

Corporate Challenges from DOaccelerate 2020 - 2022

perpetuo		Firm Infrastructure		DEW21	
SCHULZ		Human Resource Management		ID LOGISTICS	
SHA SCHEFFLER HELBICH ARCHITEXTEN	ARDEX	BVB 08	Technology Development	World of Wagas	Bartels mikrotechnik PBM
Procurement					
PLANET I4.0	JDT	COMPLEO	Marketing & Sales	DOODATA	DEW21
Inbound Logistics	Operations	EMSCHER GENOSSENSCHAFT VERBAND	Outbound Logistics	Service	MEGLA digital, personal, reliable.
	LENSING MEDIA		BVB 08	RHENUS LOGISTICS	

perpetuo

A 100% digital, smartphone-based operational solution for a complete entrepreneurial ecosystem.

perpetuo is an internationally operating group of companies based in Dortmund (Germany) and Prague (Czech Republic). Core business is consulting (within our so-called management consulting boutique) in the areas of venture management, strategy execution and restructuring. This includes strategic implementation projects, development of new markets and transnational restructuring projects as well as the development, project planning and introduction of new business models as a start-up. Our clients are Dax-30 companies.

1. Challenge Introduction

We are launching a complete entrepreneurial ecosystem with over 50 spaces (co-working space as a members' club) and need a 100% digital, smartphone-based operational solution (access management, rental of spaces/offices, billing, ...) both for us as a company (administrator) and for the users* (freelancers, startups, corporates, VCs).

2. Challenge Details

Our state-of-the-art ecosystem has freelancers, startups, corporates and VCs as potential users. They can rent individual spaces, entire offices or meeting rooms (diversified pricing model). We are looking for an end-to-end solution for the management and for the users. 100% digital.

This includes (by way of example):

- * Access management (main door on building / office door on 6th floor).
- * Capacity management (utilization of spaces/rooms/rental)
- * Billing (automation)
- * Data analysis
- * Customer Best Practices / Learnings / Room for Improvement
- * Notification management for users

As part of the challenge, we decided that we would use Tobit's "Chayns" software as the technological platform for the required application. Therefore, a solution must be connected to this platform via APIs or be based on this technology platform.

DEW21

Creation of a software solution for semantic analysis of texts in digital media, social media and blogs / forums to identify customer behavior, trends and current topics.

Dortmunder Energie- und Wasserversorgung GmbH (DEW21) was founded in 1995. As a modern and sustainable municipal partner, DEW21 stands for deep and versatile expertise in secure energy and water supply that is continuously adapted to the needs of its customers and the market. Becoming a modern life-supply company, not only classic energy products but also the supply of digital solutions in an urban context (SmartCity) play a decisive role.

1. Challenge Introduction

Creation of a software solution for semantic analysis of texts in digital media, social media and blogs / forums to identify customer behavior, trends and current topics.

2. Challenge Details

In an increasingly digitalized world, it is becoming ever more crucial to identify trends at an early stage and also to analyze the behavior of customers in the digital sphere and to draw appropriate conclusions from this. DEW21, as the utility company of the city of Dortmund, also faces this challenge. In order to tackle this, a solution is to be created within the scope of the challenge to analyze activities in various digital channels and to create reports and analyses based on this so that appropriate strategies and measures can be derived.

The solution should perform the analyses automatically and present them in reports with various visualization options. DEW21 employees should only initiate the analysis process and set the intervals at which the analyses are to be carried out and the reports created.

A mandatory requirement for the solution in terms of analysis is that it includes, in particular, online newspaper articles, blog posts, forum entries and social media. Likewise, the first step only requires the analysis of German-language texts. However, an analysis of texts in other languages in the area of social media and locally limited to North Rhine-Westphalia should also be available in the future. The solution should have appropriate filter functions (e.g., focus on a specific source, spatial restrictions, language, analysis period, and frequency of analysis) that can be used to specify or narrow down the analyses. An optional feature of the solution is image analysis (logos of DEW21 and subsidiaries) in social media. A thematic focus of the analysis should also be individually selectable. Topics could be, for example, electricity/water/gas, power outages, in connection with DEW21 as a company as well as its subsidiaries DONETZ, DOdata or stadtenergie. In a further expansion stage, a semantic analysis with regard to the tonality (positive, neutral, negative) of the contributions is also possible.

