understanding the data and a lack of journalistic training courses. To tackle these obstacles, we held several workshops that spread the knowledge of financial data skills for journalists.

We will first provide a short recap into how this work package is structured and what measures have already been taken. Then we will present in detail what trainings we gave, how they were structured and how we adjusted our material. The last section will focus on what we have learned in the process and what remains to be done. A detailed overview of all trainings undertaken can be found in the appendix.

2 Recap

In the previous work packages we defined our goals as increasing the use of budget data for journalistic research. Identifying the gaps that prevent journalists from working effectively with budget data. These gaps can be summarized on three levels: access, understanding and training on budget data. Access to budget data varies largely throughout the European Union, the main obstacles being completeness, different formats and identification of private beneficiaries. A basic lack of understanding budgets can be asserted for a majority of journalists, with accounting and terminology as key hurdles. Furthermore, trainings that combine both data journalism skills and expertise in financial data are scarce. Finally, financial data at large is used in major investigations such as Lux Leaks, off-shore leaks, the Panama Papers, but budget data alone is less used.

After the gaps were identified, we executed several measures increasing the access of budget data and creating documentation that helps understanding complex budgetary data. Especially tailored budget data trainings were developed to foster the use of open data platforms such as OpenBudgets.eu for journalists.

As our research asserted, open data tools - although highly regarded - are often little used by their intended audience, because they require additional understanding (context) on the journalist's side, which does not fit their accustomed workflows. Open budget data, like open data in general, cannot be used for the purpose of journalism without linking it to other resources. These resources are of two types: contextual, as journalists need to access other kinds of public information before they can work with budget data; and educational, as most of the foundations for working with budgets on the one hand and data on the other hand are mostly inexistent in European newsrooms.

Therefore, we have worked on creating additional resources that will embed OpenBudgets in the larger context of the closely related right to information and right to access public documents. The OpenBudgets platform will become the go -to place for journalists looking for budget data, while additional tutorials and tools developed as part of T5.2 and T5.3 will increase the abilities of journalists willing to work with budget data.

As we laid out in work package 5.1 the implementation is structured into three phases. With the research and gap analysis undertaken in the first phase. In the second phase, we developed the first concrete course material. We worked together with media-organizations, journalism schools, and conferences to conduct on-site training. We developed both a series of workshops to teach necessary data skills to aspiring data journalists and connect this to the first data-expeditions. During the data-expedition the acquired skills can be used for extensive analysis on the data to come up with first leads for stories.

3 Trainings and Projects

3.1 Train the Trainers

Goal

During the course of WP 5 in OpenBudgets.eu - May 2015 - April 2017 - the team followed several data training workshops and interviewed trainers to develop the trainings portfolio.

Method

The Train the Trainers track that the OpendBugets.eu team from OKFDE followed started with the School of Data Summer Camp. In this weeklong conference, the strategy to develop

training, logistics, potential themes and different methods were taught in a peer-to-peer learning environment.

On two major journalism conferences, DataHarvest 2015 and 2016, Perugia International Journalism Festival 2016 the team followed the data journalism and financial journalism courses and spoke to the trainers to exchange materials and learn from their methods. Finally, the OpenGlam workshop in Amsterdam was visited to get a new perspective on training for NGOs on Open Data as that was still lacking in the portfolio.

Outcome

These observations, interviews, and materials collected channels into the Deliverables 5.1 and 5.2 and internal Train the Trainers workshops, new workshop materials and exchange with other data trainers.

3.2 Training and Workshops during Conferences

Goal

The aim of the workshops was to meet the journalists where they are already present and “off-work” to provide training on-site at conferences. One of the problems noted in interviews with experienced data journalist trainers, for the gap analysis report, was the participation of journalists, allocation of time, and the support of the editor. This would normally require large logistical and outreach overheads. A good solution to this problem was providing the workshops on site at existing conferences. This automatically drew in the journalists to the conference and prevented having to provide a space for the workshops.

