

OPEN DATA FOR A SMARTER SOCIETY




The BE-GOOD project

Data is a major asset of the EU knowledge economy. In this context, the Interreg NWE VB project BE-GOOD (Building an Ecosystem to Generate Opportunities in Open Data) has been developed to generate value from and stimulate sustainable ecosystems for open data in regions in North-West Europe. BE-GOOD is a pioneering project having aimed and succeeded in the processes to unlock, re-use and extract value from Public Sector Information (PSI) to develop data-driven services in the area of infrastructure and the environment.

BE-GOOD delivered 11 new data-centred services to extract commercial value from PSI. The project used a novel demand-driven approach. By unlocking datasets and improved engagement with the marketplace, the development of applications, software or algorithms was made possible. The services that have been developed are based on business cases which in turn enable market uptake for Small and Medium Enterprises (SMEs) and job creation. The invested funding has improved citizen interaction and created new digital public services that allow for greater productivity and efficiencies.

OUR MOST IMPORTANT LESSONS

- Early focus on value creation related to the service or product to be developed is equally important than the availability of open data.
 - Transnational re-use of services have been successfully stimulated by active stakeholder involvement across EU country borders.
 - Long term continuity in data availability is important to encourage third parties to build business models on the re-use of open data.
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- Building internal support for new data driven solutions shall go beyond (top) managers and include representatives from different departments which could be implied directly at any moment, such as legal / procurement, or IT.
- The Digital Readiness Level of participating organizations has increased significantly over the project period. Awareness has grown that broad organizational adaptation to the new services with proven societal benefits allow for more data- and fact based decisions
- While respecting applicable legal frameworks, public challenges inspired by BE-GOOD should find ways to devote a larger part of intellectual property to contracted companies who could use it to ground their business.

The BE-GOOD project has been made possible with 60% co-funding from the INTERREG NWE VB programme.

More information: www.nweurope.eu/projects/project-search/begood

**In this booklet, we wish to share insights on
the BE-GOOD project successes and lessons learned.**

We hope you enjoy the read!

The BE-GOOD team

11 INNOVATIVE SOLUTIONS

Through the approach adopted by the BE-GOOD project, local authorities identified areas for improved service delivery through the opening up of Public Sector Information (PSI), adding value to their data sets and providing transnational opportunities to solution providers using innovative methodologies.

The guiding principles of the approaches used to develop the solutions were governed by the use of innovative procurement, transnational collaboration and the lessons learned by all participants in the journey for the delivery of these new solutions.

