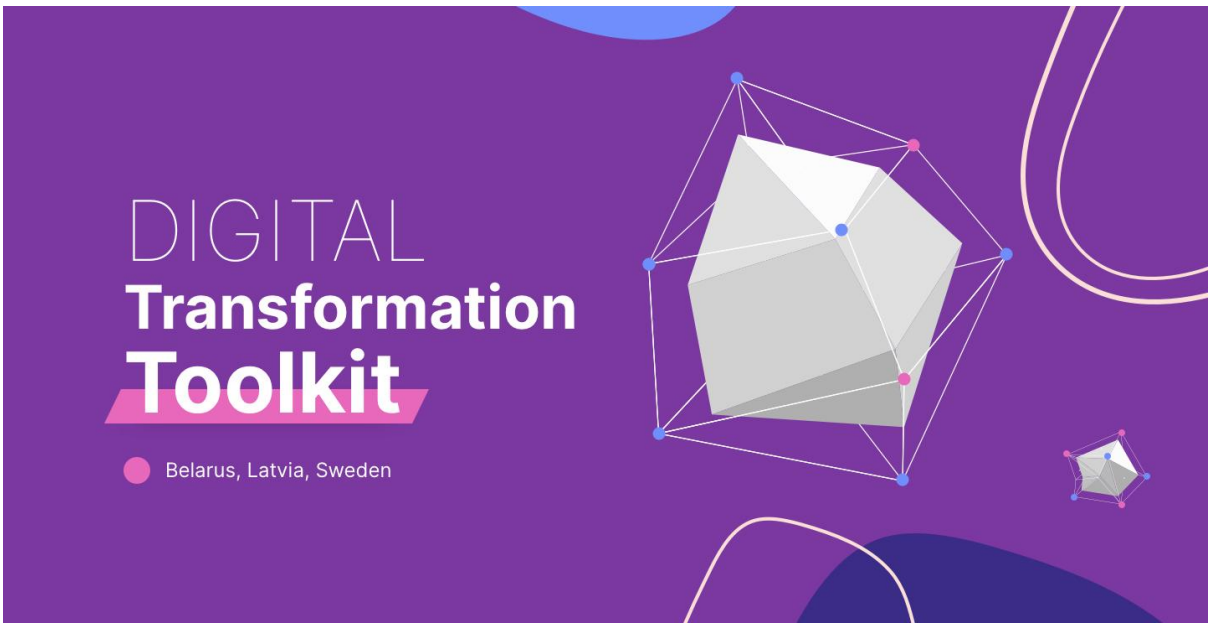


Introduction: what is the Digital Transformation Toolkit

Promises of increased public participation in decision-making through ubiquitous access to information, promoting responsible environmental practices, and coordination for a common good are behind many initiatives aiming to utilize tech for a common good. However, the fate of initiatives in the field of civic tech is often uncertain, even despite their creators' best intentions and sufficient technical savvy. Especially tricky is fostering successful citizen engagement and building productive interaction environments between different, at times conflicting societal groups. Still, some initiatives in the field do persuasively manage to learn from their mistakes and persist, becoming impressive examples of successful digital transformation. Experience from **Norden's' Open Data for Civic Participation' (ODCP) project** helped to summarize common pain points and persistent innovation and achievements in promoting civic initiatives. The cases come from three very different countries, two of which are EU member states (Latvia and Sweden) and the other one, an ex-USSR country, like Latvia, but currently in a league of its own, Belarus. The data shows how similar tools may play out differently across varying socio-political landscapes, and yet demonstrates strikingly how many commonalities there are.

Projects that are presented here span several thematic and organizational fields, from those where the public sector plays a major role to ones where entirely new digital infrastructure is created explicitly out of public sector reach. Nevertheless, in all of these projects, it is civic engagement and activation that is the end goal. The toolkit aims to tell stories of some of these cases in a structured way, emphasizing key aspects of the projects, their success, and failures, as well as the potential for further development. The focus of the toolkit is manifold, including key areas of interest such as urban phenomena, human rights, environmental campaigning, and monitoring using open data, mapping, geospatial technologies for the protection of air and water resources in Belarus, Sweden, and the Baltic region, to prepare reproducible practices and findings.

Particular attention is paid to the way a given project manages to activate citizens, especially at the intersection of digital infrastructure and society at large, i.e. how exactly is the explicit goal pursued and what technological means prove to be the most successful at delivering the most desired societal outcomes. So in the end it is the technological solutions/society interface that is the main focus of the toolkit and the goal to elucidate varying, but search for successful strategies in this regard is its organizing principle.

Who is this Toolkit for?