Method

The workshops offered the basics of data science, budget and finance data, for journalists and activists tailored to their work. Depending on the conference we focused on particular themes like EU or Migration, or on a particular budget like the German Budget.

We have experimented with four different formats: lectures, tutorials, hands-on workshops guiding participants through tooling, and hands-on participatory workshops. The lectures work well to convey a lot of information and are well placed for a, for example discussing the German Budgetary System. However, a similar workshop done in a tutorial setting brought much more in depth and detailed questions. Finally, the participatory workshops work well to convey hard topics like statistics in a playful and welcoming manner.

Most workshops need to contain all three elements: introducing the topics in theory with a lecture, providing playful intermezzos to offer the participants a different learning experience and hands on training so that the material taught can be used further.

Outcome

We have organised 6 workshops at different conferences (see appendix), ranging from 2 day workshops at the European Alternatives summer camp teaching the very basics of data science to a 2 hour training on statistics for journalists. Audiences were NGO-employees, Civic Tech, CSO's, activists and journalists. In total over the 7 workshops we had 150 participants, with average groups of 20 people.

Evaluation

Workshops at conferences are a good way to reach diverse audiences and teach basic courses that can be taught in a couple of hours. It is very well suited for basics of or introductions to different topics. Key for such workshops is to be inspiring and direct participants to follow up sources and take away the first hurdles that are present when working with data.

In some workshops, we focused on a theme and budgets and explained how this related together. This resulted in a solid understanding of the budgetary system, but did not provide people with the understanding of the complexities of budget data, or working with data.

The Data focused workshops in turn lean more heavily on the data-side, where the focus on tooling for cleaning and modelling data was selected over the ins and outs of the context and specific aspects of budgets in politics. This provided people with a more hands-on understanding of the tooling and next steps, but required them to gain further knowledge on the context of the data itself. Context that is crucial for the eventual analysis.

A full workshop where both context and data and the tooling can be discussed requires thus several elements and cannot be done in one hour at a conference. On some conferences, we had more time and such a setting offered both basics of budgets and the basics of working with data. However, for more in depth courses self-organised settings with multiple meetings or tutorials are required.

3.3 Football Tax Workshops

The aim of the workshops was to have Data Journalism students learn data journalism skills and provide input in ongoing investigations for the Football Tax

Goal

In order to promote uptake of the tools developed under this project, we carried out a series of workshops with journalists and journalism students (see Appendix). The workshops let us present OpenBudgets.eu and the tools developed as part of the project and allowed us to gather feedback on the projects, as well as to observe how journalists went about using budget data.

The workshops were part of the Football Tax case study, which let us observe journalists and feed the scoping analysis (task 5.1) and refine the development of the tools built in this work package (task 5.3).

Method

Workshops lasted between one and two days. Participants were given an introduction to the topic of the case studies (a deep look at the public spending in football in the country where the workshop took place). Then, a one-hour crash course in public accounting was given, so that participants could better understand public budgets. At the end of this crash course, they were given a quiz to make sure that the key concepts were understood. After this half-a-day introduction, participants were told to choose one football club and to find all transfers of public funds to that club.

During the information retrieval phase, participants had to feed a database of money flows, which they had to use to produce a visual or an article explaining their findings.

Outcome

The workshops were extremely rich for the participants. They learned how to disentangle the entities that form a publicly visible whole (football clubs are often made up of at least two financial vehicles, as was explained in deliverables 1 to 3 of this work package). They learned how to use unique identifiers (registration number) to track financial vehicles. They pored through deliberations after they realized that there was no database of money transfers available. They tried to make use of freedom of information legislation to obtain documents from public administrations and in all cases, they were shocked to discover that the administration refused to answer them, in full disregard of the law. Most importantly, some journalists realized the value there was in looking for source documents as opposed to relying on interviews.

These experiences were useful for this work package, too. The way participants considered structured information let us refine our tools. The first two tools of this work package (see deliverable 5.5) assumed that many journalists could fill out a spreadsheet properly.