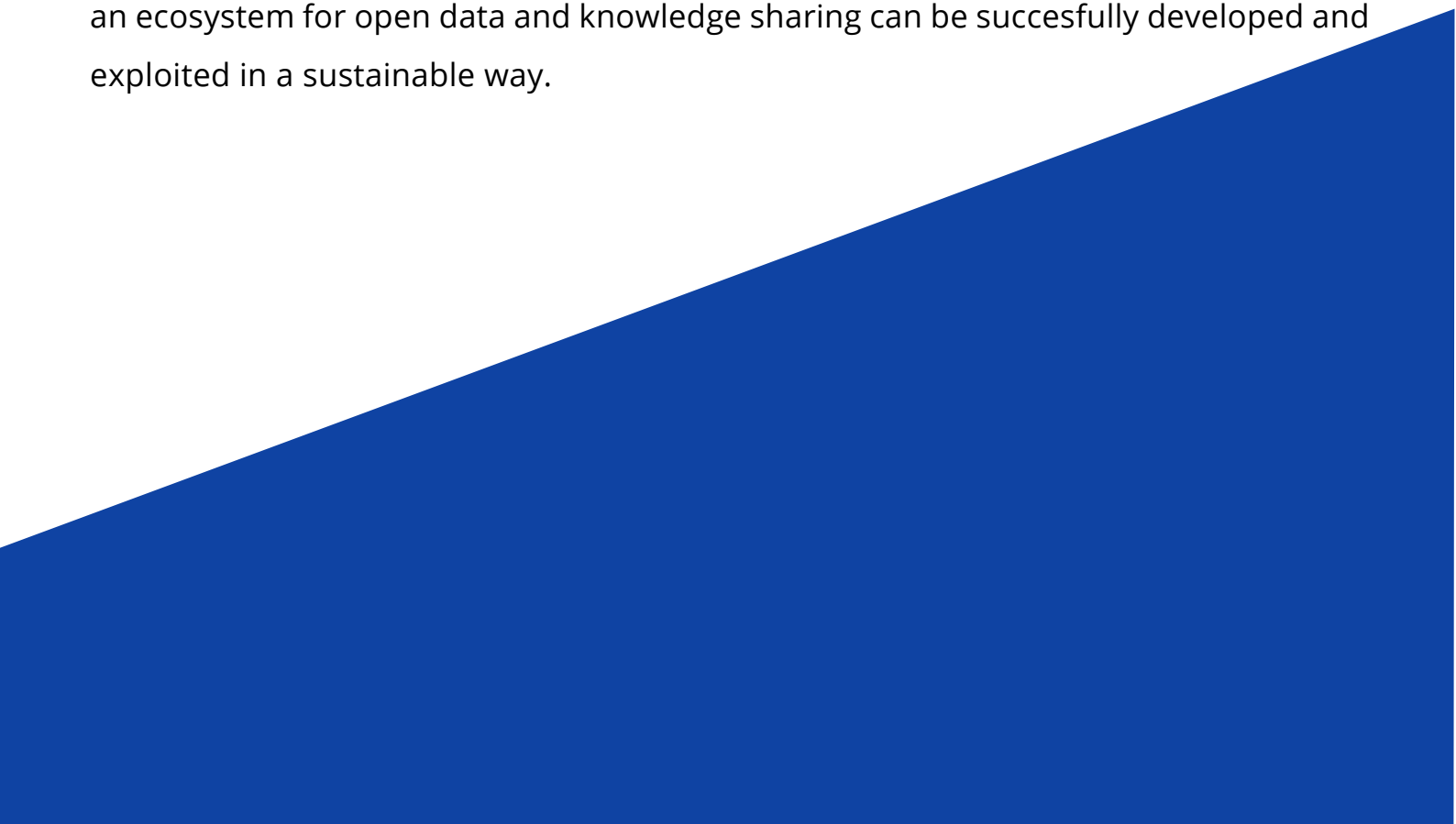


Each of the 11 solutions delivered during the project lifetime sought to further enhance how public service providers can learn from their peers and gain a better understanding of the processes currently utilised and identify areas for future work when trying to adapt and innovate during the delivery of their services.

The solutions provided explored how new approaches to service delivery for their organisations could be developed with transnational reuse of the new products and services as part of the requirements during their design and development. Essential to the success of this approach was the documentation of the lessons learned and the sharing of these to ensure that future collaborations could build on the success and experiences of participants.

The engagement of solution providers with the emphasis on providing opportunities for them to exploit and benefit from new networks and knowledge sharing initiatives was integral to encourage transnational opportunities and opening up new market possibilities. When looking at the requirements for these services with the emphasis on transnational uptake and how to provide valuable insights into how procurement processes can be adapted and enhanced were gained.

Each of the challenges and solutions that have been implemented provided unique and valuable insights in the organisational and societal benefits. It demonstrates how an ecosystem for open data and knowledge sharing can be successfully developed and exploited in a sustainable way.





SCAN TO FIND OUT MORE

HGV PERMIT CHECKER

Large trucks, also called Heavy Goods Vehicles (HGVs), only make up a relatively small proportion of road traffic. Nonetheless, when a HGV is involved in an incident it can have serious consequences for other road users.

Dublin City Council introduced the HGV Management Strategy in 2007 to encourage maximum use of the Port Tunnel by port-related traffic and to enhance the city centre environment. together with the safety and well-being of more vulnerable road users like pedestrians and cyclists.

This has resulted in between 80-94% fewer HGVs on the different routes within the cordon area, which translates to approximately 4,1000 HGVs a day removed from the city centre. While these are great results, and a permit is obligatory for 5 plus axle vehicles, there are still HGVs entering the restricted area without a permit.

The police have limited resources to check these permits. Dublin City Council developed a mobile device application and monitoring system for citizens, law enforcement and city visitors to engage with the city council to verify and report possible infringements.

The app provides users, with the opportunity to verify if a vehicle has the required permit and report possible infringements for the first time.

"Many governments all over Europe are still behind on opening up data, BE-GOOD gave us the incentive. We didn't have any expertise on opening up data, so we had a lot to learn. We now have experience and are able to give advice to other organisations about data sharing."

Jo Martin & Peter Aaron O'Connor,
challenge owners



SAFER ROADS

Death and injury data provided by law enforcement agencies (e.g. National Gendarmerie) are already being analysed by the **Département du Loiret (County Council)** across its territory, but figuring out the causality between road infrastructure, citizen behaviour and accidents is still a tough task. Having access to data concerning road accidents (casualty and property damage) allows the Département du Loiret to take preventive actions, such as localised maintenance, and to ensure road safety by providing dynamic and qualitative road services.

A multi-stakeholder data lab was co-designed by the Département du Loiret, in close collaboration with National Gendarmerie, Fire & Rescue Services in Loiret and private actors (Thélem assurance and Coyote System). The data lab benefits from historical datasets going back ten years and the data science expertise of the SME Artelys!

The digital platform provides interactive maps and dashboards for analysing different kind of harmonised historical data (road accidents, school holidays, weather conditions, events impacting traffic, etc.). A numerical model, based on predictive algorithms, is integrated into the platform to highlight relevant indicators and assess the territory's road accident situation, the ultimate goal being improved road safety.



Jérôme Baret & Marina Alletti,
challenge owners





SCAN TO FIND OUT MORE

CLEANEST AIR ROUTE

Air pollution can cause heart attacks, respiratory problems, decreased lung function and an increase in the severity of asthma in the short term. In the long-term, air pollution can even lead to lung cancer, brain cancer and brain damage. Moreover, the related economic costs lead up to €8 billion based on factors like sick days, healthcare, lost working days and a decrease in agricultural production.

