E06: Open Data – Yet Another Buzzword or a Resource for Global Response to Climate Change

O: The best we can hope for is building our future with the best possible choices which are based on the information available at the time.

So what you actually need is the right information at the right time or to be more precise, the right data. How do you pronounce this word by the way? Who cares as long as it's accurate and helpful? I can tell you - data can change lives.

Take my example, back in 2016, I was a freelancer and enrolled in master studies at my university, when one girl gave me a call on a friday afternoon, asking me to join her team in Belgrade Open School. At the time they were collecting far too many data for research in one project and they needed extra pair of hands. I accepted it and fast forward to the future - here I am working at Belgrade Open School for almost four years in a row. Who could have predicted this, definitely not me. Well, I didn't quite have the right data, I just got the right call - about the data. See, I told you it's all about the data. And just when you thought it could not get more personal, you were wrong. That girl, who gave me a call on that friday afternoon and made me come to Belgrade Open Schcool and join her research, she's here with us today. I am pleased to welcome Sonja Arizanović, a fellow member BOS alumni network, currently working as project coordinator at UNDP Serbia, working on- you guessed it - open data. Since we obviously love working together, we recently worked on applying the open data in the field of environment, so we worked on expanding the citizens, air quality monitoring network we'll get to them later, of course, stay tuned.

S: When you start with some activity or task you're given, do you ever wonder if you can make the process better, faster and with greater outcome for you, personally, or for the beneficiaries of your work? If you are noding right now we are on the same page. Four years ago, I was working here in Belgrade Open School, putting all my passion into the belief that state and local authorities ought to provide us - the citizens, the information and data they possess for personal use and our own purposes or for the purpose is bigger than us, like saving lives and mitigating crisis like the one we had with the COVID-19. But the thing is: if you get the information you want, it can take you hours of digging into the documents, scanned and copied papers and you still might not be able to find what you're looking for. Does this sound frustrating? For me, it was. So is it any better way to do this? Somebody out there said - open data.

The activities focused on open data were at the beginning back then started only one year before that. So we were still unsure of its magic powers. I've started cooperating closely with the United Nations development program here in Serbia, which was the driver of this story at that time. To me it all sounded like fresh ideas for new kind of innovation in a society in every possible sector with free resources, the data we already have in our computers, sitting there locked in various PDFs and Word documents. After that. I've joined my forces in UNDP and started working for them 2 years ago, which now gives me the opportunity to sit behind the wheel and push things forward from the inside.

O: Since this entire season is about interplay between technology and climate change. So - called tech for good initiatives are, of course, the inevitable topic for us. The tech for good initiatives are using technology to address social, economic and environmental problems. Can you help us understand a bit more? What does the tech for good include and how does it apply the open data within these initiatives?

S: I can go with the definition of open data, but I don't think it's the best way to explain it. Instead, I am going to use everyday examples. Without open data, only those who are producers, owners or buyers can create products based on those datasets. So, for example, we talk about the weather forecast. Only the state agency in charge for hydrometeorology would be able to inform citizens on the wheather. They can do it either, with traditional or social media or even better a mobile app, something we are all used to. But would they develop an app? It really depends. But still it's just one player out there on the market, or just a big player who is able to buy the data and make the app. However, with the open data everyone – and I mean everyone – can make an app showing the weather forecast, and maybe you as a user would prefer another app instead of that and then developer would make some living out of that, sounds like win-win situation. This is just one small and very simple example.

Let's go on a bigger scale, let's say we want to find out what is a correlation between the weather conditions and the number of traffic accidents. Now we would need two datasets. Who is the owner? The ministry of interior and the agency for hydrometeorology. Now we can just be curious citizens or we can be an interested group of citizens wanting to propose new measures and traffic safety based on our learnings from the analysis of those data sets. Without those data available to us, you wouldn't be able to do it. With it, lives could be saved. Now imagine, if we go on jump into various datasets which we and our state produces. Crossing of those datasets, can indeed address various problems around the world. And we are coming to the purpose of technology. It's not something with purpose on its own. Its effects are driven by our choices and action. It can either do good or harm or both, at the same time. Once thriving manufacturing societies are not replaced by digital giants. And for technology to change lives for the better, it needs agenda which considers and diminishes those negative effects of its deployment. It goes both for application of artificial intelligence, data science or any other tech option we use towards our goal. Open data is just another part of that creating more opportunities for tech to do good.