Participants showed that they could not make a distinction between textual and numerical information, nor that they could understand the value of storing data in a structured way. At the same time, the findings of the case studies showed that most of the journalistically relevant information was not to be found in budget data. As a result, we shifted our focus from creating visualization or data-driven tools and enhanced our tutorials on how to spot anomalies in budgetary data.

3.4 Cooking Budgets Tutorials

Goal

Informed by the scoping analysis, we saw that journalists lacked the most basic skills required to understand budgetary information. The few who did know their way around public budgets were experts who needed no further help (as we showed in deliverable 5.1) and others could not distinguish between a liability and an asset. What's more, the case studies showed that most of the journalistically relevant elements of public expenditures were not to be found in budgets, but where off-budget items. As such, a body of accessible knowledge was needed for journalists with no previous knowledge of public budgets.

Method

To create a series of tutorials on public budgets, we faced a serious challenge. Workshops showed that journalists had no knowledge of the issue and considered it an extremely dry and irrelevant to their work. A traditional approach to tutorials would not have worked. Instead, we used the technique of satire to make the tutorials clearer and more enjoyable to read.

The series of tutorials goes under the name "40 recipes for cooking budgets" and shows abstracted methods by which public officials can use public resources for personal gain. Each tutorial shows a step-by-step summary of the technique being described. Below, one block of text shows examples from Europe or OECD countries where public officials used this technique. Another block explains how journalists can spot the technique in public budgets.

Outcome

In total, 15,000 users visited the tutorials. They were featured in professional publications targeted at journalists and hailed on social media as a brilliant initiative. They served as the basis of the third tool developed by this work package (see deliverable 5.5), which reached hundreds of thousands of Europeans and made them aware of the risk of corruption in public budgets.

3.5 Large scale data-drive Cohesion Funds

Goal

Work Package Six required OKFDE's team to collect 14 Member States' beneficiaries lists for the European Structural and Cohesion Funds, evaluate those and develop recommendations. It was decided to extend this effort to map all European Structural and Cohesion Funds and build up a network of journalists to work with this data to also feed into work package 5.

Method

In May 2016, the first Hackathon was organised together with the frictionless data team of Open Knowledge International. The tooling of Open Spending was tested on running datasets and the infrastructure for a collaborative effort was developed by setting up Github repositories and spreadsheets to gather all the web-locations of the datasets. This effort was extended on the Hackday of Dataharvest 2016 and the first connections with interested groups of journalists were made. On the first and second of July, input workshops with journalists were developed. On the first of July, in a collaborative effort, the main questions for the project were developed and on the second of July hands-on workshops on Github, scraping and cleaning were given to a Berlin-based group of journalists to further work on the project together with the Open Knowledge Germany team.

In August and September, the effort was extended online and several tutorials on Github, data cleaning and European Subsidies and Policy Context were offered to interested journalists. Over 50 Journalists showed interest and both online and offline meetings were organised to allow people to collaboratively work on the project, whilst providing essential skills training as working with Github, scraping, cleaning and modelling data.

These efforts were extended to the full dataset of all beneficiaries lists from 2007 onwards with additional funding from the Adessium fund in October - December 2017.

Outcome

The project resulted in the online data portal subsidystories.eu, the data quality report as published for WP 6 and the Story Hunt: EU Uncovered. From May to October 2016 over 50 Journalists have been in contact with the data, 20 have participated in tutorials and 823 have viewed online tutorials.

The project itself contains extended manuals for journalists so that they can use the subsidy data independently. Furthermore, an active community is now based around the platform that

searches the data and will participate in the follow up project also financed under [OpenBudgets.eu](https://openbudgets.eu): The Story Hunt.