"When people cycle or walk they can be exposed to high levels of air pollution, which increases the incidence of among others cause heart attacks, respiratory problems and even lung cancer. Applications and prototypes derived from open data inform commuters about these pollutants and raise awareness."



Bram Vandeninden,
challenge owner

A group of people who are heavily exposed to polluted air are the daily commuting cyclists and pedestrians who unknowingly breathe it in. To provide healthier alternative routes to their destination, **Flanders Environment Agency (VMM)** and **IRCEL-CELINE** created an API that can be implemented in routing applications to show alternative routes, based on the air quality of each route.

The open-data provided in the API (application programming interface) indicates the air quality of the requested route and will suggest similar route alternatives based on the difference in air quality. The API is based on air pollution maps of Nitrogen Dioxide (NO₂).



The main focus group are pedestrians, joggers and cyclists. Therefore, it can be combined with current existing routing and recreational apps like Google Maps, Strava and Runkeeper where it will incorporate the air quality to the routing or in the application. With this solution, VMM and IRCEL are striving to reduce cyclists and pedestrians' exposure to air pollution, resulting in positive effects on people's health.

PREDICTIVE MAINTENANCE OF ROADS

With over 5.000 km of national highways in the Netherlands, **Rijkswaterstaat (RWS)** is spending approximately 200 million euro a year on maintenance of asphalt pavements. To decrease these costs, and thereby decrease the amount of tax money needed, RWS is using big data techniques to predict “just in time” maintenance. RWS uses predictions of the asphalt lifetime to estimate when and where road maintenance will be needed.

The main failure mechanism of asphalt on Dutch highways is ravelling. Ravelling data is collected with a Laser Crack Measuring System. In current practice, the data of a road segment of 100 metres is typically summarised in nine parameters. The prediction of asphalt lifetime based on these parameters in consecutive years is correct one-third of the time. Using the available data in a more detailed manner, e.g. considering data of shorter road segments and combining and analysing the measured data before it has been summarised, the prediction consistency in consecutive years has doubled to two-thirds of the time. This is a major improvement!

To have a clear overview of all this data, RWS developed a dashboard which visualises the quality of all asphalt of the national highways in the Netherlands.

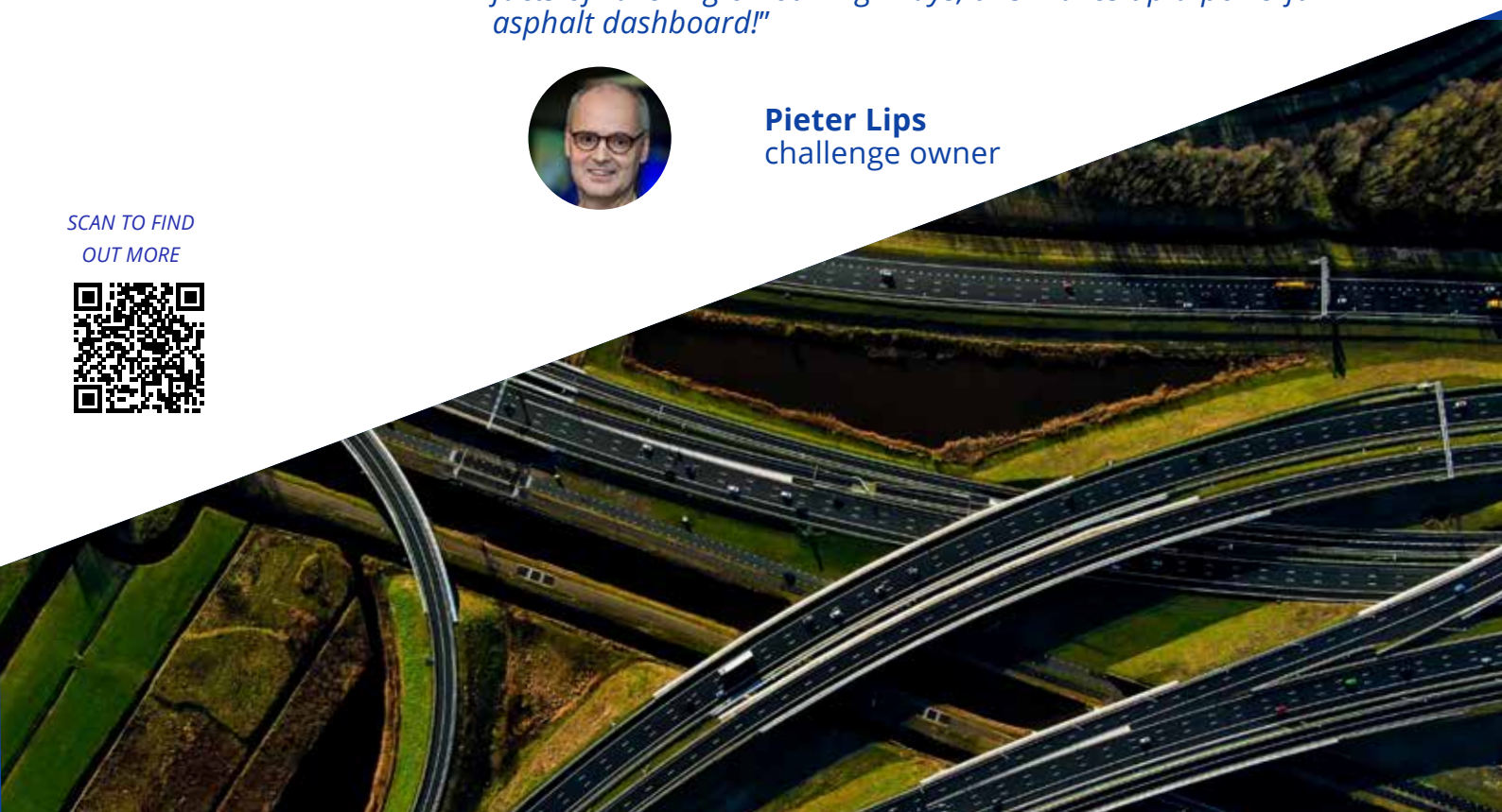
As a result, premature maintenance may be significantly decreased, thus saving on costs and on environmental impact due to CO2 emissions and material usage. Furthermore, timely maintenance avoids ad-hoc and unforeseen maintenance which often lead to traffic congestion. And a very important advantage is the increased road safety for all road users due to optimised asphalt conditions.

