Policy Research Use of Data Visualization in Central, Southeast, and Eastern Europe: A Learning Study

Kristie D. Evenson
Marieke van Dijk

October 8, 2013

OSF Grants Portfolio
Policy-Relevant Research
Evidence-Based Advocacy

Janet Haven,
Associate Program Director,
Open Society Foundations
Information Program

Andrej Nosko
Senior Program Officer,
Open Society Foundations
Think Tank Fund

Contents
Report

“Data matures like wine, applications like fish.”

— James Governor

01 Acronyms

Abbreviations & Meaning
—
List of organization names and countries

CEA	Centre for Economic Analysis (Macedonia)
CSS	Centre for Security Studies (Bosnia and Herzegovina)
FPA	Fair Play Alliance (Slovakia)
IA	Institute Alternativa (Montenegro)
INESS	Institute of Economic and Social Studies (Slovakia)
IP	Information Program
OSF	Open Society Foundations
POS	Price of the State
TIS	Transparency International Slovakia
TTC	Tactical Technology Collective
TTF	Think Tank Fund

02

Executive Summary

> “The universe is made of stories, not of atoms (or data)”
>
> — Muriel Rukeyser

OSF Think Tank Fund and Information Program support of data visualization from Central Europe to the Caucasus has begun to shake up policy research and advocacy discussions throughout the region. Many of the organizations receiving grants in this area had a steep learning curve in learning how to do and use data visualization. Getting the data was usually only the first step, and organizations quickly realized that shaping the data into meaningful products in collaboration with technical programmers took more skill, time, and effort than they had anticipated.

Nonetheless, in the end almost all organizations developed useful data visualization products through their grants. From databases to more interactive search tools to mapping programs, the products have compiled information together in ways not previously available or demonstrated in most of the countries. The program has succeeded in bringing information to audiences in new and more accessible ways.

The actual use of these products by audiences, on the other hand, has shown less success. In some cases, products have fulfilled their intended use by their intended users. However, in many cases, targeted product use has fallen short. Unclear and/or overly optimistic projection of audiences and use are a common feature of the grants evaluated.

In many cases aiming for multiple levels of users translated into products that were designed almost for everyone, but not necessarily for anyone.

Ensuing advocacy efforts reflected this mixed approach to users and mixed set of advocacy priorities. Some products were linked to clear advocacy efforts and gains in issue areas, including some unanticipated gains in encouraging improved government classification systems for data and use of several products in educational settings. Yet overall, the advocacy potential for such products is still greater than their achieved impact.

Organizations' interest in and capacity for data visualization has increased. Organizations absorbed many of the lessons of how to do data visualization, and almost all show an interest in continuing or expanding the products they developed. They also seem keen to pursue further use of such tools in their other work. At the same time, many realize that they need additional training and or support to go meaningfully beyond their current use of such tools. Here particularly useful would be technical support for making the products more targeted and interactive with audiences, and assistance in developing communications and outreach strategies for the products.

Donors have an opportunity to build on these learning moments and to further encourage data visualization efforts with these organizations and others in the greater region. The present study highlights a number of grant-making design and management considerations for refining this process. It also raises a number of conceptual and strategic questions that donors and grantees alike should consider when contemplating how to use data visualization in their policy research and advocacy efforts.

Some key learning points include:

Project Implementation Processes:

- Easy access to data is dependent on country context and cannot be assumed;
- Making data presentable takes more effort and time than anticipated;
- The technical development process requires significant hands-on management and is often more challenging and longer than planned;
- Development of data visualization products and their advocacy and outreach use has its own learning process. Organizations mostly appear to recognize that this process needs to be more intentional and critical from the beginning;

Product and Impact Analysis:

- Product innovation or interactive features do not guarantee use, which is dependent on factors such as the nature of the data, quality of audience targeting, and political context;
- Clear advocacy outcomes require clear advocacy targets and realistic assessments of how users can affect change;
- Visualization projects can have unexpected advocacy by-products such as use in educational settings or as part of government data classification management;

Organization Capacities:

- Most organizations when introduced to visualization tools see the benefit in sustaining the product and/or similar data visualization efforts;
- At the same time, most feel the need to find a balance between trying new innovative approaches and their main policy research activities;
- Most would welcome some type of learning community or support mechanism for further data visualization efforts.


EXIT


KLM

03

research
ideate
develop
design
combine
explain
interview
survey
test
observe
data-analyze
organize
write
rewrite
wrap
iterate

One of the 16 grants was to the Institute of Economic and Social Studies (INESS) in Slovakia for creation of a toolkit based on its own data visualization tool, The Price of the State (POS), which effectively means that the study covers 15 grant experiences. INESS's efforts will be examined in terms of capacity development considerations as part of implementation processes.

Methodology

This learning study sought to take a snapshot of processes, projects, and products from sixteen different grants in eight different countries from the Open Society Foundations (OSF) Think Tank Fund (TTF) and Information Program (IP) data visualization portfolio, which ran from 2010 to the present (mid-2013). The portfolio includes a number of grants still to be finalized, which has meant that different information and insights are available for different grants. Accordingly, the researchers made an effort to capture and focus on those experiences and trends that appeared most relevant for reflection on program outcomes as well as future programming considerations. In order to do this, the study used desk review of relevant project documents, semi-structured interviews with the organizations and a set of external actors, and a content analysis review of the products.

The two researchers traveled to four different countries during May 2013 and met directly with 10 of the 16 organizations covered in the study. These included meetings in Budapest, Bratislava, Sarajevo, and Skopje. Each of these meeting typically lasted between one and two hours and often included additional time for meeting with technical staff or colleagues tasked with designing and managing the data visualization projects/sites. In addition, while in Budapest, the researchers met with TTF and IP staff for further debriefing on the grants and the program.

In each country, the two researchers also met with a number of external actors to better understand how the products were perceived, used, and spread, and the relative level of data visualization efforts present in the country. Interlocutors included journalists, government officials, and other NGO and donor colleagues. Upon return home, the researchers conducted Skype interviews with the remaining organizations as well as several follow-up conversations with organizations met during the field visits. In total, the researchers had 24 in-person meetings and conducted nine Skype meetings. Please see Appendix A for a list of meeting informants.

The two researchers made notes and sketches of each meeting, and as part of the reflection process went over main trends and conclusions as they traveled. Upon return, each reviewed her notes and outlined key ideas for the report and engaged in further exchange of ideas and concept development. The lead researcher drafted the narrative report with a main focus on organizational processes and impacts; this was supplemented by the data visualization specialist's analysis of the products and their utility. The data visualisation specialist took the lead in crafting a visual depiction of the findings.

The researchers wish to thank all of those that contributed their insights and time to the study. Special thanks goes to Zsofia Revay of TTF for her tireless support in making (and changing) travel arrangements during a project requiring intense travel.