You will benefit from the practices and tools summarized here if you use tech tools like mobile apps, maps, online voting initiatives, and other instruments for promoting public,

transparent and responsible involvement in decision making and want to find out about their limitations and benefits. Some examples are below:

1) Public policy actors focused on improving access to information and finding out about Open Data Reuse best practices and examples of projects that build on published open datasets.
2) Civic organizers and NGO-s working on crowdsourcing apps and projects (e.g. helping citizens to monitor environmental issues through collaboration and data gathering).
3) Educators interested in finding out and teaching about the uses of technology for a lasting social effect.
4) Scholars studying online policy voting and crowdsourced legislative initiatives.
5) Tech companies and entrepreneurs interested in promoting Corporate Social responsibility practices in the Open data and civic participation sphere.

Methodology description

The digital transformation toolkit is based on the work done within the **Norden ODCP project**, which in turn involved desk-researched information about the initiatives in the field of open data, as well as other data-intensive primarily digital initiatives and projects. Other important aspects include relevant insights on optimal ways of data publication and use, as well as feedback from the open-data users and lessons learned by the initiatives' teams, such as best practices, success and failure stories, and potential for further development.

The toolkit presents several case studies, based on research of digital participation/CSO digital transformation projects, and provides an overview of key technical and organizational best and worst practices and typical mistakes. The toolkit adapted Latvian and Sweden case studies and methodologies. Aggregating and writing up best and worst practices and case studies from Belarusian, Swedish and Latvian experts. Respective teams were responsible for this preparatory work: **ManaBalss**[1] platform from Latvia, **Open Knowledge Foundation**[2] from Sweden and a community **of open data activists and researchers from Belarus**. The design of the page was produced by (***Dino Aganovic***).

[1] ManaBalss web page (https://manabalss.lv)
[2] Open Knowledge Foundation web page (https://okfn.org)

Chapter 1. Data liberation and encouraging data reuse by civil society

This chapter sums up experiences of (mostly, but not exclusively public) projects aiming to reveal and visualize various critical areas of public life using data, as well as to engage academia, NGO scene, and the general public in meaningful analysis and political action based on new data. Projects listed here required heavy involvement on the side of central governments. But behind the curtain, a lot of these would not be possible without NGO and activists' relentless lobbying and the resulting data transparency can only be fully utilized involving non-governmental actors.

The “Open Up!” project (Sweden)

Web link: www.okfn.org

What civic purpose is achieved? The project aims to reveal and visualize public procurement data with the involvement of both data suppliers and data users, as well as to increase transparency and accountability over public sector purchasing and procurement.

Short description. The “Open Up!” project[3], was run by Open Knowledge Sweden Foundation, supports the release and reuse of public procurement data in partnership with the Swedish Agency for Digital Government (DIGG). It is funded through VINNOVA’s (Sweden’s innovation agency) first-ever Civic Tech-call.

What digital tools are used? Open Up! has developed an open-source platform aiming to make procurement easier, more transparent, and efficient. The platform contains a dashboard that visualizes public procurement patterns and features that allow a user-friendly analysis of the data. The platform supports public institutions that want to open up their procurement data and facilitate its reuse by journalists, academics, and other stakeholders. Different stakeholders - from large central authorities to the smallest of Sweden’s municipalities, investigative journalists, public service employees, activists, and interested citizens - have been involved in the project.

Success. The ‘OpenUp!’ project has further stimulated the debate about the release and reuse of data, it also produced guidelines and recommendations on how to improve the release of public procurement data in Sweden. The project has successfully partnered with the Swedish Association of Investigative Journalism (FGJ), and the Open Contracting Partnership.

[3] The “Open Up!” project web page **(**https://okfn.se/engagera-dig/projekt/openup/**)**

Problems. Generally speaking, the attitude towards open procurement data has been positive, but passive among national and regional authorities. Most of the relevant data remain closed, and only a few authorities have published data during the course of the project.

Potential for development. The main barrier to success as of right now is the lack of a clear government strategy on open data, with resources attached that would allow authorities to release data and build their capacity to work with open procurement data. Further development of such a strategy - mandating local authorities and relevant institutions to participate and support them with adequate funding which would probably give an important stimulus for opening up procurement data in Sweden.

LVM GEO[4], geospatial information portal and service provider (Latvia)

Web link: www.lvmgeo.lv

What civic purpose is achieved? The project aims to support JSC Latvia's State Forests (LVM) internal operations, provide solutions and data for clients specializing in various industries as well as solutions for public use.

Short description. LVM GEO is a platform created by the Geospatial Information Technologies business unit of the JSC Latvia's State Forests (LVM) presenting a number of geospatial information technology (GIT) products and services. The LVM GEO team is actively involved in the development of geospatial information technologies in Latvia and supports open data initiatives, standing by the idea that the more actively public administration agrees to opening of the data, the more new uses and benefits of their use will emerge, some of which may be difficult to predict at present.

What digital tools are used? LVM GEO offers applications and tools for geospatial data collection, storage, processing, and analysis. Products range from modular and multifunctional GIT platform with interfaces for companies and organizations to open tools for spatial data processing, including data management and application management. For example, forest owners can maintain geospatial data (roads, forest units, recreation areas etc.) about their territories and publish this information with fewer attributes on their website, making the data accessible to any resident. Interactive solutions can be implemented - for example allowing any resident to report about dumped waste or potholes on the road.