The automated reports must be customizable by employees, especially in terms of their presentation (e.g. diagrams, colors, etc.) and frequency of generation.

Gesucht werden Tools & Services von HR-Startups, welche systematisch und automatisiert dabei unterstützen, mehr Bewerbungen zu generieren und/oder wechselwillige Kandidaten zu identifizieren.

1. Challenge Introduction

ELC Schulz sieht sich als moderner Fachbetrieb im Elektro-Handwerk im Rahmen seiner Wachstums- und Zukunftsvisionen immer mehr der Herausforderung ausgeliefert, qualifiziertes Personal für die anspruchsvollen Herausforderungen zu finden. Hierbei erst einmal vollkommen unabhängig, ob es sich um Meister*innen in der Elektrotechnik für den Bereich Erneuerbare Energien oder Elektriker*innen für Energie- und Gebäudetechnik oder Projektleiter*innen Elektrotechnik Innendienst oder ähnliche Positionen handelt.

Gesucht werden Tools & Services von HR-Startups, welche systematisch und automatisiert dabei unterstützen, mehr Bewerbungen zu generieren und/oder wechselwillige Kandidaten zu identifizieren. Einzige Voraussetzung ist, die Lösungen müssen auf die deutsche Sprache adaptierbar sein.

2. Challenge Details

Der Fachkräftemangel, nicht nur im IT-Sektor, nimmt seit vielen Jahren spürbar zu, gilt mittlerweile für eine Vielzahl von Branchen und ist häufig die größte Wachstumsbremse für innovative Unternehmen. Gerade auch im Handwerk macht sich das Fehlen eines ausreichend großen Zahl motivierter und talentierter Menschen bemerkbar um Konzepte wie Smart Living, Smart Building oder Smart Mobility schnell und effizient umzusetzen.

ELC Schulz setzt für seine Kunden im Elektrobereich alle innovativen Ideen um – angefangen von Elektrotechnik und Beleuchtungstechnik, über Photovoltaik und E-Mobilität bis hin zu UVC Desinfektion. Hierfür wird dringend qualifiziertes Fachpersonal in ausreichender Menge benötigt, welches ELC Schulz selbstverständlich kontinuierlich weiterbildet und mit spannenden Projekten ködert.

Auf Basis dieser Grundvoraussetzungen werden HR-Startups gesucht, welche Tools & Services anbieten um entsprechende Fachkräfte gezielt anzusprechen und den Bewerbungsprozess effektiv abzubilden, um möglichst hohe Konversionsraten zu erzielen. Eine zusätzliche Option ist die automatisierte Identifikation von potenziell wechselwilligen Kandidaten über diverse Datenpools oder Social Media Plattformen.

Die folgenden Anforderungen werden an die Lösung gestellt:

- möglichst automatisierte Abläufe / Prozesse
- große Wahrscheinlichkeit, dass das Tool auch für das Elektro-Handwerk, die Elektro-Branche funktioniert
- einsetzbar auf Basis der technischen Spezifikationen / benötigen Daten in der DACH-Region (primär Deutschland)
- DSGVO-Konformität
- die Adaption auf die deutsche Sprache ist zwingend erforderlich
- das finanzielle Investment für einen ersten Piloten muss im Vorfeld kalkulierbar sein

In Bezug auf die Lösung sind wir vollkommen offen für unterschiedliche Ansätze. Unabhängig davon ob rein datenbasierte Tools, welche auf bestehenden Datenquellen aufsetzen oder Services, welche die Kommunikations- oder Bewerbungsprozesse optimieren, freuen wir uns auf eure Bewerbung.

Wir freuen uns auf eure Ideen und sind ganz gespannt auf die gemeinsame Zusammenarbeit im September. Gerne stehen wir im Rahmen der Bewerbungsphase für Rückfragen und weitere Informationen zur Verfügung.