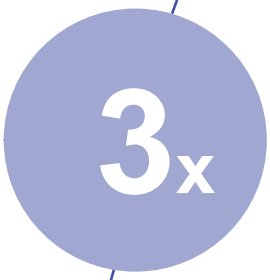
Skopje

—

Early in the moring from
the hotel window.

04

Thematic grouping
16 projects in the learning study



Budget Transparency
and Spending

Public Safety and Crime
Public Spaces and Resources

Judicial Proces Mapping
Mentor Toolkit
Parliamentary Function
Public Procurent / Public Contracts
Social Exclusion

Main goals

— to improve the use of data in a way that is understandable and used by the target audiences.

— to have this affect policy discussions, and for this type of data presentation.

— to become a more normal part of policy institute and organizations' ongoing and future efforts.

Introduction

Donor efforts to support policy research throughout the Central, Southeast, and Eastern European regions generally have focused on ways to improve capacities for supply of policy products and through this process to generate demand. The assessed program adds another factor into this mix, as grantee organizations experimented with presenting data in new ways, with a focus on reaching new audiences and creating new policy-advocacy narratives.

Data visualization tools are at the center of this experiment. TTF and IP together have developed a joint program that manages and guides this process. As is common in such trial efforts, there are multiple objectives. TTF and IP have articulated three objectives: to improve the use of data in a way that is understandable and used by the audiences, to influence policy discussions, and to build capacity in policy institutes and think tanks to present data publicly and in new ways.

Having these three complementary but distinct objectives is not easy. The grants selected show that TTF and IP have emphasized some objectives more than others at different times, which has meant that grantee projects have reached aspects of each of these objectives, but rarely managed to address all of them to the same level. The objectives also have different potential timelines. Policy discussion impact often requires more time than product creation and audience targeting. Similarly, organizations' normal and comfortable use of such tools is more of a mid-term outcome, as it requires organizations to take on and digest such tools in their ongoing and future work.

In some cases, the objectives may be complementary. Keeping this in mind, the study proceeds as follows: it examines the different aspects of the efforts and effects, and through this process provides insights into how these objectives can work together and where such funding efforts can make the most impact.

The study examines these efforts in four main sections. First it focuses on organizations' experiences in the design and mechanics of the implementation efforts. Then it looks at the products and their impacts. Next it looks at how such grants have impacted the organizations themselves. Finally, the study brings these together at the end in a conclusion and recommendations section.

Findings

Project Implementation Processes

Products and Their Impacts

Impacts on Organizational Capacities

05

Findings

Project Implementation Processes

Is data visualization possible in all political contexts?

Is there access to data and robust enough data for such products?

The majority of organizations saw the grants as an opportunity to use existing (primarily government-generated) data in a new and accessible way. Few saw the grant opportunity as an opening into a new area of focus, but rather as a chance to expand or deepen their efforts in existing areas. The outlier here was the Open Taps project, which took on water-mapping as one of its many new areas of engagement in Georgia.

Assumptions differed among organizations regarding how data collection and analysis would be managed, but generally speaking most of the processes were longer and more difficult than anticipated. Data information issues can be partially correlated with the democratic governance of the country involved, which affected access to and quality of information collected by government institutions.

Receiving information through freedom of information requests is not perfect anywhere in Central Europe, but generally speaking such requests and processes have become more routine and predictable there than in Southeast Europe or the Caucasus. In many countries of the latter region, where the political situation is still relatively volatile if not difficult, getting access to data was a problem. Organizations in Georgia, Montenegro, Macedonia, and Bosnia and Herzegovina (henceforth referred to as Bosnia) particularly noted this issue as the first of many in preparing the data. Due to drawn-out access to information processes in these countries, organizations spent more time and effort getting information than anticipated.

The fact that most organizations had track records in the particular issue area was a plus, as they could push or use “connections” to try to get access to information, but this process itself was dependent on the initiative of the organization.

Regardless of country, however, organizations from Estonia to Macedonia under-anticipated the effort needed to transform such data into “digestible” and visually useful data. Unstructured and raw data was often available only in Excel data sheets, or paper copies that required manual inputs of data. Many times this data was also not cross-comparable within the data sets, and organizations had to make decisions on how to reconcile data gaps. Overall, organizations describe considerable time delays in trying to make sense of data and prepare it for presentation. Perhaps one of the most dramatic examples was given by Transparency International Slovakia (TIS), which literally had to go through stacks of papers to understand the different expenditures and grants of the Ministry of Culture and Sport.

While the majority of organizations overcame these challenges, and found a way to reconcile the data that they had received, low data quality forced some organizations to reconsider parts of their original project design. For example, the Centre for Security Studies (CSS) in Sarajevo realized that the government’s lack of uniformity in reporting statistics meant that they would have to design their own data collection tool and that this would reduce comparative mapping possibilities.

Technical challenges

The other key challenge for organizations was the process of managing the technical product development process of their projects. While almost all had some familiarity with such technology, few if any were technical experts or had in-house expertise. They generally needed to outsource the design process, and this meant that many had a steep learning curve in taking on the management of the technical development process.

The Budapest and Belgrade meetings organized by TTF and IP during the course of the grants were frequently noted as an inspiration and aid for starting this process, but more assistance was often needed. This was sometimes provided directly by IP or other OSF staff, or later by connecting some of the projects with the Sunlight Foundation and Tactical Technology Collective (TTC) resources. Even so, the large number of times that the researchers of this study provided contacts for such support services during their interview process is just one indication of the continued need for such support.

Finding Agreement on Joint Products

Bundling of organizations that have an interest in similar topics seems to have potential, but organizations need to find common agreement on the product and its uses. In the case of TIS and the Fair Play Alliance (FPA) in Slovakia, each had slightly different ideas of what the public procurement contract database product could be and should do:

- FPA was planning to use it for more advocacy efforts around public procurement transparency.
- TIS saw the product as the base for further research into procurement practices.

Such guidance was required for basic and more advanced aspects of data visualization. For example, one organization specifically described how they needed technical input even to know how to study different programmers' bids. Another described how they sought guidance to better understand whether to "do something from scratch" as their programmer preferred, or to build upon already existing and open-source platforms.

Organizations and programmers often literally and figuratively spoke different languages, and organizations had to figure out how to mesh the policy research and advocacy world with programming thinking to create a team effort. For situations where there was a clear contractual agreement with programmers, organizations said they generally could press their visions for the projects and sites. Where the programmers were taking on the work at reduced NGO rates or more engaged as members of the teams, programmers tended to want to have more ownership over the product, and the processes were more drawn out. No organization described a situation where a product was designed contrary to their visions, but several acknowledged that the process was more challenging than they had expected.

It also took more time than most had planned. Many organizations needed project extensions of their six-month grants in order to complete the co-development process. This suggests that these types of grants generally need to have more development time built into them. They also need more flexibility to allow organizations that are acquiring new skills opportunities to modify as needed.

For organizations that were “matched” and worked with external programmers, the challenges of translating similar if different visions to the product and then communicating this to the programmers tended to be even greater. Here it was not just working with programmers, but also reconciling organizational ideas of the product between themselves. Each had slightly different plans for how to use the product, how it reflected their research efforts, and how advocacy for such efforts could go forward individually or as a joint project.