“With BE-GOOD we have been able to let the computer do the prediction of the asphalt lifetime. Combined with measured facts of ravelling on our highways, this makes up a powerful asphalt dashboard!”



Pieter Lips
challenge owner

SCAN TO FIND
OUT MORE





RATE MY SERVICE

Within the BE –GOOD project, **Dublin City Council** created a new service that allows public transport users rate transport services and provide real time feedback on the user experience. To that end, a mobile device application was developed to make it easier for users to share their opinions through one centralised channel and engage with public transport services providers.

Increased usage of public transport reduces both greenhouse gas emissions and transport congestion, the city council developed a system to engage with users to improve the public transport experience. The system allows users to rate their experience of public transport services for selected criteria.

At the same time, the backoffice data analytics for the system will give transportation providers the opportunity to analyse the information and improve the performance and experience of their service. This application will arrive at a time when bus services are undergoing a major reconfiguration which has started looking at a “next-generation” network of bus corridors on the busiest bus routes to make bus journeys faster, more predictable and reliable.

This could lead to an improved network, connecting more places and carrying more passengers. The application is available for all major transport providers at a national level. The application could be used to develop similar services for local authorities, central governments or other service providers. The app has potential that goes beyond public transport - the model could work for so many other public services and could be transferable to other economic sectors or regions.



Jo Martin & Peter Aaron O'Connor,
challenge owners

DATA 4 ORGANISATIONAL CHANGE

Like many authorities, **Glasgow City Council (GCC)** has long used the traditional procurement model when it comes to tackling the city's social, economic, and environmental challenges - identifying the problem, outlining a solution and seeking out the relevant service providers. But as a BE-GOOD project partner, GCC was free to explore alternative processes and it's already having a far greater impact than anticipated.

GCC decided to focus on the challenge, rather than a predetermined solution. Rather than striking it out on their own, GCC turned to CivTech to give themselves the best chance of success. CivTech is a tech accelerator hosted by the Scottish government that uses a challenge-driven approach. It includes an innovative procurement process, which matches public bodies with companies proposing to develop a solution. As opposed to putting out traditional tenders, using CivTech meant that GCC had to focus on defining a challenge and not a solution.

The original challenge that GCC set centred on public transport. Glasgow was facing an issue many cities are familiar with - citizens only having limited access to public services. How could it better connect people to places and services? Mydex, the Scottish Community Interest Company behind the solution, decided to focus on creating a dialogue between citizens and services, which incorporated improving public transportation and better understanding how it wasn't currently meeting citizens' needs.

Mydex developed a mobile app, the Included platform, that uses data provided by the citizen. Based on the user's details and the regularly updated information from the city, the app shows the citizen a tailored overview of public services they are entitled to. Users will also be encouraged to share what services they have and haven't decided to use and why. This will make it easier to pinpoint where issues such as lack of information, affordability or public transport are directly responsible for that disconnect. This is one of the benefits for the City Council that the app will provide, in addition to the myriad benefits it offers the citizens.

"By moving away from the traditional procurement process, the focus changed from public transportation to social inclusion and citizen engagement."



James Arnott
challenge owner





CONTINUITY OF TRAFFIC FLOW

The territory of Loiret, situated in the heart of France, with its regional capital Orléans, counts a traffic volume of approximately 3,5 billion kilometres driven per year and hosts important logistics poles.

Events like roadworks, car accidents or extreme weather conditions affect the daily traffic flow of people and goods. An important flooding event occurred in the area in 2016. This major weather situation caused important damages to more than 150 roads in the Loiret, affecting the population and emphasising communication difficulties about the exceptional traffic conditions. Homogeneous and real-time information about daily traffic status is clearly necessary for road managers and road users. That's why the **Département du Loiret** and **Orléans Métropole** have set up two apps to improve road traffic information for both professionals and the general public in the Loiret.