ID Logistics

Development of a software solution for the optimized physical deployment of personnel as well as a visualization of the workload for its control.

ID Logistics is a global logistics service provider, that is represented in 18 countries worldwide, has more than 320 locations and employs a total of 21,000 people. ID Logistics has customers in a wide range of industries, including food retail, non-food retail, e-commerce and healthcare. In Germany, ID Logistics has a total of 8 locations and over 2,000 employees and provides services in the areas of warehousing, detail packing, copacking, return management and transport management.

1. Challenge Introduction

Development of a software solution for the optimized physical deployment of personnel as well as a visualization of the workload for its control.

2. Challenge Details

Optimal deployment of personnel and the best possible planning of deployment, taking into account fluctuations in the order structure as well as the order workload and avoiding disruptions in the process flow, are critical success factors in this regard. As part of the DOaccelerate program, the Dortmund branch of ID Logistics is therefore looking for a software solution that makes it possible to deploy personnel optimally on the basis of the individual situation and parameters and to visualize and carry out the associated personnel planning transparently.

Up to now, incoming customer orders have been scheduled to the individual areas at the Dortmund site according to a standard key for the work/pick stations. This means that no (system-supported) optimization can be carried out in and across the individual work areas. Furthermore, there is currently no live overview of the capacity utilization in the individual areas. In order to solve the situation of personnel planning as well as the monitoring of personnel deployment, the challenge primarily comprises the following tasks:

- (Upstream) scheduling of available sales orders with regard to personnel deployment in the individual areas. Here, an interface connection to the warehouse management system for the export of the sales orders as well as for the import of the order scheduling has to be considered.
- Demand-oriented and cost-efficient personnel deployment taking into account the order structure
- Live visualization of the utilization of the individual work areas

The software solution should thus enable optimal resource utilization in the individual work areas (pick areas) and increase the transparency of the process and material flow by means of visualization for the control center employees, thereby supporting the planning of personnel deployment below ground. Another function that would be desirable in the software solution at a later point in time is the option to integrate individual skills of the employees and to also let these flow into the planning of personnel deployment.

Scheffler Helbich Architekten

Development of a software solution for the prediction of potential new building projects in the sectors of DIY stores, building material trade as well as bicycle trade.

SHA Scheffler Helbich Architekten is an innovative architectural office located in Dortmund and Berlin. SHA focuses on the design of commercial buildings in the areas of DIY stores & building material trade, bicycle trade, sports facilities, industry & commerce as well as administration.

1. Challenge Introduction

Development of a software solution for the prediction of potential new building projects in the sectors of DIY stores, building material trade as well as bicycle trade.

2. Challenge Details

Due to its extensive experience in the DIY & building materials and bicycle retailing sectors, SHA provides its customers with very comprehensive advice, also with regard to future space utilization and optimization. Within the scope of the Challenge, SHA would like to match its existing data-driven experience with publicly available data and information in order to learn in advance about the needs of a potential customer. In the future, this can take the consulting approach to a new level, in that a customer can be made aware in advance of a development that has just taken place at a location and the solution for this can be developed together.

In concrete terms, the challenge will involve the structured recording of public data such as the size of the plot, existing buildings (floor area), number of floors, gross floor area, small scale and clear height in the existing building stock, paved areas for parking spaces and deliveries, as well as the existing green spaces.

At the same time, it will be a question of recording the current capacity utilization, which will be obtained, for example, through mobility data, standing times on delivery, density and turnover frequency of the stored goods, etc. This information has to be linked to internal information / empirical values in order to indicate possible requirements to potential customers and to enter into discussions based on this.

The overall goal will be to develop an automated tool that alerts to planning and change needs at logistics and retail locations. One way to get there, the first step could be a tool in which a list of addresses / locations is entered to filter for potential candidates. In a second step, these locations, which are entered once, are to be checked regularly in order to identify future needs at an early stage and report them automatically. And in the final stage of expansion, the aim will be to use register entries to identify existing locations themselves, analyze them and report them accordingly.

Ardex

Development of business cases based on data from smart floors in the context of buildings and construction projects / building automation and utilization management.

