REPREX.NL - Big data that works for the benefit of everybody

Big data creates inequalities in the age of AI. As the authors of the famous <u>Data Feminism</u> book eloquently argued, only large corporations, governments, and the best endowed universities can sustain large, comprehensive data collection or integration programs that give them a competitive advantage in training AI algorithms.

The motto of the <u>Dutch Al Coalition</u>, of which we are members, is 'algorithms that work for all'. We are working on global, progressive issues, covered by the UN SDG goals. We work on data problems in which almost everybody affected is small, and the problem is big.

Our innovation is the integration of self-developed open-source software that works in larger software ecosystems, and self-developed data assets that work in the web of data (semantic web or web 3.0) automatically with the data of various knowledge organizations. Specifically, we are modernizing the data observatory concept.



The EU, OECD, and UN recognizes about 60 permanent data collection and distribution systems globally, which almost all employ a centralized data model using 20th century organization and data production modes. We instead create open integrations that are decentralized, allow log in and off, and can put large research universities, start-ups, and citizen scientists on an equal footing within data ecosystems. See: <u>Our vision of a modern data observatory</u>.



We have 4 software releases and 1 pre-release so far, which already have a few thousand users. We believe that our data assets and software components are unique enough to find a substantial global user base, but it is our combination of technology and organizational know-how that makes us globally unique.

https://reprex.nl/software/

We are aiming to make the vision of the European Data Strategy, data altruism, data sharing, and ethical, trustworthy AI a reality in a growing number of areas: music, cultural heritage, ESG (economic, social, and governance) reporting, and competition issues.

Our data observatories

Our <u>Green Deal Data Observatory</u> is currently used to pilot an application that brings down the cost of auditable, reliable climate change or water use reporting for corporations from 10,000-1,000,000 euros to a much lower level, via shared data use and research automation. In the EU, from 2023, banks, insurance companies, investment funds, and large companies will have to produce audited greenhouse gas, water, and, later, gender balance and other social accounts.

According to the EU's impact study, this will cost about 4 billion euros for 49,000 entities, banks, insurance and investment companies, and the large companies of Europe. It will also make sure that regulators, central banks, even antitrust bodies can monitor the large companies' performance to meet the Paris Accord goals. Our service integrates environmental account data with financial and national accounts data. It is open for B2B users – large audit firms, providers of accounting software, or sustainability reporting firms – to bring down their service costs with shared data and other open-source software innovations to the level of SMEs and NGOs. The Sustainable Finance Package of the EU comes with sticks and carrots, including more favorable insurance policies, bank loans, and subsidies for those who can provide reliable accounts of their emissions or water use.

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The policy aim of the EU and the NL is to provide cheaper financing and insurance for companies that are making efforts to meet the Paris Accord. Planning and auditing such sustainability investments is beyond the budget of SMEs or civil society actors. With the partners in our <u>Green Deal Data Observatory</u>, a value bank, a central bank, an auditor, and SMEs with the support of the EU we use shared, open data to bring down reporting/auditing costs to a manageable amount for smaller entities.

Our earlier-stage <u>Competition Data Observatory</u> is a proof that the concept we successfully developed in music – and, later, the broader cultural sector – can be applied globally in many domains where problems are large and players are small. We see interest for our services from three continents, and from various sectors. We started this conceptual for computational antitrust with the Centre for Competition Policy in the United Kingdom. This work aligns with SDG goal 11 (responsible consumer protection.)



Our flagship <u>Digital Music Observatory</u> has won a prestigious Horizon Europe Research and Innovation Grant together with our user group of large universities and music organizations from all over Europe. In Europe, a typical music organization has no IT staff, no data scientist, and no data engineer, but nevertheless often finds itself in conflict with US-based data/AI monopolies like Google's YouTube, Apple's Music service. We will Our goal is to provide the European music publishers, authors' rights representatives, producers, performers, and live music partners with reliable, joint market research similar to the European Audiovisual Observatory's services for the television and film industry.