Success. The most striking proof of the project's success is the number of users of the data sets and services provided, which can be observed on Latvian government open data platform[5]. This means that people are really actively using this data and finding applications in unexpected new areas. LVM GEO maintains one of the biggest geospatial data and service collections in Latvia, a

[4] LVM GEO web page (https://www.lvmgeo.lv/en/about-lvm-geo)
[5] Data sets from LVM - (https://data.gov.lv/dati/lv/dataset?q=LVM).

portion of those we have published as open data available for any user. They encourage the use of these data and services for educational, scientific, research, and software development purposes. Another fact, demonstrating LVM's success is the fact that in support of their initiative, 30 other Latvian forest managers have opened, albeit with limited tabular information, some of their data.

Problems. At the moment no significant challenges were reported, as opening data is much more beneficial than issuing it with special applications and license agreements. There are also no technical challenges, maintaining a data opening mechanism is very simple.

Potential for development. Broadening the scope of the data provided, including new data sets need to be further explored. The 2021 budget (which has not yet been adopted) provides funding for the opening of State Land Service of the Republic of Latvia data, which would then also show the potential benefits and results of such an initiative.

Dodies.lv[6] history map portal (Latvia)

Web link: www.dodies.lv

What civic purpose is achieved? Dodies.lv is an independent spatial data liberation project partially building on the data provided by LVM GEO. It is a map-based free-of-charge service where all the most interesting and best nature trails can be found in one place, complemented by a historical map archive with various GPS route processing options.

Short description. The project is a history map portal, containing maps, schemes, and satellite images of different eras. Auxiliary layers, forest stand plans, ancient cadastral information, railway line diagrams, hiking, and cycling routes are also available. It is also a mapping project that aims to improve, make information easier to find, and ultimately, with easily accessible nature trails to motivate everyone to spend more time in nature. It has many features for everyone: various maps, trails, and more, including some of the more detailed historical maps.

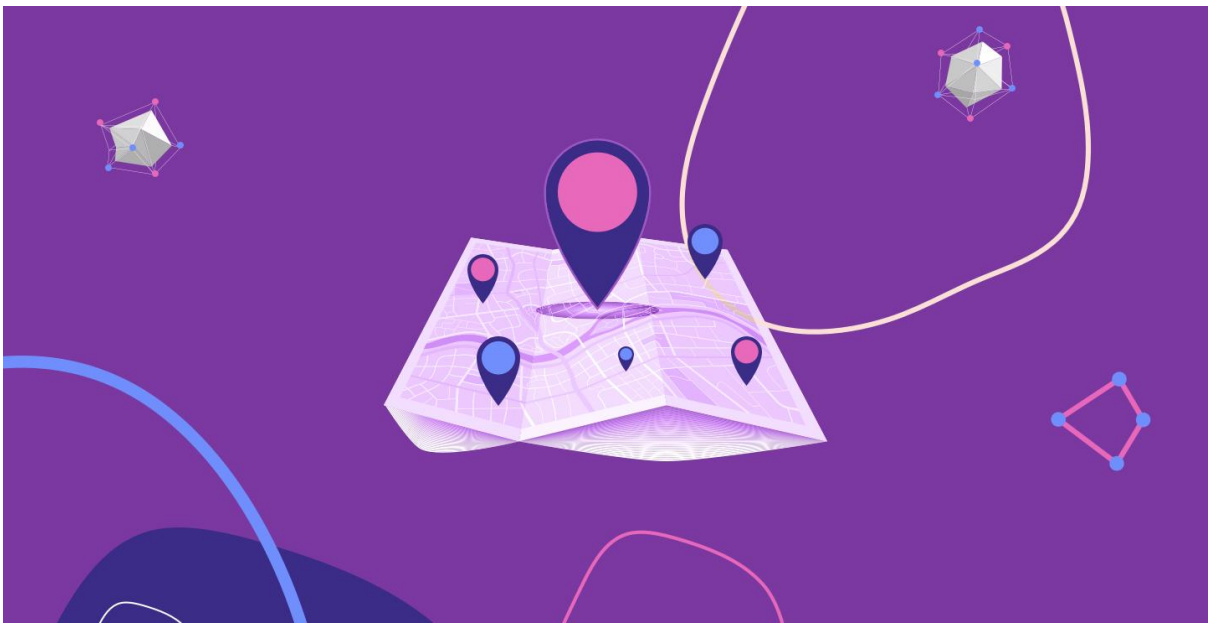
What digital tools are used? They are using open access WMS services (provided by LMV GEO), on which the following layers are based: LVM DVM; LVM Slope; LVM Wreaths; LVM Orthophoto. All maps are obtained online, in various online libraries. Conversion from scanned images to coordinate-based online map service is done by the author of this page.