The two authorities contracted the SME Nextérité to develop a comprehensive solution which is based on a data platform and two web applications. The data platform, combining different types of data like roadworks, public transport, upcoming events, parking availability and the weather forecast, feeds the web apps, ViaPro, for road managers, and ViaFacil, for all the road users.

ViaPro enables road managers to easily report incidents (roadworks, accidents, road closures, floods, markets...) and share the information with other professionals and with the general public app (ViaFacil). Besides displaying reliable road information, ViaFacil is a real-time multimodal journey planner which offers the possibility to choose among different routing options (like public transport, bike or car) based on high-quality data and in agreement with the local mobility policies.

With these choices, Orléans Métropole and Département du Loiret aim to provide a coherent service to citizens, caring about data and environmental protection.



Marina Alletti & Vanda Turczi,
challenge owners

WASTE WATER TRACING

To avoid toxic wastewater flowing into the sewer system, **Flanders Environment Agency (VMM)** worked together with the SME Geosparc to develop an application based upon their open data on the wastewater infrastructure.

"We all know water doesn't stop at the border, so we need to work together with neighbouring countries to preserve a good water quality."

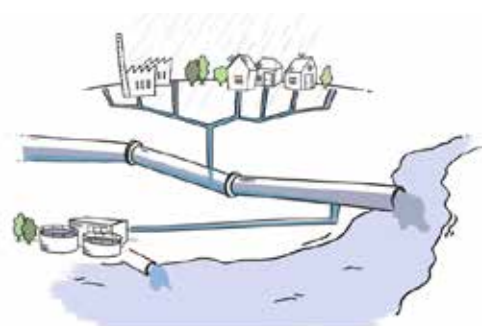


Katleen Miserez & Dries Luts,
challenge owners

Sewers and watercourses are combined in the application. When heavy rain falls, the sewage system overflows in the surface water. This water is normally rather clean and could safely flow into recreational water but, naturally, this has to be avoided in the case of toxic spills in the sewer system!

The developed API allows to, as soon as any spill in the sewer system is detected, identify overflow structures that need to be closed. The overflow is then directly guided to a wastewater treatment plant. Thus, potential environmental damage or health issues are prevented.

Besides avoiding environmental damage and health issues, this pioneering compilation of information will help emergency services and authorities to get an overview of a precarious situation. Rather less time sensitive, the algorithm will also help sewer managers to better understand their part in a larger sewer network, allowing them to see the bigger picture and their potential impact on neighbouring networks.



The algorithm can also help with the planning and renovation of the sewer infrastructure. Namely, the application calculates the amount of water passing through the sewer network and gives an overview of the existing and already planned infrastructure. Based on this information the network can be maintained and expanded.

SCAN TO FIND OUT MORE





DISCOVERY OF NATURAL HERITAGE

In terms of biodiversity, **Orléans Métropole** has an ideal geographical situation. Located on the edges of the Loire, a UNESCO World Heritage site, the area is brimming with green natural systems, making it a vast 'green lung', just south of Paris. With nearly 300.000 inhabitants and more than 30 parks, the Métropole is a gateway to the Loire castles and has become a dynamic tourist spot. This has pushed the Métropole to step up its game, focusing on building activities around its historical and natural heritage.

However, challenges remain, as the Métropole's green spaces and biodiversity have not been reaching their full potential. Many inhabitants are not aware of the abundant biodiversity around them, yet their interaction with local nature spots is key to enhancing the environmental wealth of these areas. Orléans Métropole contracted the SME ENEO to develop an innovative solution helping people to discover biodiversity in an original way. The design thinking process involved citizens in the co-construction of the solution. The results led to Foxtrot, an algorithm which can be integrated in existing apps, websites, social networks, routing solutions and can be queried through a chatbot.

Foxtrot enables citizens to use their existing tools (touristic app, Metropole website, Facebook) to change their everyday journeys by proposing alternative and personalized walks. For example, when a user walks home from work, the algorithm will propose alternative paths (more green, calmer, etc.). These personalized walks enable the discovery of the surrounding area and will help to raise users' awareness of biodiversity. This will also enable to redynamize local tourism after COVID19.



Vanda Turczi,
challenge owner

SMART WASTE WATER INFORMATION MANAGEMENT (SWWIM)

Due to climate change, many European countries now expect to face more frequent periods of heavy rain or drought. Nowadays, in the Netherlands, most cities still collect waste water and stormwater in one combined wastewater system. When more rain falls than can be stored in the sewer system, the sewer system may occasionally overflow. The diluted sewage water could then leak into the surface water, thus polluting it. This may lead to environmental issues, like fish mortality, pollution of the sludge and eventually diseases in the cattle who drink the surface water. Besides these environmental issues, public health can be at risk due to the pollution of recreational waters.

Hoogheemraadschap Delfland (the regional water authority in the southwest Netherlands) would like to have more insight into the water quality and quantity, as well as the potential impact of its sewer systems on the surface water.

Water management involves many different partners and therefore many different sources of data. To combine the wastewater data and information of individual partners like Delfland, a platform was developed by the company HydroLogic to optimise (waste) water management. The platform incorporates both static and dynamic data to gain more insight into the water infrastructure and its bottlenecks, but also in the way the complex systems work together and how they influence each other. In this way, it will be more clear which measurements can be taken to improve the system and potentially prevent future water damage.

