

The background of the page is a light blue technical line drawing of industrial machinery. It features various components such as a large circular flange on the left, a central valve with a handwheel, a complex assembly of pipes and fittings on the right, and a rectangular tray or platform at the bottom. The drawing is composed of clean, thin lines, creating a technical and industrial aesthetic.

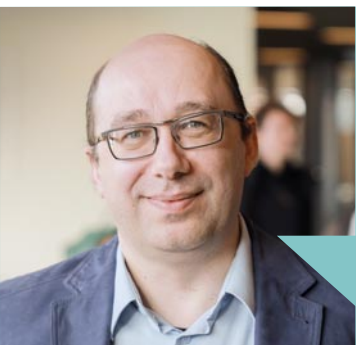
BRINGING BIG DATA RESEARCH CLOSER TO THE MARKET



The Commit2Data research programme has a valorisation branch to bridge the gap between designing solutions that work in the lab and building products that work for people. This programme, which employs a valorisation coach, might be an example for other Dutch research programmes.

By Bennie Mols Images iStock,
Henk Veenstra, ECP, Bram Saey

'Many researchers underestimate the gap between showing that an idea works as a prototype and showing that it works as a product for people', says professor Alexander Lazovik, head of the group Distributed Systems at the University of Groningen. Lazovik received a Commit2Data valorisation grant in 2021 for the project ECiDA: Evolutionary changes in distributed data analysis. Although the grant of 40,000 euros is relatively small, it allowed Lazovik and his partners to create a minimum viable product over a period of six months in 2022. In the ECiDA project, they work together with Vitens, the largest drinking water company in the Netherlands, trying to solve various data challenges that the company faces in its water management. Centrum Wiskunde & Informatica (CWI), TNO and the start-up companies Anchormen and Researchable are also part of the partnership to bring big data research closer to the market.



Alexander Lazovik

'There is a gap between data science and software engineering'

Bridging the gap

Data can help monitor and distribute water, predict and maintain water quality, and keep water pipes reliable. Although Vitens collects all kinds of sensor data to improve their water management, the company felt it was not using these data to their full potential. Lazovik: 'It transpired there was a gap between the algorithms as developed by the data specialists and how these same algorithms run in practice at the company. Basically, it comes down to a gap between data science and software engineering.'



Aldert de Jongste

'Support can take all forms, from finding funding to organising coaching'

Lazovik believes that thanks to the valorisation grant, they have created a solution to bridge that gap: 'Our solution takes into account the entire life cycle of the data science pipeline. It requests that for each component, developers explicitly state what it is about. How should data be fed into the component? What data comes out of the com-

ponent? For different types of data, you need to do different things. Furthermore, components must be dynamic and changes shouldn't result in malfunctioning.' Together with Vitens, Lazovik and his colleagues are now exploring how well their solution works in practice.

Discovering what works

The Commit2Data valorisation grants grew out of the public-private research and innovation programme Commit2Data, which focuses on bridging the gap between academic research in the field of big data and business applications (see box on page 7). 'Although valorisation is already embedded in the goal of the research programme, we saw that much potential still remained untapped', says Boudewijn Haverkort, chairman of Commit2Data. 'Therefore, we created a separate valorisation plan in 2019 for which we managed to get funding through the Ministry of Economic Affairs and Climate Policy: about 2 million euros to be spent on support for the valorisation of research results between 2020 and 2024.'

An initiative like this, bringing academic research so close to the market, did not exist before in the Dutch public research landscape. Therefore, the Commit2Data board had to find out what type of valorisation plan works in practice. 'We first considered organising general courses and meetings', recalls Haverkort, 'and we thought we would roll these out to PhD students who could then accumulate credits. We learned that there was little enthusiasm for this. It is too complicated and universities already organise things in this field.'

'However, we discovered that what did work was employing a valorisation coach, Arie Brouwer, who contacted researchers personally', states Aldert De Jongste, general secretary of Commit2Data. He continues: 'Brouwer contacts researchers from all 60 Commit2Data projects, acts as a sounding board and offers customised support. Support can take all forms, from finding relevant funding to organising the coaching of a start-up by an experienced entrepreneur. Often part of this process is finding the focus: what is the next doable step? Together with the researchers, and sometimes also companies, he looks at the research findings and the potential to take these one step further to market or towards a societal application. Where wanted, the coach also helps with writing the grant applications, which are then evaluated according to the regular NWO criteria.' This kind of customisation can yield surprising results, says De Jongste: 'We saw that the different perspective the valorisation coach brought to the table could both inspire and guide the process.'