Presumably these are all part of the normal learning process in any design and development effort, but in cases with relatively tight budgets and timelines, such implementation processes appear to have become more fraught than organizations’ more “traditional” policy research product development efforts. Organizations tended to praise the learning potential from such experiences, but many, particularly those engaged in database development and visualization, also now approach the idea of doing new products with a more realistic set of expectations.

For many, this cluster of challenges is also where a more active community of practice would be useful. Organizations envisioned different gains from such communities. Some specifically wanted ways to learn from each other or to offer their own learning experience. This would include basic sharing of “which programmers in my country or region ‘get it,’” or how another organization chose to tackle a particular design dilemma. Organizations were keen to know what others were doing.

Yet few if any of the projects that had similar foci – municipal capacities/budgeting, etc. – knew much about the other projects or the processes each had undergone. TTF and IP did provide email contacts for organizations and product links through a community website provided by a third-party mentoring organization, but these do not appear to have been actively used (likely partly due to confusion surrounding the role of this site and the mentor organization). Despite this, the feedback suggests that such a sharing and community facilitation process is important to and desired by grantees.

- INESS’s efforts to create a toolkit approach for its Price of the State (POS) budget visualization product appears to be a good way to cover many of the challenges found in the project implementation process. Thematically INESS has the expertise to mentor organizations in how to apply such a tool in their own contexts, offering community support. Second, they provide a platform and guidance on modifying it to the country context, as well as ideas on outreach use.

- The process also has a positive “give-and-take” dimension, as INESS has an interest in using other organizations’ data sets themselves for their own comparative research efforts.

Such an active community might also help to minimize the common pitfall of creating products in a relative vacuum. Only a few organizations informed others of the development process. While domestic competition amongst organizations is understandable, few did consultations to ensure that their product was indeed unique and needed. The most dramatic example of this may be the Parliamentary Searchlight project to follow legislative processes that was developed by one organization in Bosnia, while a “virtual parliament” tool was in development by another organization in the same country. Both products are in the end complementary, but the fact that neither organization nor their different donors knew of the others’ initiatives suggests that such efforts could have very easily been duplicative and reinforces the importance of building a community of practice for both donors and partners.

Products also were often developed without input from intended users and missing a human-centric design approach. Outside of the two projects that were implemented jointly, only one or two organizations consulted with those that they thought would use the resource. To organizations’ credit, the learning curve in this consultation process appears to be upward. Many of the organizations described later consultation and feedback processes after the product was launched, and/or they began to see why such processes are necessary. Several projects specifically have solicited user involvement feedback, like the municipal capacities project in Estonia and the Parliament Searchlight project in Bosnia.

Community of Practice wish list:

- It can be online, but needs to be frequently interactive.
- It needs both thematic and technical levels with facilitation by experts in both areas.
- It needs different opportunities for sharing, gathering, comparing, and using the tools.

Communications and outreach development process

Organizations' communications and outreach development process also merits attention. Organizations describe this process differently, but what stands out is learning how to use the product to communicate the data story in different and innovative ways. Even those research groups quite comfortable and experienced with advocacy described the challenge of thinking differently about how to use and communicate about such products. Many in the end resorted to their "traditional" forms of outreach such as press conferences. Nonetheless, a number did seek out new ways to communicate their products. For some it was figuring out how to make something go "viral" and to use the technology side of outreach. For example, Reactor in Macedonia is considering how to design a phone application for their public spaces product. For others it was figuring out how to design clearer take-away messages and use them in additional ways than their traditional media outreach to journalists. These experiences highlight the potential that such communications outreach can play, but also the need many have to learn how to integrate communications planning into the project design process.

"The projects initiated processes of learning how to think about things in a new way… in policy research design, consultation, and advocacy"

Trains, planes and taxis
—
Meetings in Budapest, Bratislava, Sarajevo, and Skopje.

Findings

Products and Their Impacts

“Products were often developed in a suspended sense of time and place and for an audience that had not contributed to its development.”

What makes a product successful is partly a relative exercise given the variety of products developed. At a basic level, if a product managed to be developed, function as anticipated, be available/used beyond the grant time, and provide a visualization service previously not present, then the product can be considered somewhat successful. In this case, we see that all but one of the products fulfil these criteria.

Yet part of the objectives for such products is that they are used and that this use stimulates the policy sphere in some way. Here findings suggest that actual rate of use is quite low. Most of the projects registered only slight interest among their target audiences.
Generally speaking there was an interest in the project when it was launched and when there was a related news event. However, most user statistics graphs showed flat line use.

Level of use was somewhat correlated with the level of interactive features within the project. Those projects where the audience could do unique searches or engage with the data had somewhat higher use, but these levels of interaction were not a guarantee for greater use. According to the analytics data for the sites, many – even interactive sites – only had a handful of visits per month.

This low use is somewhat indicative of advocacy application and impact, but not necessarily the full story. The link between product use and advocacy impact of products is perhaps the most complex component of the grant objectives to untangle.

This is partly due to the fact that use and advocacy effects take time beyond the grant to appear, but also due to the fact that most products had multiple target audiences with multiple anticipated uses, diffuse advocacy objectives, and different levels of dynamism in terms of the regularity of updated information.

Overall, advocacy application and impacts appear to be mixed. Most organizations could describe and link the effects of their product with some level of advocacy impact, and this should be recognized. General public awareness of issue concerns topped the set of advocacy gains, but there were also clear links between such products and policy processes that are dynamic and proceeding towards more favorable performance. For example, INEKO in Slovakia was able to link its efforts to legislation on new criteria for collecting data on municipal budgeting. There are also other unanticipated advocacy outcomes in relation to data classification and management as well as the use of data in educational settings.

"What is the link between audience use and advocacy objectives?."

Having said that, there is considerable space for refining the use, audiences, and advocacy impacts of the products. Many organizations' selection of audiences and anticipated use of their products appeared a bit haphazard. Most organizations had a broad or multi-level set of anticipated users and linked this to potential advocacy impact.

This is perhaps why most only had a general idea of how their products were being used and received. Some could cite media or official feedback or Google analytics, but the theories of change that they proposed in their initial project ideas were often not sufficiently elaborated and consequently only partially realized. Timing is partly at issue here, as most such efforts require longer than the short time of the project or even the six months or year after the project. Also much of the public-level audience focus was on general awareness-raising, which is a legitimate advocacy objective but difficult to track and capture in the short term.

Still, the causes are likely more than just timing and audience accuracy, but reflect the underlying assumptions made when designing and carrying out such projects. Namely, a basic assumption of the organizations (and likely to some extent the donors) appears to be that the development of a product that depicts a problem, the use of the product by an audience, and the advocacy objectives are positively correlated. Few would suggest that this is a direct correlation of causation, but most consider that active use of a site or product suggests a larger likelihood of addressing or reaching advocacy objectives.