Success. The history maps section was created because other similar enthusiastic projects did not provide their services free of charge, despite the fact that maps they used were found in public archives, libraries and elsewhere and the goal of publishing this data was accomplished. The project is also set on a mobile-friendly platform, that makes it readily available not just from desktop, making it way more helpful in real life situations.

[6] Dodies.lv project web page (https://vesture.dodies.lv/)

Problems. The project's challenges mainly included technical and design aspects, such as what maps to display and which way to organize them, as well as other questions of practical development of a map-based service in the context of an independent not-for-profit project.

Potential for development. The original goals of the projects were successfully achieved, the map covers all of Latvia and presents a lot of available historical layers, including LVM services. So an additional complementary project is built on top, presenting nature trails maintained by DAP ("Nature Protection Board"), LVM (company "Latvian State Forests"), and local governments.



Chapter 2. Infrastructural data for better urban performance

This chapter presents projects dedicated to the creation of public and private infrastructure, utilizing the social infrastructure in the form of new data. The goal of the projects listed here is to enable individuals, communities, and organizations to work together to increase the quality of life for all citizens. These projects aim to use data liberation to advance the functioning of different types of urban infrastructure in a way that allows for more scrutiny of public actors, as well as for new private and public actors to emerge. These new actors, irrespective of their ownership structure and goals, are expected to help bridge the gap in infrastructure performance, eventually making life in cities better for everybody involved.

Trafiklab public transport data platform (Sweden)

Web link: www.trafiklab.se

What civic purpose is achieved?
The project strives to create a one-stop-shop for all public transport data in Sweden, working towards opening up more data sources and improving the existing ones to create more opportunities for developers. The aim is to give developers tools to create products that can be shared with others.

Short description.
Trafiklab started in 2011 as a collaboration between Samtrafiken, a company owned by all the regional public transport authorities, Stockholm's Public Transport company (SL), the non-profit research institute RISE Viktoria, and commercial operators.
Developers can easily get the data needed to develop services for the benefit of Samtrafiken's owners, travelers, and society at large. Trafiklab also offers access to a network of designers and skilled PHP developers so stakeholders can find and support each other, and collect information about good practice cases and pilot projects so different organizations and individuals can get inspired.

What digital tools are used?
Trafiklab drives innovation on open data in the mobility sector together with various players both within and outside the industry. Mainly, Trafiklab has created a community for open traffic data and facilitates access to data and APIs from public transport for developers.

Success. Trafiklab has about 5,000 users (mainly developers) and circa 50,000 data searches per week. They do not collect systematic information about who uses their data but users range from big players like Google (Google Maps) and Apple, real estate companies that offer information to their tenants about public transport, system vendors (e.g. Swiftly), city planners, SJ (a major government-owned passenger train operator in Sweden), and researchers.

Problems. In practice, there is also some protectionism by regional authorities that hinders the release of data, which is sometimes related to costs of data provision.

Potential for development. The public transport data also has big potential if combined with other datasets in order to offer combined services, e.g. concert organizers could (in theory) sell both event tickets and public transport tickets as an integrated service. Trafiklab is also a partner in the ODIN (Open Data In the Nordics) project, which aims to accelerate and coordinate the work necessary to create a unified market within the mobility sector in the Nordics.

Skjutsgruppen nonprofit ridesharing movement (Sweden)

Web page: forum.skjutsgruppen.se

What civic purpose is achieved? At the core of Skjutsgruppen is the care about the environment, while also helping participants to save money and grow new social connections among strangers.

Short description. Skjutsgruppen builds various tools to facilitate carpooling and has an app, with over 700 local groups, which is being developed by everyone in the movement. It started in 2007 as a small social experiment: friends invited friends to share rides and today, the movement has over 80,000 participants in Sweden and is a growing community internationally. In addition to being a carpooling service, Skjutsgruppen also enables ride-sharing on buses, trains, and sailing boats, and anyone can join the movement to ask for or offer a shared ride for commuting, long-distance trips, going to events, or for road trips abroad.

What digital tools are used? Skjutsgruppen promotes participatory culture, where everyone involved is not a user or consumer, but rather a participant and co-creator being involved in crowdfunding of the platform and in the coordination of the movement. Trust is a very important dimension of the movement. Skjustrguppen gives priority to transparency, e.g. when you search for a ride on the homepage, your social connection to the driver or rider is shown by how your friends are connected on Facebook.

Success. The movement is collaborating with over 30 municipalities, festivals, and local public transport companies and has launched Europe's first search engine combining offers from public, non-profit, and private actors, as they started collaborating with the car rental firm Hertz. Skjutsgruppen also uses the open data supplied by Trafiklab. Skjutsgruppen also has positive effects on the climate: by facilitating carpooling and thus reducing the number of vehicles on the roads, the transport sector's climate impact is reduced.[7]

Problems. The mobile app is currently "on ice" since the movement did not manage to raise enough funds between 2020-2021 to keep it up. When it was active it exhibited usability issues as indicated by 2.3 out of 5 average rating on Google Play[8]. This has probably affected its successful adoption, as being mobile-friendly is a standard practice.