O: So, let's open our further discussion by explaining the actual meaning of the term open data. What are the criteria for labeling the data open?

S: Open data needs to be machine readable, of course, to be considered is open data, free to use for any purpose, and this is a basic definition. But in order to really address the issues our society is facing today first and foremost, the data needs to be accurate. And then it needs to be up to date as much as real-time as possible. B**ut that really depends on the type of data set. It also needs to contain metadata for users to know what data set is, what does it contain and when it's going to be updated, etc. Like a description of the dataset. And beyond this basic definition, what are the other things which are important here? We can apply the rule garbage in garbage out. For example, if the employee of the pharmaceutical company uses corrupted data sets.**

Imagine how much lives can be endangered by the product that pharmaceutical company puts on the market. So if you make our decisions based on wrong data, then our decision

would be wrong as well with harmless or damaging consequences. Each one of us has been in this situation where we had the wrong information or all the information or both. How would your life decisions turn out if you would make them based on that information? So it all comes down to the source of information. For example, if we take data environment and Earth observation some of the nice sources in Europe are Copernicus, it's called Europe's eyes on Earth, then European Space Agency data and finally European data portal which contains data from most of the European countries, Serbia included.

O: Once such data is collected and analyzed, how is it used in addressing, let's say, environmental problems at global and European level?

S: Once the number and diversity of data sets around the globe started to grow fast number of use cases when significantly up. From simple analysis and visualization to the complex studies which include not only open data, but also big data and other available sources, but I must say that not all of them are equally successful in adoption within the stakeholder community. Just think about the reasons why some of the innovations get accept faster than the others even though they are equally beneficial and important. It's not only the question of technology.

We can go back in history and look at the examples of anesthesia and methods to destroy germs during the surgery. In the 1840s the first test of anesthesia were on patients and the method was quickly accepted among the medical staff. On the other hand, we can say the same for disinfection of instruments and sterilization of sponges. Sepsis infection was a great killer of surgical patients. And you would think that if somebody found a way to use chemicals to kill the germs it would be immediately accepted, but no. And you're wondering what were the reasons? Both methods were equally demanding in implementation, so, it's not that. The thing is the first one attacks the visible and immediate problem, which is the pain of the patient, and the second is seemingly invisible -germs.

So if we take this example to tech innovations, it's usually the same. Those who attack big problems, usually invisible to people, can have a longer path to the success. With open data, the simple and clean solutions are most successful. For example, various air pollution apps showing citizens the level of air pollution in the neighborhood, and I would also mention ShootHill, a United Kingdom startup which aims to inform and reduce the risk of flooding K and Trinkwasser, a German app, which shares information regarding tap water in Germany because the quality can be different depending on the region. Trinkwasser consolidates municipal data on water quality and makes it understandable for the consumer. So this kind of apps usually have biggest success in the community.

Nostalgia: When I was young, I used to be a flight attendant. Oh what fun it used to be! One day I am in New Zealand, discovering real hobbit village and breathing fresh air with your full lungs. And the next day, who knows – when you are a flight attendant the world is your oyster. Speaking of fresh air, I remember my first visit to Beijing. I was so excited to see the Great Wall of China. Unfortunately, that wasn't the first experienced I faced. There was as well red warming air pollution. Breathing the air felt like breathing the heavy smoke, and I haven't seen many people on the street, not even to mention the very limited view from the Great Wall of China. Kind of disappointed, I started wondering how much pollution is necessary for us to say it's enough, I cannot breathe honey.