3.6 The Story Hunt

OpenBudgets.eu and the German School of Data ([Datenschule](https://datenschule.de)) organised the [Story Hunt](https://storyhunt.org) this fall: a program for Journalists, Activists, NGOs, Designers, and Coders to dive into EU financial flows. The program was based on the previous work of subsidystories.eu and encouraged the participants to take a closer look at the data and find stories and leads. The Story Hunt consisted of two parts: a workshop series that aimed at training aspiring data journalists and NGOs in data-literacy and providing a background in financial data and a weekend long data expedition working with experts on finding stories within the subsidystories.eu dataset.

3.6.1 The Story Hunt Workshops

Goal

The Story Hunt Workshops were conceptualized to train aspiring journalists and NGO employees in working with large datasets, while especially focusing on EU financial data. We wanted to give an introduction into the field of data journalism, whilst conveying basic data literacy skills that would enable the participants to work with large open data platforms such as [OpenBudgets.eu](https://openbudgets.eu) and [Subsidystories.eu](https://subsidystories.eu).

Method

Workshop 1: Getting Started

In the first workshop we addressed the question "what constitutes a good data-driven project". [Simon Jockers](https://www.simonjockers.com) illustrated this question in his talk on the Data Journalism Projects and Practices at the German Newsroom Correctiv. To provide the participants with hands on tools for structuring their own data journalism projects we presented the [Data Pipeline](https://www.data-pipeline.com) methodology that breaks down a data project into seven iterative steps from asking the right question, to finding, getting, cleaning, verifying, analysing and presenting the data.

Workshop 2: Asking Questions and Finding Data

The first in any data project - or any research project for that matter - is formulating the right question. A data project has the additional challenge of finding interesting databases that may answer that question. That is why the second workshop focused on the different portals that provide large databases such as the [Investigative Dashboard](https://www.investigativejournalism.org) by OCCRP, [Cohesiondata EU](https://cohesiondata.eu) and [OpenCorporates](https://opencorporates.com).

Workshop 3: Scraping and Cleaning Data

Data does not always come in optimal machine-readable formats making its use difficult at times. Therefore, this workshop focused on avoiding laborious copy-pasting efforts by utilizing the [webscraper plugin](#) for the Google-Chrome browser. In most cases scraping turns out data that requires cleaning and transforming, which is why we introduced the Online-Tool [OpenRefine](#). The tool is ideal for cleaning data and enriching the informational value. An overview on OpenRefine's functions can be found [here](#).

Workshop 4: Analytics and Basic Statistics

In order to use proper analytics it is crucial to have a basic understanding of statistics as well as the data to be worked with. Verena Pflieger of [INWT Statistics](#) gave us a short introduction into statistical concepts e.g. sampling, correlation and causation. In the second part we worked with European Structural and Investment Funds (ESIF) meta data and analysed them in Google Sheets answering the questions: which EU member state receives the highest amount of subsidies? And how much of their Gross Domestic Product (GDP) do subsidies account for?

Workshop 5: Visualising Data

In order, to tell a story with data it is important to be able to properly visualize it. In our last workshop Data-Viz expert [Lisa Rost](#) showed us the Do's and Don'ts of data visualization and gave an introduction to the Online-Tools [RAWGraphs](#) and [Datawrapper](#). Together we visualized the previously enhanced financial data. We created a map that showed which country receives the highest amount of EU-Subsidies in relation to their GDP, with Poland at the top of the list with 3%.

Outcome

All our presentations and the datasets used in the workshops can be found in our Github [repo](#). Furthermore, a group of 10 participants have now expanded their data literacy skills and worked with EU financial data and will participate in our weekend workshop the Story Hunt Data Expedition.

3.6.2 The StoryHunt Data Expedition

Goal

The [Storyhunt: Uncover the EU](#) was a weekend-long journalism workshop hosted by the Open Knowledge Foundation Germany's teams of [Datenschule](#) and [OpenBudgets.eu](#). Together with journalists, analysts, non-profit organizations, developers and designers we dove into EU financial data provided by [subsidystories.eu](#). The aim of the weekend was to provide

participants with the tools and opportunities for mutual learning on how to find leads in financial and EU data. The group included participants from the previous workshops plus proven experts who joined us in Berlin constituting a group of 25 people.