The Ardex Group is a global manufacturer of building materials (especially construction chemicals) based in Witten, near Dortmund. Today, it has 53 subsidiaries with a total of approx. 3,300 employees in over 100 countries worldwide. Ardex is one of the global market leaders in the field of high-quality specialty construction chemicals and systems.

1. Challenge Introduction

Development of business cases based on data from smart floors in the context of buildings and construction projects / building automation and utilization management.

2. Challenge Details

As part of its focus on innovation and the future, the Ardex Group's innovation unit also develops applications and business models that lie outside the Group's previous and typical business areas. In the course of these activities, the Ardex Group also works together with startups on innovative technologies and business models that help the Ardex Group set the course for a continued successful future. As part of the DOaccelerate program, the Ardex Group is looking for startups that develop innovative solutions and business models based on innovative products and technologies.

Specifically, the Ardex Group has developed an intelligent floor and is in the process of launching it on the market. The intelligent floor captures the data and activities of people walking on it or interacting with the floor in other ways. The Ardex Group plans to add this intelligent floor to its product portfolio in the coming year and offer it to its customers for integration into smart home and building projects. Initial tests have already been implemented and corresponding data can be collected and used. The Ardex Group would like to use this intelligent floor to develop use cases and business models and offer various target groups value-added functions tailored to their needs.

For the DOaccelerate program, this specifically means that the Ardex Group will make the data collected by the floor available to startups and would like to jointly develop business models based on this data and their own products. The following data is collected and can be provided:

- Motion data (raster resolution 25 cm x 25 cm)
- Event data
- Dwell time

What does this mean for you? Outline your ideas & concepts and apply with a short presentation of your products & business models for the DOaccelerate program. So, how can you use the mentioned data or base your application on it? Are you interested in thinking through new use cases and putting them into practice? Then apply and work together with the Ardex Group as part of the DOaccelerate program.

BVB09

Can you create a global, emotional experience for fans worldwide?

1. Challenge Introduction

We are Borussia Dortmund and we want to create real BVB-emotions for our supporters worldwide. Help us develop a unique and emotional BVB-experience for our 25 million fans and partners in Asia. Everything is possible, everything is conceivable!

2. Challenge Details

BVB stands for „true love“ in German “Echte Liebe” and has become a brand with truly global appeal. People around the world associate yellow and black with attractive offensive football, exciting young stars and, of course, the atmosphere with the yellow wall in our stadium. What really is tangible and perhaps an unforgettable lifetime moment is, of course, the physical visit at our stadium with excitement, goals, atmosphere in the Bundesliga and Champions League.

Unfortunately, precisely the stadium visit, the foundation of a true emotional BVB-experience, is only possible for our supporters in Dortmund itself. Especially for our fans and partners in Asia, we want to create an emotional BVB-experience together with you – individual & distinctive. Let’s take fans worldwide on a BVB journey together.

We are interested in everything and super excited about your ideas.... It doesn’t matter if you’ve developed the technology for a BVB digital game, built a virtual reality experience, want to recreate a visit to the stadium in 3D, or just have a good mechanic in mind for regular individual contacts.

Optimally, you already have a basic technology and first show cases with which you can infect and inspire us. We are not stuck in any direction, but certainly would like to gain speed and creativity with you. Our goal is a shared prototype to test our collaborative ideas in real life with our fans. Everything is truly exciting for us – purely digital or linked to standard or individual hardware. We are curious and looking forward to meet you.

What’s next? Apply with a snippet of your idea in the DOaccelerate program.

What do we promise to you? We are open to any exciting idea and will provide you with the resources and access to develop the unique BVB-experience together.

World of Walas

Creation of a carbon-free and emission-free energy network for Phoenix West in Dortmund

Walas is an international group of companies specializing in the planning of sustainable urban development. Our mission is urban development in the broadest sense of the word. For Walas, urban development means more than real estate and land development. Urban development brings together activities, desires and interests of people and cities into a vital and lively whole. Our core business is effective, sustainable programming in close connection with the residents and users of cities.