On one level this assumption stands up. Active use in some situations was also linked to realized or partially realized advocacy objectives. For example, high usage rates of Praxis' visualization of local government indicators in Estonia helped generate the public discussion envisioned in their advocacy strategy. However, the connections become more problematic when considering multi-target audiences and broad advocacy objectives. If the correlation at the beginning was already sketchy, then linking it becomes more difficult.

Does “matching” organizations result in more advocacy outputs and impacts?

There are two experiments within this portfolio of matching organizations around similar issue areas, in Estonia and Slovakia, respectively.

- Neither example has demonstrated more value-for-money in advocacy approach or output. Each organization has taken on advocacy efforts primarily in its priority areas or its comfort zone, and a certain clustering effect of efforts and therefore effects has not really materialized.
- Expecting such an impact might be unrealistic given that the organizations were matched to implement the project, not necessarily for their advocacy uses. Still, such experiences suggest a potential for heightened advocacy impact if more deliberately strategized as part of product development.

Some Political Context Considerations:

- Is there freedom of access to information legislation and is it enforced?
- Is government-generated data considered reliable?
- Are there established channels of consultation between NGOs and government officials?
- Are there cases where or perception that citizenry/civil organizations/media have influenced government policy-making?

On another level, this basic assumption underpinning the theory of change is challenged when factoring in how political context can limit the advocacy effects of use, no matter the usage rate. Broadly speaking, for countries where interactive use was targeted and/or the users had or felt they had clear ways to use the information, such targeting was more or less accurate. In less hospitable contexts or with more sensitive topics, the logic chain is challenged.

For example, in Slovakia organizations described their user audiences in different projects and assumptions about these users in terms of how they could use the information. Evidence given during the interviews suggests that such targeting was more or less effective at least in relation to municipal budgets. Here the citizenry and the intermediary actors – such as journalists and or policy makers – were seen as both able to be engaged and able to take action with this information. This formula was possible as there was a contextual push and pull: users could see the data and demand accountability and public officials felt enough pressure (relatively speaking) to react to such pressure and to change their performance.

At the same time, this also assumes that those who are targeted as user groups have a clear interest in demanding change. Several projects in Slovakia show that user group motivations might need to be more critically reviewed, as targeted user groups in the end had less interest in using the products to change something than designers had anticipated.

As an illustration, the visualizing of sports and cultural data as done by TIS was put forward in a way that was useable, but where there was not a clear group of actors that actually had an interest in using it. Those that could use it – particularly groups within the two funding pots for sports and culture – were keen to preserve their particular funding streams and did not appear to be motivated to ask more questions about the overall funding rationale. Similarly, even with TIS' visualization of public procurement efforts, firms competing for contracts, which were thought to be one of the user groups that would be most interested, did not become frequent users of the site. Rather it was those investigating specific contracts or concerned citizens with either a "crusading" or "video-gaming'" motivation that used it the most.

Targeting audiences is a learning process, and the organizations mostly appear to recognize that this process needs to be more intentional and critical from the beginning.

Also as shown in Slovakia, government interest in such data visualization efforts appears to be varied. Government officials generally were pleased with what they saw as collaborative efforts by NGOs that, if not making their jobs easier, at least made them more transparent. Yet much of the budget-related data is already available in useful formats for government policy-makers; hence there was less value-added from visualizing such data than anticipated, at least for policy-makers.

In countries with less democratic governance, the logic chain of development-use-impact appears to be even more problematic. Access to government-generated information is one aspect, because these efforts are inherently more difficult without reliable information. But what stands out even more is the ability of citizens – and their perception of their ability – to hold governments accountable. The state budget visualization in Macedonia is a good tool, for example, but it is difficult to imagine that it can live up to its user and advocacy expectations. The site serves a purpose and is a resource, yet overall use is not what was anticipated. One reason appears to be that the user's perception of his/her ability to affect change with this use is low in the Macedonian political context. Despite users' motivation, there is apparently not enough sense that engagement can have much impact on policy. The tools might indeed provide an impetus for changing these dynamics, but contextual limitations need to be realistically assessed. The fundamental assumption behind data visualization projects likely will play out differently in Estonia or Slovakia than in Macedonia.

Another key component of the logic chain is the role that intermediaries (here understood as policy-makers, journalists, and NGOs) might play in advocacy efforts. Yet when examining how organizations have shared, encouraged, or worked with these intermediaries, they have played a smaller role than many anticipated.

On the one hand, in situations where organizations were in early consultation with government officials and worked with them, these officials proved to be advocates for their efforts. Journalists' use in particular, however, was less than anticipated. Even in cases where journalists were "fed" data to improve stories, they often did not use it. Reasons varied, but most organizations attributed lack of coverage to media that are not yet ready for or comfortable with "data journalism." Journalists do not have the skills to work with data, and editors do not demand such evidence for stories that are published. This is true for countries such as Hungary or Slovakia as well as for Bosnia and Macedonia.

Similarly, use by other NGOs has been less than anticipated and has done little to expand the potential advocacy impacts. For example, the Open Taps project anticipated that domestic ecological partners would be able to make more use of the data for their own work, but there was little response from these organizations. Others noted a flurry of media or NGO attention with the launch of the product, but little use of the product by these intermediaries after the initial euphoria. Part of this might be resolved by having more formalized cooperation amongst organizations, but part of it is also likely due to general inexperience in utilizing data visualization products and tools.

Regardless of the type of intermediary, estimates of audiences' abilities to digest the information presented appeared to be overly optimistic. Even in the most Internet-savvy countries like Estonia, potential user audiences are often just as unclear about what type of information they need as the designers of such products. Whether it is the general public or a more policy-focused audience, few organizations (assuming they did consult with or get feedback from their target groups) found audiences that could clearly articulate what they needed or how they would use such products. This then suggests that having a human-centric design process also means building the capacities of audiences to use and articulate how they would like to use data visualization products.

The relative dynamism, meaning the frequency or volume of updates, of a data visualization tool also appears to be factor of product use and hence advocacy potential. This was partly dependent on the nature of the data. Annual data publication and statistics on municipal finances are by definition less dynamic than, for instance, daily updates on public procurement contracts. Dynamism was also dependent on how the organizations got the data. Some had data sources which could be programmed for automatic updates. Others were required to redo at least part of the arduous initial data collection process to make meaningful updates. Yet many organizations had not thought through these implications before developing their sites.

Particularly with data sets and tools that were less dynamic, organizations have been harder-pressed to keep such tools used and interesting. Some have supplemented the information with timely update feeds, others with articles, blogs, or other ways to keep the tools current. Most of the sites have some type of additional information posted in regular intervals, but the overall dynamism of the sites with annual data has been difficult to improve.

It is not necessarily difficult to find a way to take a topical event and link it to the products. But these opportunities are partly limited by organizations' government relations and communications profiles. Even if a product receives a spike in use due to elections or another event, it might not be in an organization's core interest to use it to generate public advocacy efforts if it, for example, mostly relies on its research and informal consultation with government officials; this appears to be even more the case when the issue area is considered politically sensitive and the organization is attempting to keep a balanced profile in a difficult political climate.