Potential for development. The project could conceivably benefit from more investment in technological aspects of user interface, which may detract some users despite the initiative's clear benefits and achievements.

115.bel[9] integrated public utility dashboard (Belarus)

Web page: www.115.бел

[7] https://forum.skjutsgruppen.se/t/trafikverket-skjutsgruppen-som-gott-exempel/483
[8] Skjutsgruppen app on Google Play (https://play.google.com/store/apps/details?id=nu.skjutsgruppen.skjutsgruppen&hl=en_US&gl=US)
[9] 115.bel web page (https://115.бел/portal/f?p=10901:1)

What civic purpose is achieved? Making public utilities more accessible to the users (adding an app and a web page), integration of the whole utility provision sphere, providing a better overview of the communal sphere to the public administration using a unitary system for filing complaints to all the public utility companies in Belarus.

Short description. As the result of the utility sector reorganization in Belarus in 2019, all the contacts between citizens and service providers run through a centralized system. Large amounts of very detailed data are collected, that in addition to its direct and very pragmatic purpose (utility provision optimization) has a lot of applications in the public sphere. As a byproduct it creates an opportunity to assess the quality of life of citizens and understand the main problematic issues.

What digital tools were used? The platform is integrated on both user and public utility sides, collecting data from users all over the country. This system allows submitting a request via the app or the website, as well as via a phone call.

Success. The project provides increased transparency of the lower public sector echelons to the upper ones (not to the general public!) in the communal sphere. This way it creates incentives for higher effectiveness in the field. 115.bel webpage allows scraping a lot of data from it and, according to some accounts, data engineers behind the project are fully aware and accepting of this fact. Several attempts of exploring the data were undertaken, available at Opendata.by and Minsk urban platform web pages. The analysis states clearly that there are some systemic differences in the physical state of Minsk's housing stock. A large proportion of difference stems from the age of the given housing estate, meaning some additional attention needs to be paid to the older ones, However, just the age does not explain every difference, with their location within the city being the second most important aspect. This means that over the recent decades' divergence processes arose among similar large housing estates, spelling potential dangers of further negative differentiation. The result is surprising, given that across the whole city the level of maintenance is relatively equal and the effort paid by the utility is very much visible.

Problems. Privacy of the users is still one of the main areas, despite the fact that it has already been improved recently. Recently personal data started to be anonymised and not available to relevant communal services workers. Originally all the personal and registration data was stored together with the contents of the particular request, which was problematic for many reasons. Another problem is the lack of outward transparency: the data is said to be used for internal analysis only. At the moment there is no API for the service and there is little hope of getting it any time soon.

Potential for development. Areas for improvement include better privacy for users, that still can get better, the exact way the data is stored and protected needs to be more obvious and made available for scrutiny. Creating possibility for more transparency to the general public as another

area that needs improvement, however this seems highly unlikely in recent (2020-2021) political climate. Same goes for provision of more collaborative options (API) for data extraction for research and transparency purposes, that can in theory be realized, however either not quite legally or informally.

Chapter 3. Creating independent civic-minded data collection infrastructure

This chapter presents examples of projects that aim to create independent infrastructures aimed at collecting, aggregating and analysing new data in crucial areas. These projects tend to be independent and their explicit goal is creation of an alternative to existing (governmental, private) information channels, that are suspect for some (political) reason - and at the same time represent older technological paradigms.

AirMQ, citizen sensing (Belarus)

Web page: www.airmq.by

What civic purpose is achieved? AirMQ presents air pollution and radiation levels as a map-based visualization using decentralized community-based networked systems. It creates a credible alternative to governmental assessments of critical ecosystem factors, affecting human health and fitness.

Short description. The project relies on the voluntary participation of members, who are helped to install particulate matter (and radiation) sensors that measure the general condition of the air (pressure, humidity, and temperature). These sensors were developed specifically for the project and are well known to the project team, which can thus effectively support the member participants. After installation and connection setting, the data flows into a common database for analysis and display on the site and in the application. The AirMQ team also participates in the international citizen sensing movement, transferring Minsk data to Sensor.Community project.

What digital tools were used? AirMQ relies heavily on the active community that is organised online, the app both collecting and presenting the aggregate data. Community support and all outward communication is facilitated by members of an NGO that is part of the founder group, thus demonstrating potential for collaboration between tech enthusiasts and more old school community actors. Sensors are bought by the users themselves, however the leading group of activists/organizers provide guidance and help install and maintain sensors bought according to certain approved and tested specifications.