"A proper treatment of communal waste water is essential for the community. Thanks to BE-GOOD we're able to combine information about performances of several stakeholders in one online platform."



Kees van der Hoop,
challenge owner



SCAN TO FIND OUT MORE

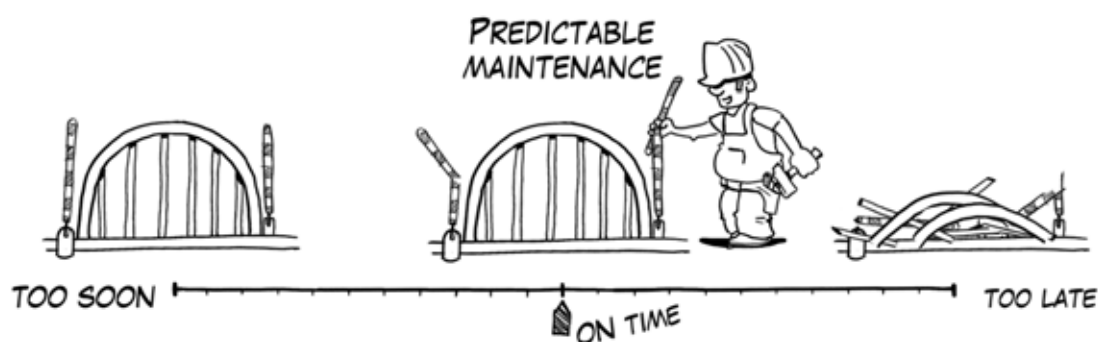


ENERGY-EFFICIENT INFRASTRUCTURES

Rijkswaterstaat (RWS) is responsible for the design, construction, management and maintenance of the main infrastructure facilities in the Netherlands.

To reduce costs, RWS uses data to make maintenance more efficient. Maintenance is often carried out either too early (at fixed intervals) or too late (corrective). To optimise this, RWS installed sensors in its infrastructural works to ensure that future maintenance is done at the exact moment needed. These sensors track information like electricity consumption and movement in structures such as lock gates or bridges.

The collected data is combined with data from similar infrastructural works at different locations and other data like the weather forecast and water levels. A dashboard displays the combined data and indicates if maintenance is needed. For example, a lock will require consistent amounts of energy for a given water level. When tracked as a trend over time, any variation in this energy consumption pattern can be easily flagged, so that RWS can take a closer look to see if other variables play a role or if maintenance is required.



This solution provides two major benefits. The first one is lower costs for the maintenance of infrastructures, meaning less tax money needed. The second major benefit is the increase of the reliability of the installations and the reduction in downtime of the infrastructure.

"Always begin with the people in your project. People define your success, not IT or technique"



Gilbert Westdorp,
challenge owner

RECOMMENDATIONS

INNOVATIVE PROCUREMENT



BE-GOOD used a challenge-based procurement which has led to more innovative solutions. Most challenges established an international jury for reviewing the tender, others used a traditional procurement and selected the most innovative SME.

EXAMPLE - DATA 4 ORGANISATIONAL CHANGE


GCC decided to focus on the challenge, rather than a predetermined solution, and turned to CivTech, a tech accelerator hosted by the Scottish government. The challenge was published on their platform and nine SMEs responded, of which three were supported in further developing and pitching their idea. At the end, the best idea was chosen.

By using this innovative procurement process, the focus changed from connecting people and places (transportation) to connecting people and public services. GCC opened itself up to a wholly new way of working and found a solution that went above and beyond the original outline of the challenge.

EXAMPLE - CONTINUITY OF TRAFFIC FLOW

The Département du Loiret and Orléans Métropole used an innovative procurement process with two selection phases within an open contest of data processing. In the first phase, four applicants were selected by an international jury involving partners and local decision-makers. During the second phase, the winner was selected anonymously by the same jury. The procurement process was successful, but it did cost a lot of time and organisation. The open contest had very strict rules and the process took one year in total. Compared to the conventional procurement process that was used for 'Safer Roads' and 'Discovery of Natural Heritage', we can say that an innovative procurement process isn't always necessary to engage an innovative SME.

RECOMMENDATIONS

- It is important to determine the procurement process early, at the start of the project. From the experience of BE-GOOD procurement teams, we identified the need to provide training to different internal stakeholders. This enables procurement that actually supports more innovative methods for service development and delivery by SME's.
 - In order to catch the attention and give a chance to SMEs to be contracted at a European level, it might be necessary to ease the national administrative regulations in terms of procurement procedures.
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TURNING OPEN DATA INTO WORKING PROTOTYPES



Turning the data into prototypes was a process of trial and error.

Based on business requirements and intensive stakeholder involvement 11 different prototypes were developed. Implementation in a real life environment included user test- and feedback improvements.

EXAMPLE - CLEANEST AIR ROUTE

Model data of high-resolution air pollution models were used to develop an API. Multiple requirements were needed for the prototype: First, the air quality model needed to be of a high enough resolution to provide relevant results. Secondly, a health-based air quality index was required. Lastly, annual mean concentration maps of all the parameters were needed.