Method

The weekend was also structured around our main data-analysis methodology tool: the data pipeline. The data pipeline describes the different stages of a data-driven project: Asking the Question, Finding and Getting the Data, Cleaning, Verifying, Analysing, and Presenting.

To help the participants select a topic, we started with interactive expert sessions on data journalism projects on the EU's financial system. [Stefan Wehrmeyer](#) focused on the [farmsubsidy](#) project and how it helped foster thorough investigations into the EU's agricultural and pollution policies. [Brigitte Alfter](#) stressed the importance of cross-border journalistic collaboration, because national coverage alone does not raise significant attention in covering EU policies.

In order to prepare balanced interdisciplinary teams, the participants analysed their own skill set using a character sheet explaining their skills around design, programming, and storytelling. After being introduced to the topic of EU structural funds, participants were asked to provide their hunches on what could be found in the subsidy data. The hunches were then condensed to a small set of research ideas and started focusing on the challenges ahead.

Outcome

The teams worked together throughout the weekend, the different skill sets encouraged peer-to-peer learning. The key to the weekend was learning to navigate the obstacles of a data driven projects, such as data quality issues, standardisation and normalisation, and contextualising analysis and findings. The teams kept pressing on with their research and discovered an array of interesting facts, where EU policies might have gone awry. The result of the weekend exceeded our expectations, as the three teams found concrete leads for further research around EU subsidies and will continue their investigation in a cross-border collaboration.

Major learnings from the weekend were: “patience is key to any kind of data investigation”, “do not fall in love with your first hunches”, but “be flexible with your ideas and what the data gives you”. Working in the teams and reflecting on the work helped to revisit the initial hypothesis and take the necessary u-turns when the first hunch was a dead end.

3.7 Data Journalism Hackathon: Red Flags in NSRF Data

Goal

The [Red Flags](#) application addresses the requirement in D2.3 that concerns red flags for tenders and contracts indicating corruption, mistakes that were described in D6.2 and D8.3. It uses the data from ANAPTYXI.gov.gr, the official website of the Greek Ministry for Development and Competitiveness that provides analytical information related to implementation process for the projects of National Strategic Reference Framework, and analyses it in order to identify possible red flags.

The goal of this hackathon was to promote the usage of tools and methods that were developed under this project. Red Flags application is developed partially by Open Budgets.eu. Professional Data Journalists and MSc students of data journalism used the Red Flags application to identify possible red flags and analyse the implementation process of the projects of National Strategic Reference Framework (NSRF) in order to produce data journalism articles.

Method

The [hackathon](#) lasted one week. The first day, the developers of the Red Flags application presented to the participants the capabilities that it provides, as well as ways to explore, analyse and find possible unusual behaviour in NSRF projects.

Next the participants were involved in hands-on training in the use of the app to become familiar with its environment so that they can use it to effectively retrieve data. They formed teams to carry out further research in one week, by selecting a NSRF project that was indicated as red flag in order to produce data journalism articles. Finally, the participating journalists, were invited to present the findings of the research they carried out on the last day of the hackathon.

Outcome

In the last day of the hackathon, the participants shared their experience working with the Red Flags app to write data journalism articles. They described the steps of the research process they followed, how useful the app was and the problems they encountered while trying to find more information about unclear situations. They realized how hidden information in data, that are extracted using advanced methods, can help them write stories.

Journalists found it handy, well organized and took advantage of every functionality it offers. They stated that the available public information the app uses, is not always sufficient. The hidden information that is provided reveal some inconsistencies in fiscal data and it was necessary to search further in other sources, such as municipal or prefectural councils, archives from other agencies or direct communication with the stakeholders of these data. Finally, they were very willing to send us feedback from their experience to improve the app.