Success. The project successfully organized covering most of the country's populated areas with its sensors, whose network is especially dense in places where most people live, such as Minsk or regional capitals. Thanks to AirMQ it is possible to get a detailed idea of how emissions change over time, as well as respond more quickly to deviations from the norm.

Another achievement worth mentioning is building of the community for such initiatives are strong not only as a way to solve problems, but also as a tool for developing local competencies. AirMQ not only raises important questions but also uses progressive and democratic ways to solve them, which is highly praised and important for a country like Belarus.

Problems. The API is in the works for now but is expected to be presented soon, however as of autumn 2021 it is not available yet. Safety of participants in the face of repressions from the state (given the sensitive nature of the findings, esp. in the case of the Astravets nuclear power plant) can be seen as a slowing factor and an even bigger threat in the face of carpet aggression on side of the state aimed at any horizontally organised and independent entity, especially with some potential to undermine official communication on crucial matter.

Potential for development. API could be a logical and long expected next step in the project's evolution towards a mature player in the field. AirMQ could conceivably become the basis of both new business and civic movements that would cover a wider range of issues. However, eventually, the growth in number and quality of such projects depends to a degree on the political situation in Belarus and the same goes for any particular project, irrespectively of its other features or achievements.

'Water Control'[10], well water quality control (Belarus)

Web link: www.watercontrol.info

What civic purpose is achieved? This is a citizen-sensing project too, aiming to monitor water quality in wells across the whole country, as well as collect information on illegal pollution sources like agricultural waste or unauthorized household waste dumps.

Short description. This project was created by a coalition of NGOs in partnership with the Belarusian public sector (Ministry of natural resources and environment and two public environmental centers), as well as EU donors (Coalition Clean Baltic). 'Water control' is a project for monitoring pollution of natural water resources in Belarus. In addition to data on the quality of water in wells, users can add information about unauthorized household waste dumps, manure runoff from farms, agricultural enterprises, manure and dung storages, and other sources of pollution, accompanied by photo, audio, and video materials, text comments.

[10] 'Water Control' project web page (http://watercontrol.info)

What digital tools were used The project exists thanks to the participation of the general public: everyone who checked the quality of the water in their well using a special test strip or found a source of pollution can contribute to the common cause by adding information to the web page. On the web page there is an interactive map with information on the quality of water in wells throughout the country and learn about the sources of water pollution in a given area.

Success. Among the project's main achievements, successful collaboration with the public sector would rank very high, however, this is mainly an issue of the past, as of autumn 2021 there is little hope of prolonged collaboration, much less of any new development. And so the project that successfully covered the whole country, providing vital insight into crucial areas of health and safety may risk falling into disrepair if not worth, being straightforwardly banned and blocked.

Problems. 'Water Control' is exactly the kind of project that depends on state cooperation, which is impossible in Belarus as of right now. The project is put on hold and its organizers try to save what remains of it for the possible continuation in the future. Even to a greater degree than AirMQ does, 'Water Control' depends on the political situation in Belarus, drawing the clear line between what is and what is not possible thanks to new technology.

Potential for development. 'Water Control' could possibly serve as a case for collaboration between NGO-s and the public sector, aimed at doubters and naysayers in both fields. It also could be a basis for new projects in much the same way as AirMQ, forming the basis of both new business and civic movements that would cover a wider range of issues. And in much the same way it very easily could end up being permanently ended by the state, depriving the community of a vital building block that could pave the way to more even developed and successful projects.

Chapter 4. Watch-dog activities, digital decision-making

This chapter presents initiatives working to create and maintain independent digital democracy tools for better public participation in all interested parties to view data and information on the financing and other key aspects of the functioning of the political process.

MyVoice/ManaBalss, public participation platform (Latvia)

Web link: www.manabalss.lv

What civic purpose is achieved? Creating and maintaining digital democracy tools for better public participation in decision-making processes.

Short description. MyVoice is a public participation platform where Latvian citizens (aged 16+) can submit and sign legislative initiatives (petitions) to improve policy on the national and municipal level. Once an initiative receives 10'000 signatures online (verified via internet banking), the initiative is submitted to elected representatives for a hearing. Several legislative initiatives address also the open data, information accessibility and transparency issues. Individuals, NGOs and sometimes even political parties (NB! publication of initiative is a paid service for political parties, companies and lobbyists) use the platform to enhance open, transparent governance, e.g., public procurements, and policy-making.

What digital tools are used? Innovation lies in the financing mode as well, as voluntary micro-donations of its users finance ManaBalss. Among other things, it guarantees our political and other interest neutrality that is one of the pillars of ManaBalss and a pivotal component to build the community of trust among our stakeholders – civic society, NGOs, politicians, officials, experts, and media. For many years, operational costs of ManaBalss have been covered by micro-donations, most commonly from 0.5 to 5 EUR. Number of unique micro-donors since 2011 is about 55'000 people.