S: How much open data can actually contribute to Serbia is a puzzle with many unknowns, however, having in mind fast growth of our IT sector, future possibilities for artificial

intelligence endeavours, since we have adopted the artificial intelligence development strategy in the end of last year and action plan this month, and also we have to consider the fact that we are having a recent setbacks in the level of democracy according to the Freedom House report, I would say that open data can be really important ingredient for experts cooking solutions in this areas.

O: Obviously open data brings people together or, to be more precise, encourages various stakeholders to cooperate and work together. So what are some government-led projects and initiatives in the area of environment which are utilizing open data?

S: Being at the project - Open data, open opportunities - run by the office for IT e-government and UNDP jointly and supported by the UK good governance fund and the World Bank. We have casted up wide network both in terms of activities and in terms of stakeholders, which are included. Our desire was to go from Zero to Hero. I can say that we still not a hero, but we are on that path. When it comes to environment, I would single out our work with the Serbian Agency for Environmental Protection. We have supported this institution to publish open data sets on pollen concentration, air quality, quality of water and pollutants of land and water. The first two are real time data set and have had immediate re-use. For example, Air Care app and two apps which are using pollen data, which is very important for people with Hale allergy and one of those apps is actually made by the agency, which releases those datasets, Serbian Agency for Environmental Protection. The other two data sets are mostly historical data sets and, of course, it goes without saying that in this sector is as much real time data as possible is the ideal scenario. you want to know every day if the air is polluted it. It's not like the census data, for example, and this becomes especially obvious during a time of crisis. We all remember the floods in 2014 - immediate response takes not only the muscle, so we need data for flood alerts and prediction of the landslides.

O: We started this part with talking about the government level, but let's go down to the community level. Let's talk about citizens initiatives. How can local citizens initiatives embrace open data and thus contribute to public good?

S: When it comes to the initiatives coming from the citizens, I would single out two initiatives which are dear to my heart. One is the platform *Forest and climate*, in Serbian *Šume i klima* and the other is Citizens measurement Air Quality, which you, Ogi, mentioned at the beginning of this podcast. The first plan of web application which provides information on the suitability of a forestation by three species for any location in Serbia. Its develop by an optimist, young team coming from academia Background. At the second, the project *Visible data for visible air*, which is run by the BOS, Internet Society of Serbia has a goal to engage citizens in this important issue, air quality. And to show them the power of data. Finally, once the number of measuring stations which are really easy to make and connect to the platform goes up, people will be able to add additional layer to state publish data. We can show air quality on micro locations not covered by the officially measuring stations, so I would also used the opportunity to invite you all to make your own measuring station.

O: How would you light up our listeners with some key take from this episode?

S: There are numerous ways for each one of us to find personal gain in this story. From setting up the measuring station for air quality on our balcony and sharing data among the community, which I have already mentioned, to finding our future business model and

make a living out of it. I will finnish with an example, one brilliant data scientists from the Novi Sad. She's a beginner self trained enthusiast, was a teacher of mathematics, but now works as a data analysist. Her name is Katica. On one occasion, she told me a story how she started compiling data on teachers travelling miles to their duty stations, while the schools in their home towns had a fond of classes or open positions, which they could fil in. She was personally motivated. It was a small scale research, but she wanted to show that state could spare fonds which their providing for those teachers with proper analysis and optimization of resources. But what I want to say with this story, is that each one of us have something in ourselves waiting and burning and can't be translated into the data story, and I believe that something worth exploring.

O: Fusing Futures is Belgrade Open Schools audio podcast. Members of the BOS alumni network, Sanja Arizanović, Jelena Šapić, Gordana Bojanić and myself, Ognjan Pantić took part in making this episode. Aleksa Račić and Marko Mitrović supported us by designing the sound and audio effects. If this is the place for you, where you get all the right data at the right time, don't forget to click subscribe at Apple podcast or any other application use for listening to podcasts. For more updates follow us on Instagram and Twitter.