Two other projects that received a valorisation grant are "Protection of electricity networks through simulation" and "Physicians Implement Exercise as Medicine (PIE=M)". The first project is about designing a new simulation platform for a nationwide electricity network. 'By using measurement data, the researchers developed an algorithm that predicts peaks and troughs in the electricity network and

helps stabilise it', explains De Jongste. 'The simulation platform has been successfully tested on the electricity grid of Iceland.' The second project, "Physicians Implement Exercise as Medicine", builds on the scientifically proven insight that daily exercise reduces the occurrence and severity of many chronic diseases. It examines why exercise as a medicine is not yet being implemented and what physicians are up against. The ultimate goal of the project is to develop a tool that generates personalised exercise advice based on big data, making the adoption of exercise as medicine easier and more widespread. De Jongste: 'During the research phase, there were two successful trials in hospitals in Amsterdam and Groningen. During the valorisation phase, the applicability within other hospitals was explored. The project consortium is now looking at the possibility of setting up lifestyle advice desks at hospital locations.'

Lessons learned

Haverkort thinks that other Dutch research programmes can learn important lessons from the Commit2Data-experiences when it comes to taking valorisation to the next level: 'Lesson one: customise the support of valorisation. We notice that every project has different needs. No two routes to valorisation are the same. Lesson two: reserve a small part of the total budget upfront for valorisation. Let's say there is a 5 million euros research programme. Then I would spend a bit less on doing the actual research, something like two PhD students less, and use this money to start employing a valorisation coach and introducing valorisation grants in the second or third year.'

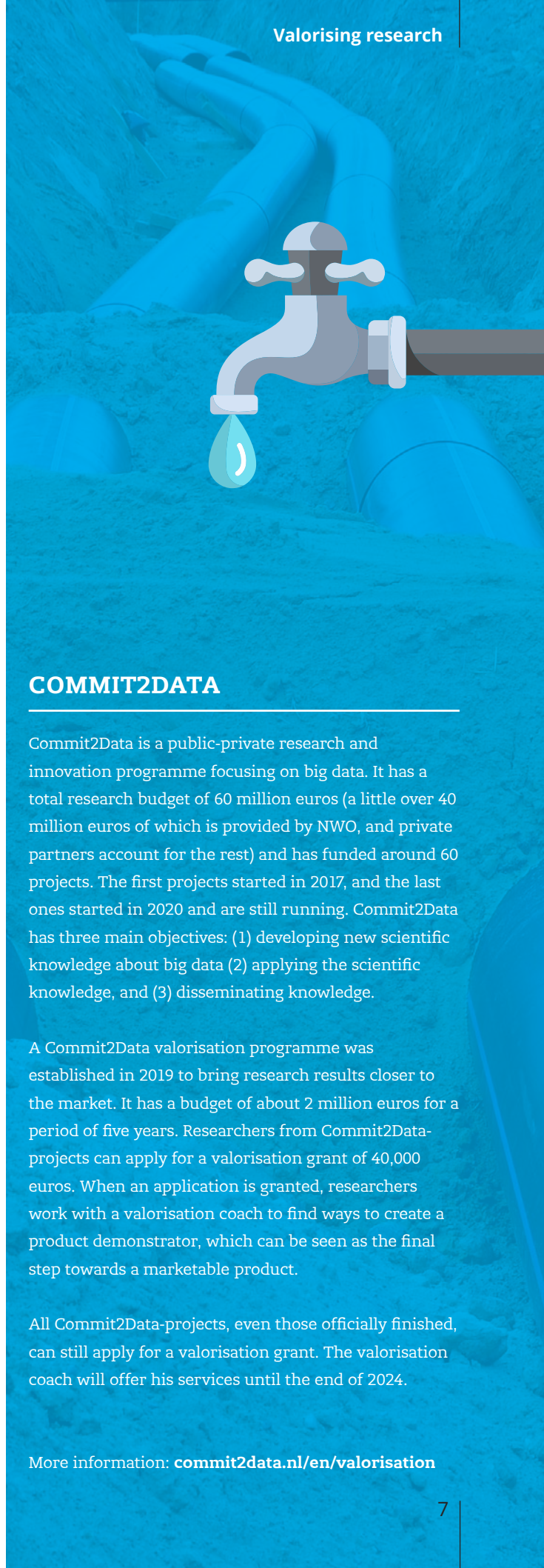


Boudewijn Haverkort

'Customise the support of valorisation and reserve a budget upfront'