Success. Since 2011, 45 changed national laws and regulations, including a constitutional amendment. News about ManaBalss initiatives are almost daily present in some of the national media, that is presented in ManaBalss news section with follow-ups, topic-related national and international news, and social media publicity on a daily basis. Due to the large Russian-speaking population in Latvia, quality translations are provided for the initiatives on the webpage and communication on the ManaBalss Russian language Facebook and Instagram page. Since 2011, ManaBalss has had more than 400’000 unique users and more than 2 million votes – a considerable number for a county of 1.95 million.

Problems. One of the main challenges is building and maintaining trust in society, as the long-term success of the platform depends on public trust in reliability and verifiability of content, trust of e-signatures, trust of channels of communication and results from the society. Trust can be undermined by targeted black PR campaigns, visibility issues and other circumstances.

Another critical area is financial independence, as it is the basis of political independence and independence from other interests that could be a risk to the organization’s mission. Financial independence for ManaBalss is ensured by monthly micro-donations paid by the platform's users. However, to ensure growth and development, additional financial resources are needed that could not be covered with micro-donations alone. IT developers are so seeked after, that it’s hard for non-profit organizations to compete with the big tech employers and start-ups in the country.

Potential for development. Potentials for growth include such areas as artificial intelligence tools for a constant feedback loop and stakeholders' high-quality involvement in the policy-making,

introduction of a micro-targeting technology for better civic engagement, and further development of large-scale co-decision systems.

Reaching a Russian-speaking audience is another goal that is still partially elusive despite active and prolonged efforts. Since 2014, ManaBalss translates the initiatives to Russian with an aim to provide information for the Russian-speaking community in Latvia. However, acquiring resources to employ a half-time Russian-speaking community manager is still an unachieved wish for the organization.

Deputāti uz delnas ("Integrity Watch LV")[11] political affiliations and finance watchdog

Web link: www.deputatiuzdelnas.lv

What civic purpose is achieved? "Deputāti uz delnas" is an interactive digital tool developed by Transparency International Latvia (known as "Delna" in Latvia) that allows the public, media, non-governmental sector, as well as other interested parties to view data and information on the financing of political parties in Latvia and declarations of interests and assets of Saeima deputies.

Short description. The **"Deputāti uz delnas"** website allows users to explore data and information about political party financing and MPs' declared private interests through interactive visualisation tools. The initiative is part of a wider project, funded by the EU Commission and led by the TI Secretariat, which aims at creating similar tools in other 7 EU countries and integrate them in what would be the largest database on money and politics in the world.

What digital tools are used? The tool is user-friendly, it integrates data from various government websites and databases together and thus increases the opportunities for civil society to be involved in monitoring the openness and accountability of elected Saeima deputies. The visualizations included in the tool are fully interactive. When you click on specific chart elements or data, the rest of the information automatically adjusts to the user's choice. The technological solutions for the tool (D3.js) were developed by the New York Times with the aim of simplifying and making complex data sets available to the public.

Success. According to TI Latvia, the process of development of Deputāti uz Delnas has fostered positive cooperation on data quality and accuracy with Latvia's Corruption Prevention and Combating Bureau and State Revenue Service, who hold the key data used for the tool. In addition, since the launch of its final version in March 2021, Deputāti uz Delnas has had some success in attracting the attention of activists and academics looking for solutions to review large amounts of data related to political financing and MPs' private interests in Latvia. Though it is still too early to judge its overall impact on citizen engagement, much of the future success will

[11] "Integrity Watch LV" web page (https://deputatiuzdelnas.lv)

depend on the successful resolution of a number of problems linked to the need to ensure that the data in the platform is timely.

Problems. At present, the main problem with Deputāti uz Delnas is that none of the datasets used for its development are not available in machine-readable format, and thus require considerable time and efforts for collection, cleaning, and usage for the digital tool. In turn, this does not allow for real-time update of the information in the platform, which would represent a great added value. In the future, effective solutions for the swift gathering of data and their adaptation will be needed.

Potential for development. According to TI Latvia, Deputāti uz Delnas has great potential for development, due to the large amount of data available in governments websites that could be put to good use. In specific, it would be possible not only to expand the circle of politicians to the executive and municipal councils, but also to use other data (e.g., on public procurement and corporate ownership) to develop corruption risk indicators. Much will depend on the solution of the above-mentioned problems of data collection and update.

‘Golos’ (‘Voice’) election monitoring platform (Belarus)

Web link: www.belarus2020.org

What civic purpose is achieved? Monitoring the election outcome, providing backing to the claims that elections in Belarus are rigged by counting the votes of people and having a photo with proof of their choice.

Short description. The platform was developed by an independent group of Belarusian programmers to control the integrity of elections and alternative vote counting. has collected over half a million ballots proving that the elections were rigged and created an interactive report where everyone can see the result of our work.

What digital tools were used? The main interface between the platform and citizens was a bot that was developed for the two most popular apps in Belarus, Telegram and Viber. In the face of possible active hacking attempts by the government no login data was stored in clear text, only a database of encrypted phone numbers (i.e no names, photos, or passport data) without any personal information, that is stored on AWS servers.