Advocacy and Funding

- Insufficient funds for more comprehensive advocacy outreach and continuation also appear to be part of the equation for some organizations.
- Most organizations had built in some modest type of advocacy costs, but a number of organizations noted that they would need to raise more funds to do the further advocacy needed to take advantage of the products.
- This suggests that both donors and their partners need to be a bit more clear-eyed in their estimates of what is advocacy effort is required to take advantage of the different products developed.

Findings

Impacts on Organizational Capacities

Organizational impacts are considered both in terms of specific skills acquired and how the organization took on the data visualization development within its organization. Across the board the learning outcomes were clear: organizations were able to identify improved capacities in relation to thinking, planning, and taking on visualization of their data and research. For many the process was more challenging than they had anticipated, and took longer, but helped those with some level of technology interest if not skills become versed in some aspects of programming

The learning curve partly depended on how the organizations managed the projects, whether in-house or more commonly with external technical cooperation. Even in cases where organizations “hired out” the programming effort, most quickly saw that they would have to give more attention to the development process due to the simple fact that researchers and programmers think differently about the same issues. Thus most organizations were forced to learn more than they had anticipated about the actual product development

That being said, most also felt that programming should remain a cooperative and external effort. Few foresaw the need or capacity to maintain this expertise in-house. Nor did the grants anticipate or encourage such developments. But what is significant is that many organizations were introduced to the development process, gained some experience in it, and generally speaking appear likely to continue the specific product and/or apply some of the learning to other aspects of their work. The motivations for such efforts are varied, but worth examining in some detail so as also to understand how data visualization can affect organizational development and sustainability.

Organizations saw the data visualization grant as a tool to:

- To have a useful data source for their own research
- To build their expertise brand
- To “shake things up

The organizations surveyed are already somewhat of a select group in that they have a certain amount of experience in their policy research or issue area and also have the awareness that presenting this information in useable ways is important. Each organization has its specific reasons for how and why it applied for the data visualization grant, but for the most part, the organizations saw the project as an opportunity or challenge to further their efforts in a particular issue area, and to do this in a new way. As one organization recounted, "We like numbers, but we realize that others are not so comfortable with them." Or as another said, "We wanted a light approach to heavy topics." Or as a third bluntly put it, "we simply had a desire to 'shake things up.'" However, there was still a significant learning curve for many of the organizations.

Brand building or maintenance was a key motivation for organizations.

How organizations use the products provides some insights into the relative impact such products have on the organizations. A good number of organizations alluded to the fact that the building of the product was first and foremost useful for them as a data source. For some, this was indeed the motivation behind a particular product's creation. For example, Analitika in Bosnia described their frustration in trying frequently to gather data for policy research on municipalities. Putting all the available data together in one place on their site provided a means for accessibility of data, and they subsequently have used their own site to facilitate research.

Similarly, Institute Alternative in Montenegro described how they wanted to put together the data as a way to assist their own research efforts and as a way to build increased "value" for their efforts and competency in municipal budgeting and planning issues. As they said, "Once the officials see and use our site, it inspires more confidence that we have expertise in these areas and creates more space for us both to do more and to make the site do more on different levels." Others were more pragmatic. As one organization reflected, "I don't know if it changed anything, but it was a good PR tool and [good] for engaging with donors.

Building a "brand" and capturing market share are both terms more commonly used in the business world than in think tanks, but they are beginning to find a place in the latter. As policy researchers search for the magic formula for policy relevancy and financial sustainability, some have begun to realize that such products can be key tools in widening their audiences and potential supporters. It is telling that both young and established organizations described such strategies in similar ways. And although this is a select group, these results do suggest that data visualization efforts are not just about the products and their potential effects. They are inherently connected to how such organizations can build and maintain their efforts as policy institutes throughout the regions covered. This in turn suggests that TTF and IP's support is about more than creating an innovative product, but rather is inherently linked to its larger strategy for supporting policy institute growth and sustainability in the Europe and Eurasia region.

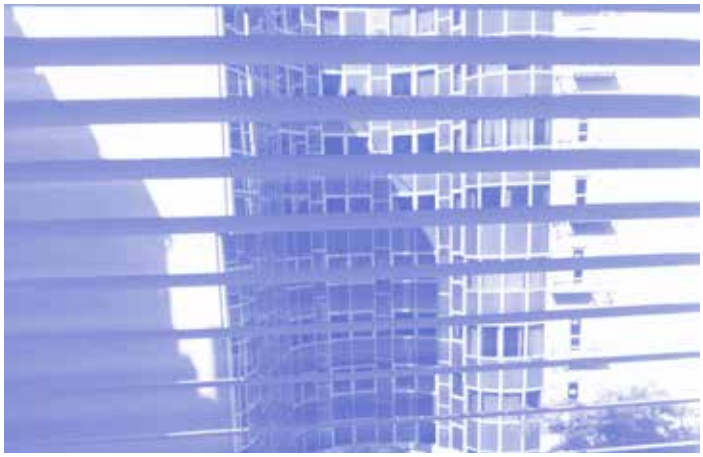
How the organization intends to maintain and or further the product also provides insights into its relative worth and usefulness to an organization. Sustainability strategies were put forward from the proposal stage, which already is a good sign that organizations are thinking about the "what next" beyond the funding cycle. The level of detail and strategies for such sustainability, however, differed considerably.

Some saw sustainability inherently linked with their own pursuit of the issue area. For organizations that closely aligned branding of the organization with the product, it was primarily seen as a component of organizational offerings and a means to further work in an issue area. Here organizations primarily, but not always, saw an interest and had planned a strategy for maintaining the sites. In some cases, they had also used the site as a platform to add new levels of data and were seeking these funds from others.

However, even for organizations that have experience and are already maintaining one or more data visualization products, the resources for such efforts are not limitless. As one organization said, "We would think carefully about taking on yet another project, as we are unclear how we can continue to have a commitment to our two previous and now this ongoing project."

For others, the experimental nature of the effort in both design and user groups meant that they were uncertain how to take the effort beyond the product completion. Maintenance was not necessarily the issue, as basic maintenance could be done without a lot of resources. Concerns were rather more about how to continue to find ways to pique the interest of users in order to make the site viable, as well as how to manage and strategize the next natural stage of the project. Both organizations that developed the public procurement contract site in Slovakia, for example, feel the need to "do something more with the site" but are not sure how to do this either together or separately, or how to finance this.

Ultimately, such sustainability is also dependent on the natural life of projects, and several projects in this portfolio were done to capture a certain amount of attention at a particular time or policy opportunity. In such cases, what is perhaps most interesting to consider is not sustainability per se, but how the organizations have applied parts of the products or learning acquired through the products to new efforts. The Kurt Lewin Foundation's 100 Poorest project did not live much beyond its debut. Lessons learned in how to combine street messaging and online messaging, however, were transferred to the next set of efforts undertaken by the organization. Specifically, they described how their work in one of the cities of Hungary on minority issues benefitted from the project. Jumpstart Georgia's Open Taps experience shows a project where many lessons were learned about design and data possibilities, and their follow-on efforts on different topics in Georgia reflected these lessons.