Thanks to these valorisation grants, researchers can build demonstrators, and with these demonstrators, they can then make a new step towards collaborating with a business partner. The Ministry of Economic Affairs and Climate Policy, which financially supports the initiative, has already expressed its satisfaction with the results. Haverkort: 'Despite being a small-scale programme, we see that the smallness of scale works.'

Alexander Lazovik, as one of the recipients of a valorisation grant, believes the grants provide excellent opportunities for both companies and universities: 'Universities can do something which does not belong to their core business, namely bring ideas to the market. And companies can do something which otherwise is still too risky for them: create a demonstrator which focuses on the added value for businesses, allowing them to assess the market potential of the research results achieved.'



COMMIT2DATA

Commit2Data is a public-private research and innovation programme focusing on big data. It has a total research budget of 60 million euros (a little over 40 million euros of which is provided by NWO, and private partners account for the rest) and has funded around 60 projects. The first projects started in 2017, and the last ones started in 2020 and are still running. Commit2Data has three main objectives: (1) developing new scientific knowledge about big data (2) applying the scientific knowledge, and (3) disseminating knowledge.

A Commit2Data valorisation programme was established in 2019 to bring research results closer to the market. It has a budget of about 2 million euros for a period of five years. Researchers from Commit2Data-projects can apply for a valorisation grant of 40,000 euros. When an application is granted, researchers work with a valorisation coach to find ways to create a product demonstrator, which can be seen as the final step towards a marketable product.

All Commit2Data-projects, even those officially finished, can still apply for a valorisation grant. The valorisation coach will offer his services until the end of 2024.

More information: commit2data.nl/en/valorisation



The documents will be published on ict-research.nl. The funding decision is expected this spring.

'It is not a matter of us wanting to grow. The informatics sector simply needs to grow to meet the needs of our rapidly digitalising society', says IPN Board member Gerard Barkema. Together with Cocky de Wolf, policy director at Utrecht University, he explains the ins and outs of the Sector Portrait Informatics and its accompanying Sector Plan that are currently in the making.

Sector plan to strengthen foundations

By Sonja Knols

When Minister of Education, Culture and Science Robbert Dijkgraaf recently announced that he planned to invest 200 million euros per year on sector plans, the deans of the science faculties approached IPN to come up with an integral plan for the entire Dutch academic informatics sector. The financial part of this plan referring to the three technical universities and Wageningen University will be accommodated by the Sector Plan Technology, and the other part will be integrated into the new Sector Plan Natural Sciences.

'The aim is to help consolidate strengths and improve deficiencies'

CONSOLIDATE AND IMPROVE

Barkema sums up why investments in informatics are needed, now more than ever: 'We have the worst student-to-staff ratios of all scientific disciplines, virtually all routes in the Dutch Research Agenda lean on computer science, and the job market is desperately seeking IT talent.' De Wolf adds: 'An international research assessment committee that recently reviewed Dutch informatics research also recommended that the Dutch government invest in academic informatics. Not only to relieve the burden of education but also to make up for the significant lack of funding that has been available for the fundamentals of the discipline over the years.'

BRIGHT, DIVERSE FUTURE

First and foremost, the sector plan will enable the hiring of new staff. Barkema: 'Since eventually the amount of direct government funding for informatics will also grow as a result of the growing student population, I see a bright future. Although they are only a first, perhaps small step, these sector plan funds will certainly help make things better.' 'What's more,' De Wolf adds, 'one of the explicit aims of the sector plan is to increase diversity. At least fifty percent of the sector plan positions will be occupied by women. We need more diversity to build a stronger base for our sector, which in turn is indispensable in shaping our future society.'