All this input is made available through an open data endpoint. This API can either receive routes and calculate a resistance value and return an evaluation to the client or provide the data necessary for the client to decide. The API is developed as an open-source application and documented so that it can be implemented in other route planners.

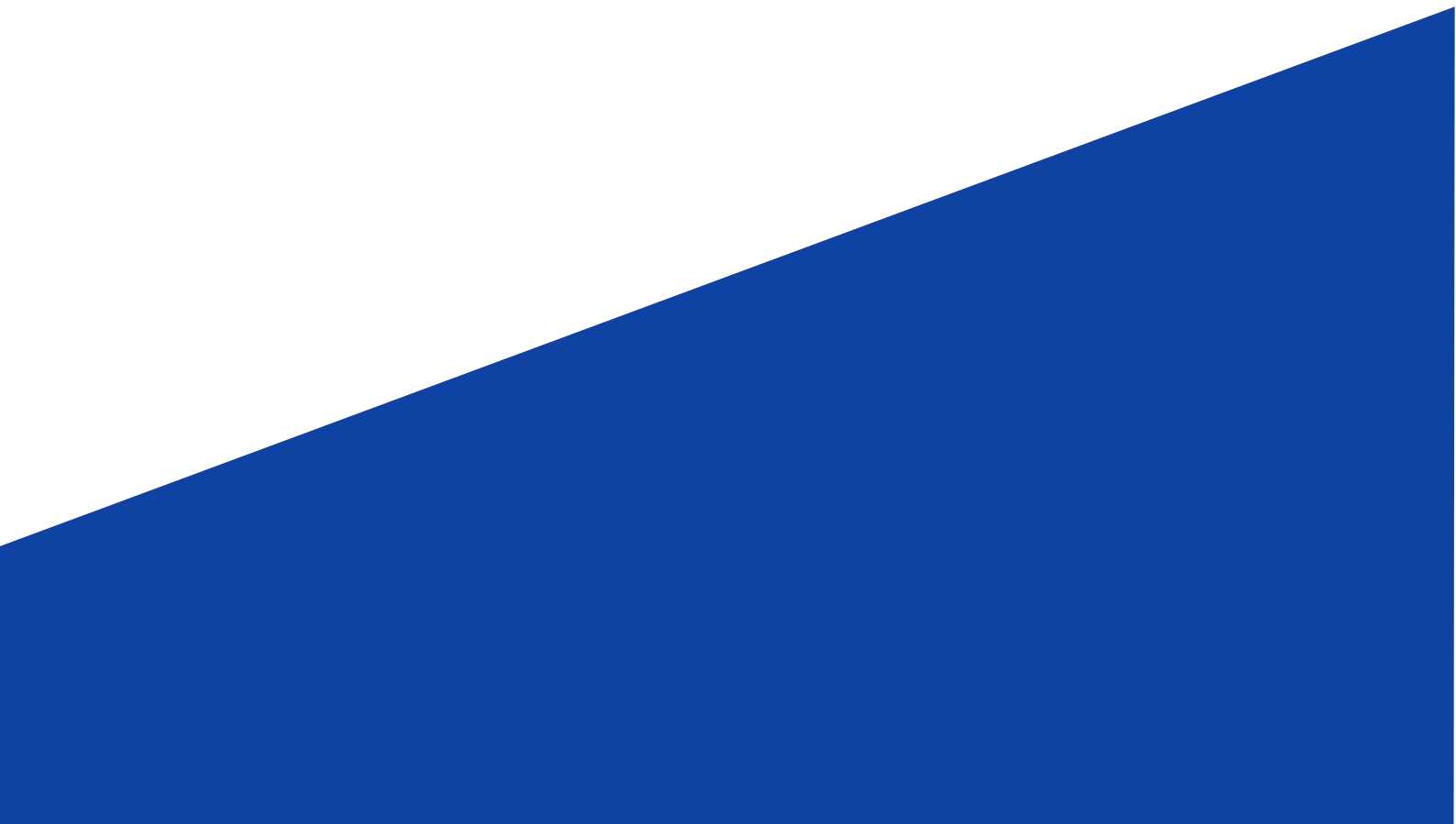
EXAMPLE - PREDICTIVE MAINTENANCE OF ROADS

Over 400 parameters, related to all kinds of environmental, physical conditions along the highways (including temperature, weather conditions, traffic intensity, etc.) were used to calculate algorithms with data analytics and machine learning. The accuracy of the algorithms varied when it came to predicting the remaining lifetime of the asphalt on the road. After a lot of trial and error, RWS eventually succeeded in building an algorithm that could learn from itself by comparing its calculated results with the true stone loss measurements. This led to increasingly accurate predictions, a rewarding result.

EXAMPLE - RATE MY TRANSPORTATION SERVICE

This service uses data from the Real-Time Passenger Information API data feed published by the National Transport Authority (NTA) which relates to public transport stops, routes and operators. This data is combined with real-time crowdsourced data to allow public transport user's rate their experience and transport providers analyse. This feedback can be used to create valuable insights into the user experience. Data fields are analysed to provide an overview of the user experience and route and stop performance across the network. The data is made public and maintained by the NTA in such a way that it ensures future developments and interoperability. Knowledge and access to these standards and future applications of these are necessary to ensure continuity of service pending future configuration changes.