Conclusion

OSF TTF and IP have worked with a diverse set of policy research organizations to improve their use of data visualization tools. Through this process, most organizations learned something about data visualization, became proponents of data visualization, and were able to develop and use their products to move a policy goal forward. These results are significant and should be recognized as a solid first step towards building up a more comprehensive data visualization support program.

Still, the fact that most organizations can show progress in most of the three objective areas does not mean that all three areas had equal success. This first round of efforts primarily familiarized organizations with the realities of developing and using data visualization tools.

Having more realistic understandings of how and when to use these tools, organizations can now focus more attention on how to use them more effectively. More focused user targeting and active advocacy use, in particular, are areas where many still lack a clear strategy for meshing the technology and the organization's passion of the issue in a way that contributes to policy discussions and potential change. Making and keeping these tools relevant and alive is also an area whether further tinkering and experimentation is needed.

This is clearly a learning process for grantees and donors alike. With this in mind, the following recommendations are put forward for donors in considering how to support and manage such data visualization efforts.

Recommendations

Design realistic project timeframes and support frameworks for data visualization endeavors: Particularly for first-time developers, data visualization takes longer than other policy research development efforts, usually needs more facilitated effort than might be anticipated, and often requires focused technical and funding assistance for advocacy and outreach efforts. Data visualization grants, consequently, cannot be approached as either classic policy research or advocacy grants.

Plan for specific technical support and facilitation as part of the grant management: What is needed was described in different ways, but three main types of assistance or support were noted:

- Having someone from the donor shepherd and facilitate the work of policy institutes with data technical specialists and programmers;
- Sharing of thematic innovation inventions amongst communities of interest;
- Support in designing and/or linking the products to more dynamic and product-appropriate advocacy and outreach efforts.

Set basic criteria for product development planning and implementation: This should include a survey of already existing platforms and their possible adaptation, a commitment to open-source information if possible, a process of co-creation consultation, and a plan for refreshing and sustainability of the product. Some key criteria to consider as part of this checklist include the needs to:

- Understand the market, i.e., what is out there locally and internationally, especially that is borrowable;
- Focus on human-centric design principles and processes, beginning with audience definition and consultation;
- Identify and work with formal or informal communities of practice;
- Create a plan for updating and sustaining the product.

Emphasize the need to match use and advocacy objectives: Links between product design, types of use, user group, and advocacy objectives need to be clearly articulated. Here things to keep in mind include the need to:

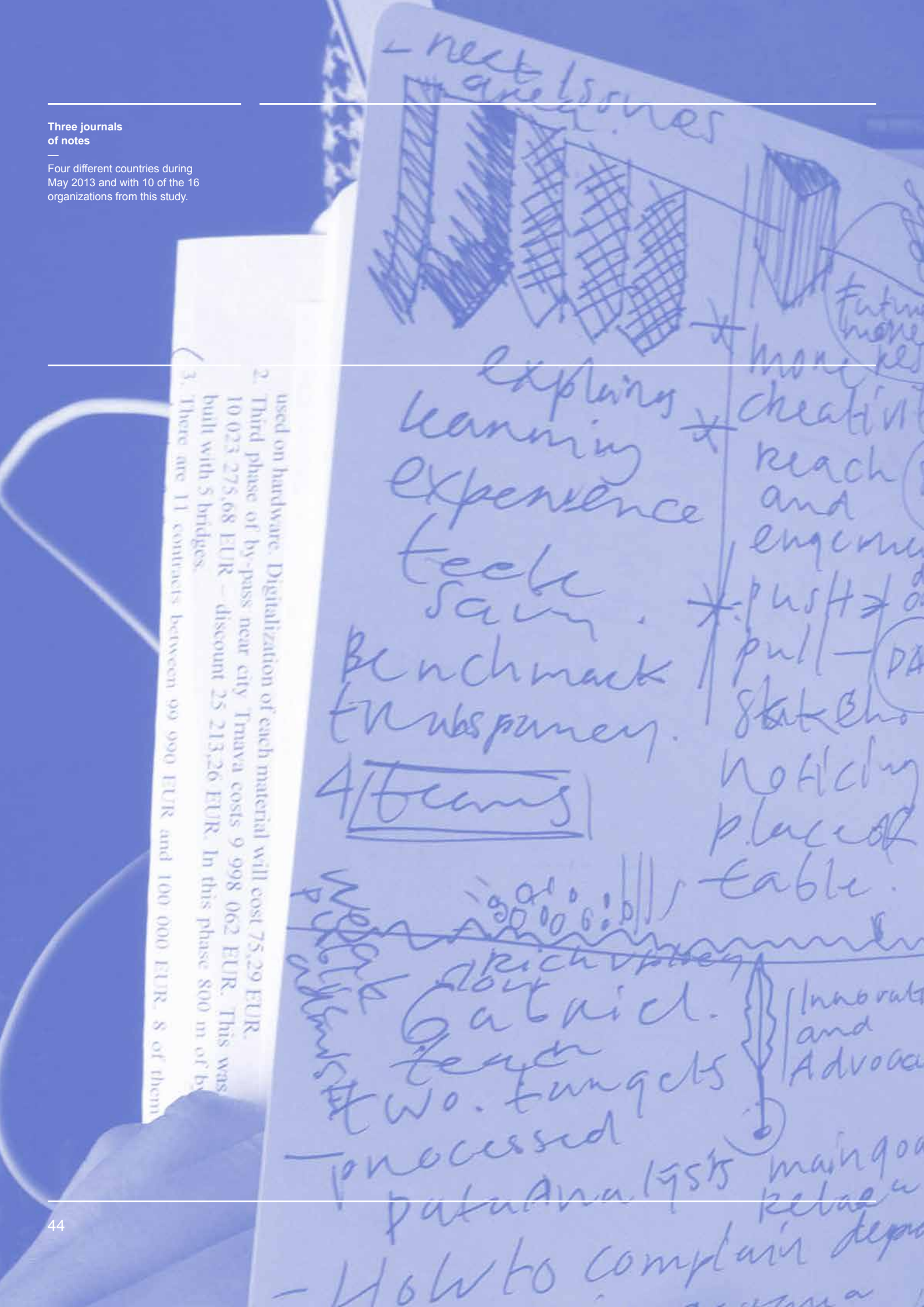
- Articulate a step-by-step theory of change that is relevant to political context; this may mean scaling back expectations and/or anticipating incremental successes;
- Design a focused communications plan based on benchmarked metrics and realistic goals.