The ballots, submitted by the users were first verified by the neural network. In cases when it could not surely determine that it was the ballot paper that was photographed, the picture was verified by volunteers that for their safety were located abroad. They also removed all the images of passports or faces that were in some of the photos, so that under no circumstances would this data get into public access. This verification stage was followed by a second, which was performed by a selected group of trusted personnel.

Success. Of major importance is the fact that thanks to the **'Golos'** for the first time hard proof was given to the fact that elections in Belarus are rigged. Later the platform's functions were expanded to count the number of people going out to protest and vote on some critical areas concerning joint actions. The platform interacts with the Coordination Council to get the opinion of Belarusians on the decisions made by the Council.

Problems. Main challenges to the platform lie in the sphere outside of the immediate influence of its creators. As of mid-autumn 2021, for some time already the platform was not used, as it is not called upon by the political actors. Without their involvement, there is a real risk of the gradual loss of credibility, followed by falling into complete obsolescence.

Potential for development. Potentially 'Golos' platform can form the basis for both new business and civic movements that would cover a wider range of issues. However, to do that the team behind the project needs to emancipate itself and help the project find its justification for existence while not being called upon by politicians or, alternatively, to find a way to make active involvement of Belarusians their representatives' first priority again.

Chapter 5. Conclusions

This chapter presents main takeaways from the cases presented above, condensed to the main and common successes/failures.

Successes

- Generally speaking, the attitude towards opening more data has been positive, especially for data on how tax money is spent, in much the same way as data on other critical areas. At the same time, the attitude was at times reserved and passive.
- Projects, giving people voice succeed in providing critical input for the society: for example, in Latvia, activities resulted in 45 changed national laws and regulations, including a constitutional amendment keep ManaBalss initiatives in the news on daily basis; while in Belarus 'Golos' platform for the first time was gave the hard proof that elections in Belarus are rigged.
- A lot of people use the data provided by the projects in case studies, moreover, other companies/agencies follow suit: after the LVM GEO example, 30 more Latvian forest managers have opened, albeit with limited tabular information, some of their data.
- Projects based on open data are able to attract attention and critical mass in many cases, for example Trafiklab has thousands of users (mainly developers) and tens of thousands data searches per week; LVM GEO data is actively used, with people finding applications in unexpected new areas; ManaBalss has had more than 400'000 unique users and more than 2 million votes for initiatives – a considerable number for a county of 1.95 million.

- Among other benefits, certain projects presented in the toolkit provided increased efficiency in terms of reporting and monitoring, for example through streamlined data management and mapping/visualization of public utility issues in Belarus. The Belarusian case for 115.bel integrated public utility dashboard creates both benefits for decision-makers and some research insights to assess the quality of life of citizens and understand the main issues of urban development.

Failures and risks

- Financial sustainability and non-politically-motivated funding sources for prototypes and pioneering projects working on public participation is a critically important yet problematic issue, as it is the basis of political independence. Even organizations that have ensured independent sources of income through monthly micro-donations like ManaBalss do face challenges. To ensure growth and development, additional financial resources are needed as IT developers are so seeked after, that it's hard for non-profit organizations to compete for them.
- However technically advanced they are, the main challenges to the politically active initiatives lie in the sphere outside of the immediate influence of its creators. Without involvement of political actors, there is a real risk of the loss of interest and gradual falling into irrelevance.
- One of the main challenges is building and maintaining trust in the effectiveness of coordinated efforts to solve common problems in society, which can be undermined by targeted black PR campaigns, visibility issues and other circumstances that can threaten even established organisations.
- Independent projects, especially those providing clear alternatives to the official position on key areas are prone to become targets of political pressure, as can be seen in Belarusian cases of crowdsourced air and water quality monitoring projects: AirMQ and especially 'Water Control'.
- Even ambitious, reasonably well-funded and staffed initiatives may find themselves stranded either because of conflict with the government or because of the lack of coordination between tech community and political actors, as happened with 'Golos' platform.
- Most of the data in the studied areas still remain closed, and only a few authorities have published data during the course of the project. The main barrier is the lack of a clear government strategy on open data, with resources attached. There is also some protectionism by regional authorities, related to costs of data provision.
- Even in cases where data about important subjects is published, it isn't always machine-readable, as demonstrated by the efforts of Latvian "Integrity Watch" project and similar projects in Latvia and Belarus. This is a huge hindrance to activist and independent fact-checking projects since this requires manual labor in data updates, prevents real-time updating of the information in the platform, and reduces possibilities for cross-checking and verification.

We'll be super-glad if you use the lessons from these examples, and information about approaches and techniques in your own Civic Tech projects. Do let us know what tools you found most useful, or on the other hand - risky or limited in use. Get in touch by emailing us at help@opendata.by