RECOMMENDATIONS

- Building internal support for new data driven solutions shall go beyond (top) managers and include representatives from different departments which could be implied directly at any moment, such as legal / procurement or IT.
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TRANSNATIONAL BY DESIGN



International cooperation has enabled Transnational exchange. The approach developed surpasses the limitations of national Borders, resulting in products and services that can be easily replicated in different European Regions and Countries.

EXAMPLE - WASTE WATER TRACING

The algorithm that is the basis of the application is compatible with European INSPIRE standards for network data. Because of this, the service could more easily be expanded to other countries.

With the creation of a service that is based on openly available public sector information, tracing toxic wastewater will no longer be limited by national borders. The Delfland Water Authority (the Netherlands) already expressed their ambition to apply the algorithm on their datasets. The collaboration between Flanders and the Netherlands is particularly interesting, because of many of these (wastewater) networks don't stop at the border. Additionally, the algorithm was designed in such a way that it can be used for other purposes, such as sediment tracing.

EXAMPLE - SAFER ROADS

The Département du Loiret and the RWS Data Science Team closely worked together to test French data under the Dutch traffic accidents predictive model. Unfortunately, the lack of multilingual metadata description or EU standards prevented the possibility to go further. This reason also hampered the implementation of tests to merge the solutions developed by the challenges Predictive Maintenance and Safer roads, although the complementary business cases. These experiences showed how critical is to collectively work on data standardization in order to assure interoperability and transnationality.

EXAMPLE - DISCOVERY OF NATURAL HERITAGE

Orléans Métropole has been working together with Glasgow City Council, who already has a lot of experience in trying to build a city that is more accessible for specific target groups. The common basis was the methodology of design thinking. In addition, the SMEs supporting both organisations in delivering new services were actively involved in exchanging knowledge and expertise.

Working together on this particular aspect proved to be very beneficial for all stakeholders involved. For example, being able to refer to other front-runner cities working on comparable challenges, was very helpful to guarantee and maintain the necessary support by policymakers.

RECOMMENDATIONS

- BE-GOOD challenges leveraging standardised data are confirming the benefits of the standardization efforts, particularly at the international scale (e.g. INSPIRE data) as standardised data are allowing accelerated transnational tests and are more generally facilitating the transfer of a service from a given organisational and national context to another one.
- Appropriate level of description of metadata could be a remedy to linguistic barriers and is required even for expert re-users.

MARKET UPTAKE & BUSINESS DEVELOPMENT



Development and uptake of innovative products and services by SMEs is one of the goals of the BE-GOOD project. To ensure this, roadshows and publicity campaigns were organised to showcase our solutions.

EXAMPLE - SMART WASTE WATER INFORMATION MANAGEMENT (SWWIM)


The SWWIM solution is designed as a sustainable eco service. Municipalities can join the cooperation framework easily, which enlarges the development opportunities. This enables SMEs and other parties to add their data through an API. This will help SMEs to develop new tools and offers using the available data and services.

EXAMPLE - ENERGY-EFFICIENT INFRASTRUCTURES

Since predictable maintenance uses many different parameters and new technology (e.g. sensors and analytics), RWS and its contractors had to adapt their methods of managing the assets.

At this point, the organisation is still in the process of adapting towards predictive maintenance, but many organisations have already shown their interest in this innovative solution.

RECOMMENDATIONS

- By combining workshops (more exactly design innovation sessions) and surveys, it is possible to ensure the creation of a business case including the needs of the final users in the developed solutions, hence an easier uptake of the solutions.
 - While respecting applicable legal frameworks, public challenges inspired by BE-GOOD should find ways to devote a larger part of intellectual property to contracted companies who could use it to ground their business models.
 - Engage all potential stakeholders, even those who are not central.
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OPEN DATA ENRICHMENT



BE-GOOD developed transnational methods which allows the release and use of data to engage with solution providers. Data sharing, data enrichment and smart analytics creates a wide variety of benefits for different stakeholders.

EXAMPLE - HGV PERMIT CHECKER

Building the HGV Permit Checker meant that Dublin City Council had to open up data on HGV permits. As a result of the emergence of General Data Protection Regulation (GDPR) the design of the tool had to be changed to develop two front end applications (for public and private use).

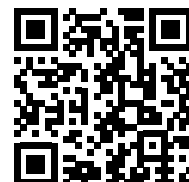
The registration number in the database is stored with no spaces and all letters in capitals. As users can enter the vehicle registration number freehand, it would be necessary to perform a preprocessing on the details entered for the lookup. All spaces must be stripped from the vehicle registration data entered and the search cannot be case sensitive.

RECOMMENDATIONS

- Focus primarily on the service to be developed and combine available open data sources.
- Provide data in different formats. These data should be easy to identify, accessible, interoperable and re-usable.
- Long term data availability is important to encourage third parties to build a business model on the re-use of Open Data

The BE-GOOD project has been made possible with 60% co-funding from the INTERREG NWE VB programme.

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