We won a <u>UK Trustworthy Autonomous Systems Hub</u> grant as industry partners of leading UK universities that research how to trace blame for negative outcomes of AI systems. We are designing experiments and datasets to see why the YouTube or Spotify algorithm treats the music of a young woman of color with a mixed ethnic background from the Hague differently from a London-based white male musician. Our goals align well with the SGD goals 4 (culture) 5 (gender equality), 8 (decent work).

Our music observatory is mostly aligned with the cultural and gender equality SDG agenda, while our green observatory is aligned with the environmental, climate-related, and broader social agenda. We believe that our current Digital Music Observatory project has a very high potential to make a

significant impact in the Hague economy. The aforementioned European Audiovisual Observatory established Strasbourg as a data hub for the film industry and employs more than 30 data specialists in the French city. Our Digital Music Observatory is a prototype for a later, EU-recognized European Music Observatory, developed here, in the Hague. It would be logical to make this prototype successful and find a permanent home for this future EU organization in our beautiful and smart city.

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We believe that our approach genuinely goes hand in hand with the smart city strategy of the Hague and its agenda to remain a centre of peace and justice in the age of big data and Al.

Home in the Hague

In the Hague, we are working together with two local organizations to make our music observatory successful, and later replicable in other cultural sectors. With the PAARD, who used to host ImpactCity events, we would like to roll out our market research prototype services in the Netherlands: specifically, surveying and ethical AI-supported music curation. We are also thinking about the possibility of attracting the Dutch cluster of the emerging Music Tech Europe ecosystem to the Grote Markt, where we hope to build a project office for the prototype of the European Music Observatory.

This future EU body will be like the *European Audiovisual Observatory* in Strasbourg, France, with 30+ data jobs providing Europe's television stations and film producers with market research. With support from the Hague, we believe that it could be permanently based in the Hague, because Reprex is building its prototype in our city (with 14 international partners).

We are also planning to continue an early-stage project, the <u>Cultural Creative Sectors Industries Data Observatory</u>, with UvA IViR and <u>Europeana</u>, a Hague-based EU institution that coordinates the work of all EU member states' cultural heritage and are experts in the semantic web or web 3.0 concept. Located in the <u>Koninklijke Bibliotheek</u>, they are building systems that connect the worlds' most important knowledge systems, such as national libraries, Wikipedia's Dbpedia, Google's services, and national museum collections into a web 3.0 knowledge graph. We asked **Europeana** to help us build new services that synchronize these important knowledge centres, via our <u>Digital Music Observatory</u>, with Europe's music knowledge.

Business outlook



Borbála Dömötörfy



Daniel Antal

Reprex was in **the Hague** founded on 1 September 2020 and is in its 2nd business year. Our main users are at this point large and well-endowed international universities (in the Netherlands, IViR at the UvA.)

We work with a value bank, an international audit firm, and various SMEs and NGOs to make our products scalable and affordable. daniel.antal@reprex.nl borbala.domotorfy@reprex.nl

It would be tempting to project our exponentially growing revenue base from 2020, but we are aware of the problem of scaling up, and we do not make exact cash flow projections at this point.

We validated our Product/market Fit in the <u>Yes!Delft AI+Blockchain</u> <u>Lab</u>, and we further accelerated our growth in our beachhead market with the <u>JUMP European Music Market Accelerator</u>.

Our business model is business-to-business and getting into the procurement chain of large organizations is difficult. As we play a data integrator role, we aim to work with smaller users, such a music publisher, civil society organizations, or sustainability reporting boutiques via their national or EU umbrella organizations covering them with a national licence.

Our main funding has been various awards and grants in competitive tenders and competitions. We have won such prizes in Slovakia, in the UK Trustworthy Autonomous Systems Hub, and in the EU Horizon Europe and Creative Europe programs. We have stable funding for the next 3,5 half years, with several hundred thousand euros for development alone.

For details, please see: https://reprex.nl/#accomplishments