4 Discussion and Conclusion

In order to bridge the existing gap between the journalistic practice and the use of open data portals, we systematically tackled the major challenges: access to budget data, understanding of budget data and the absence of specific trainings.

We took a major step to increasing the access to budget data by releasing subsidystories.eu a portal that gathers all European Structural and Investment Funds data in one place. While one major source of budget data was thereby released, availability of national and local budget data varies largely throughout the European Union. It remains to increase the journalistic use of freedom of information acts to obtain high quality budget data for further investigation.

We fostered journalistic understanding for financial data by giving multiple lectures and workshops. These trainings were deliberately placed at journalistic conferences, where we found a highly motivated audience. Our trainings were mostly focused on acquiring in depth knowledge on working with financial data, its terminologies and how to use open data platforms such as OpenBudgets, OpenSpending and SubsidyStories. Further trainings were centred on general data skills (data literacy), or focused on specific topics like statistics.

Additionally, we fostered understanding for financial transparency and where to find metadata, which is a great starting point for any journalistic inquiries. It is paramount to inspire journalists for financial data, because only after getting a grasp of a topic e.g. EU expenditures journalists will look into the more detailed budget data. Therefore, it is desirable that open budget platforms not only present data, but are equipped with general information on finance and terminology to become a hub for interested journalists.

We have conducted multiple trainings in May, June and July wherein we gave trainings on data skills necessary for data journalism, while focusing on EU financial data. Thereby, we expect the use of open data portals to increase because the general understanding for financial data has increased. Once familiar with the data participants are ready to work with the portals and search for stories.

Thereafter, the knowledge we gathered throughout all the workshops needs to be consolidated. We have learned that it requires a very structured and detailed approach to train journalists in financial data because the necessary data skills are often not part of their

background. The training materials will be collected, reviewed and published online to ascertain that further journalists can utilise the resources and expand their knowledge in financial data.

In conclusion, our journalistic outreach has been quite successful. After analysing the journalists needs for better access to budget data, a better understanding thereof and hands-on workshops, we prepared specifically tailored workshops that we strategically placed at international journalism conferences. We have covered substantial grounds over the last years and thereby increased the use of open data platforms. Furthermore, our materials are available online to further spread the knowledge and foster journalistic utilisation of such platforms.

5 Appendix

List of Workshops:

Neuchâtel (CH) - Journalist students workshop (October 2015)

Strasbourg (FR) - Information design students workshop (November 2015)

Lille (FR) - Journalist students workshop (March 2016)

Paris (FR) - Journalist students workshop (April 2016)

Thessaloniki (GR) Journalists workshop (May 2016)

School of Data 2015 (18 - 31 May 2015)

European Alternatives Summer School Berlin (June 2016)

Perugia - train the trainer (6 April - 10 April 2016)

Glam Workshop Data workshop (11.04.2016)

Workshop European Transparency Data (05.02.2016)

Workshops together with J++ (20.05.2016)

Workshop Datenschule - Internal - train the trainers (16.06.2016)

Workshop in preparation for cohesion funds (01 - 02.07.2016)

Follow the Subsidies meeting Berlin (10.08.2016)

Meeting Loic to work on Cohesion Data (03.09.2016)

2 x online meeting and tutorials

Journalism hacking in Madrid at IO DC (05.10.2016)

Code Week workshop

From November, onwards: continuous coordination with journalists online

Basic Statistics for Journalists Workshop 16.11.2016

Manuals, explainers + Screencasts for journalists

Red Flags in NSRF programs 31.03 – 10.04.2017

Republica Workshop 08.05.2017

DataHarvest - Roundtable session and Workshop 18-21.05.2017

StoryHunt: Workshop Series five two-hour Workshops with 15 participants (23.05.2017, 30.05.2017, 06.06.2017, 13.06.2017, 27.06.2017)

StoryHunt Data Expedition: EU financial transparency Summer Camp - 20 participants (30.06.2017 - 02.07.2016)