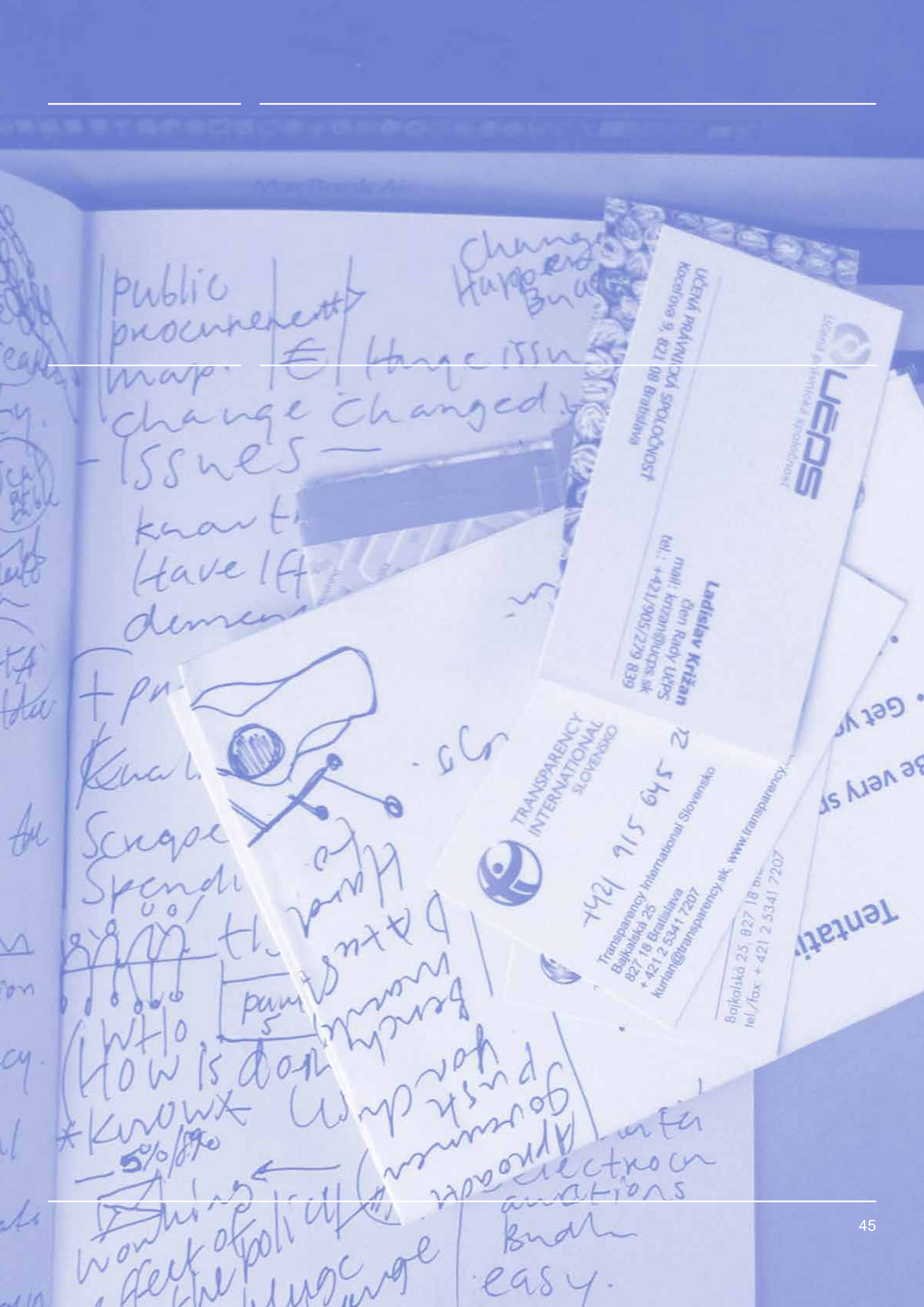
Encourage organizations to consider how product development will impact institutional capacities, interests, and development: Data visualization projects often require more effort on both sides than anticipated, and in this case, it would be useful to encourage grantees to articulate both their objective with the specific product, and how this could impact their organizational capacities and development.

Three journals of notes

—

Four different countries during May 2013 and with 10 of the 16 organizations from this study.




TRANSPARENCY INTERNATIONAL SLOVENSKO
Ladislav Križan

A Appendix

List of Informants
—

Field Visits: May 14-May 24

Organisations and other individuals cooperating with organizations (if programmers, donors, governments etc.)

Budapest

1 Masa Djordjevic, TTF

2 Andrej Nosko and Janet Haven, TTF and IP

3 Gyorgyi Ligeti and Katalin Széger - Education Program Manager - Kurt Lewin Foundation

4 Petra Reszekto, Balazs Varadi and Timea Suto , Bupapest Institute

5 Gabriella Horn, Journalist

Bratislava

6 Richard Durana and Radovan Durana (via Skype at INESS), INESS

7 Peter Golias, INEKO

8 Matej Tunega, Peter Klatik (INEKO technical staff)

9 Eva Vozarova and Zuzana Wienk, Fair Play Alliance and Matej Kurian, Transparency International Slovakia

10 Martin Filko, Chief Economist and Director, Institute for Financial Policy, Ministry of Finance

11 Matej Kurian and Gabriel Sipos, Transparency International Slovakia

12 Ladislav Krizan, former Sports Dept at Ministry of Edu/now at Ministry of Justice

13 Eva Vozárová, Fair Play Alliance, Managing technology projects of the Fair-play Alliance. Michal Barla, Ján Suchal from Minio.sk contractors for programming.

Sarajevo

14 Tarik Jusic, Mirna Jusic, and Dženana Hrlović – Analitika

15 Selma Sijercic, USAID

16 Denis Hadzovic, CSS

17 Emsad Dizdarevic, Alma Kovacevic, CSS

18 Ines Bamburac, MediaCentar - used tooling in workshop

Skopje

19 Aleksandar Kareski, programmer that worked for CEA

20 Marjan Nikolov and Hristijan Risteski, CEA

21 Ida Protuger, journalist

22 Damjan Cingarski, Sector for Urban Development, Central Municipality, Skopje

23 Risto Avramovski, Tamara Atanasoska , and Ana Risteska: Reactor

24 Slobodan Velevski, Department for Urban Development, Faculty of Architecture

Skype (May 27-June 5)

1 Gabor Hera, KLA, Hungary

2 Marko Sosic, Institute Alternativa, Montenegro

3 Vita Terauda and Agnes Lesinska, Providius, Latvia

4 Michal Tosovsky, Otevrena Spolecnost

5 Dato Gogishvili, OMC, Jumpstart

6 Megan Latimer and Eric Barrett, OMC, Jumpstart

7 Alida Vracic, Populari, BiH

8 Hille Hinsberg, Praxis, Estonia

9 Irina Guruli, INESS / User of POS toolkit / eprc.ge

B Appendix

Sustainability Models

The sustainability of products is considerably varied. Sustainability strategies can be described in three main categories: organization maintenance and updating; finding partners to care for or host the site; and "experimenting as they go" with proving the worth of the site and finding new sponsors and partners.

Some products were from the outset self-sufficient due to automation of the data-collecting process to scrape and harvest updates, leaving minimal maintenance requirements.

Others depended on government interest for future hosting and support opportunities. Here products that were co-designed with the government had a better chance of government support. This was also dependent on government interest and ability to carry out data visualization projects. In more difficult contexts like Macedonia or Bosnia, government hosting of information has the added challenge of data validity. While these projects also rely on government data, they tend to play a clearer watch-dog role as putting data together in a clear and comprehensive way can often show gaps and problems in government performance. Unsurprisingly, organizations in these countries did not see partnership with government per se as a sustainability option for their projects. Either institutions were considered too weak (Bosnia), or were seen as having mixed interests (Macedonia) in hosting.

The Macedonia example, however, also illustrates the need to take every case separately and to consider possibilities for partnership with different levels of government. Officials in the local Skopje Center Municipality saw Reactor's urban visualization efforts as useful to them and something that they could eventually take over. In this case, "a pocket of partnership" was possible and indeed useful to both sides even as the national-level government appeared less open to such cooperation.

A slightly different context for partnership was described for the Czech Republic and Montenegro. In both cases, the government agencies were described as generally welcoming and supportive of the data visualization efforts, namely crime statistics and municipal budgets. However both organizations also noted that government support was partly if not mostly predicated on the fact that the government did not have to commit its own resources to the effort and that the data itself was from the government and not something that might be critical of the government performance. The partnership in this context was in appearance only, and the ability of organizations to count on specific agencies for concrete future hosting or other maintenance support is questionable, at least in the near term.

The third model of sustainability, "experimenting as they go," is still in process. For some of these products, hopes that media outlets would host have been disappointing. In Hungary for example, media outlets did not have much interest in hosting budget data sites; in contrast in Slovakia, one of the daily newspapers saw the hosting of such data as useful for its own website and brand.

There is not one model of sustainability. Rather as these descriptions illustrate, sustainability possibilities are also partially dependent on country context and relative appetite demonstrated either by the government or public for such products.

C Appendix

Advocacy Process "By-Products:" Changing Government Crime Data Classification, Creating a Pedagogical Tool

Categorization and collection of data processes is one area of advocacy that appears to have been an unintentional yet important contribution to the issue areas. In a handful of situations, organizations describe the often painful process of reconciling different or conflicting data into useable data sets. Sometimes the process was literally manual entry from stacks of papers; other times it was trying to find common points of comparison across quite elaborate databases designed with institutions and reporting in mind, not use by citizens and others. Through these processes, a number of organizations found both new ways to consider data classifications and ways to clean up the data to the point that government offices can also recognize the merits of reformatting or classifying the data.

For example, in attempting to get the crime data in the Czech Republic, the organization realized that crime data was described according to which police station was responsible for a region, not with more specific data on location. Authorities are apparently slowly changing to a GPS-based reporting system, but the project has prompted more attention to this problem or at least encouraged ways to better present such data to the public.

In another example, the process of collecting crime data in Bosnia resulted in clear policy advice to the ministry, which is now considering how to better bring together crime data. These were not the planned advocacy outputs per se, but they are value-added benefits of the projects and can be recognized as having some policy impact.

Another area of impact that received more traction than anticipated was how such projects could impact educational efforts in different countries. In some cases, like with Budapest Institute, the educational focus was intentional, but in others the use of the products was seen as a positive spillover. Even with Budapest Institute, the extent to which the educational focus of the product developed surprised the organization. Despite the difficulties of working with different high schools, they described a situation where the visualization of budget data and uses of this for specifically designed curricula have become a key way to continue and expand the reach of the projects. This has spurred potential cooperation between the organization and pedagogical organizations and institutes for combined efforts.

The educational effect was less intentional in other situations, but nonetheless appears to have had significance. Use of the products by leaders or staff of the organizations in their teaching efforts at local universities – for example as in the case of CEA in Macedonia or Analitika in Bosnia – brought the information to different audiences. Such interactions clearly are part of a mid- to long-term effect, but they are useful to consider as part of how short- and longer-term uses of such products can be designed and anticipated.

D Appendix

List of project Urls

Organization, Project Name and Website of Mockup (as of July 30, 2013)

Analitika - Center for Social Research (Bosnia and Herzegovina)
My Place (Moje Mjesto): Local Governance Data Reform Project
http://www.mojemjesto.ba/en

Budapest Institute
The Visualization of Hungarian Budget Data
http://www.amipenzunk.hu/#/~/koltsegvetesi-kiadasok
http://content.openspending.org/blog/2012/07/27/budapest-institute.html

A Racionalis Kozeletert Alapitvany (ARKE)
19-Visualizing European Structural Funds in Hungary
http://193.6.38.198:8080/~sferee/civilmo/

Center for Public Policy Providus (Latvia)
Pursuing the right to fair trial: Mapping the court overload
https://tiesas.lv/ienakt?returnUrl=/

Kurt Lewin Foundation (Hungary)
'100 Poorest' database: provision and communication of the data available on disadvantaged social groups in Hungary"
http://www.kla.hu/100poorestmockup/

Otevrena spolecnost, o.p.s.
Increasing police accountability through smart display of crime data
http://www.mapakriminality.cz

Institute for Economic and Social Reforms (INEKO)
Monitoring financial health of Slovak municipalities
http://obce.ineko.sk/

Institute of Economic and Social Studies (INESS)
The price of the state - a kit for foreign partners
http://eng.cenastatu.sk/

Praxis Center for Policy Studies
Visualizing local government indicators
http://www.kodupilt.ee/

Fair Play Alliance & Transparency International Slovakia (a)GREED
http://www.otvorenezmluvy.sk

PoPuLaRi - Center for Socio-Economic Studies
The Parliament Searchlight
searchlight.populari.org

Center for Security Studies (CSS) - Bosnia and Herzegovina
Armed Violence and Injury Monitoring System/Crime Observatories in Bosnia and Herzego
http://www.scribd.com/doc/64731245/CSS-Interactive-Map-of-Legal-Weapons-in-BiH

Reactor - Research in Action
Public spaces in Skopje: Transformation, Urbanization and Misuse
http://skopjeraste.mk/

Center for Economic Analyses (Macedonia)
Enhancing Evidence Based Advocacy for the Budget of Macedonia
https://pidoco.com/rabbit/api/prototypes/42033/pages/page0001.xhtml?mode=plain&api_key=gJVaP7H6ZFTrLPNX3RMrnBHYgtIsTF5lZ8NBow07

Institute Alternative
MunicInformation Programal Budget Monitoring/Montenegro
http://budzet.me/o-projektu

Open Maps Caucasus (OMC-J) NGO
15-Open Taps/Georgia
[URL inactive]

Transparency International Slovakia (TIS) (Slovakia)
State Culture and Sports Grants Database Visualization Slovakia
http://granty.transparency.sk/en/

OPEN SOCIETY
FOUNDATIONS