1. Challenge Introduction

Creation of a carbon-free and emission-free energy network for Phoenix West in Dortmund

2. Challenge Details

We are currently facing various challenges. In addition to the current Corona pandemic, climate change in particular is a central problem. In order to counter the problem of climate change, the transition to carbon-free and emission-free energy systems is a central issue. There are already many young companies that have developed promising approaches and products for building such systems. However, they often face the challenge of testing them on a larger scale in operational use. To solve this challenge, we would like to offer young companies the testing ground and the associated opportunity to test their products and concepts for carbon-free and emission-free energy systems as part of the sustainable urban development of Phoenix West in Dortmund. We would like to discuss with you your concepts, products and ideas for our challenge and look for opportunities to implement pilot projects on site at Phoenix West.

In other words, if you have ideas, concepts, or even better, already developed products to generate or store zero-emission energy, or you are working on solutions to manage multiple energy sources in a campus-like environment, we should talk! Please surprise us with your creative inspiration.

Bartels Mikrotechnik

Can you create a solution to find new applications and partnerships in the field of microfluids, biotech and life science?

For more than 25 years now, Bartels Mikrotechnik has been a globally active manufacturer and development service provider in the field of microfluidics. Together with our partners, we help our customers to find the right microfluidic solution for their application.

As microfluidic SolutionMaker, Bartels offers a complete, application-oriented and modular liquid handling system. With our evaluation kits and the mpSmart you can test our mp6 micropump directly in your application. We have already prepared everything for you. We also have a large partner network that enables us to offer you high-quality components tested by us to complement your microfluidic system.

Our business unit microComponents offers you a wide range of microfluidic components. Bartels Mikrotechnik produces and distributes microfluidic products – especially for miniaturized and portable applications. Our key products are micropumps that pump small quantities of gases and liquids. They are used in a variety of ways in the fields of biotechnology, pharmaceuticals and medical technology.

In microEngineering our team is constantly working on new solutions for new markets. We allow new components to mature to the patent stage and work on the transition from individual applications to series production. Our goal is to create complete product worlds for a global market.

1. Challenge Introduction

Bartels Mikrotechnik is active in two main business areas: engineering services and product development. In particular, the area of micro components is being increasingly focused on and expanded in future. With mp6 micropumps, Bartels operates in various fields of application, especially in the MedTech and Life Science sectors. These business areas already contribute significantly to annual company sales. The defined goal of the Challenge is to find new applications for Bartels' products and components and to develop new products in cooperation with innovative startups to use increasing available market potential. Shared activities is fully flexible and depend on resources and competencies of both parties involved.

2. Challenge Details

Sectors and use cases for Bartels' technologies are diverse and far-reaching, but should have a clear focus on „Life Science“ aspects. There, Bartels commits experience, expert knowledge and application competence in the use of micropumps and monitoring of microfluids.

For the development of new products based on existing technology, Bartels is looking for cooperation partners who commit complementary competencies. Whether Life Science, BioTech or other application fields – the challenge is to provide convincing innovative products and solutions for the market together with Bartels Mikrotechnik.

Startups can surely use both areas of support: existing technology as well as application expertise of Bartels to further develop their own product in cooperation. So if you are in the life science, medtech or biotech space, Bartels offers you the option to build on a technology stack. No matter if used for handheld devices, implants or other forms of application.

Bartels is looking for cooperations for a combination of hardware and software products with own solutions as well as partners for the digitalization of the Bartels product portfolio. In particular for the operation of pumps and control via interfaces.

In addition to its own products and expertise, Bartels brings three key things to the table:

- a large partner network
- sales support
- existing technologies

The USPs of our pumps

USPs:

- Can handle liquids and gases
 - Liquid: $q_{liq} = 5 - 8000 \mu\text{l}/\text{min}$; $p_{liq} < 700 \text{ mbar}$
 - Gas: $q_{gas} < 25000 \mu\text{l}/\text{min}$; $p_{gas} < 150 \text{ mbar}$
- Only one wetted material (PPSU/PP)
- Small & low weight
 - Size: 30 mm x 15 mm x 4 mm
- High batch production
- Low power consumption (150 mW)

We are looking for innovative products & solutions that can use Bartels' technology to enable joint business models and bring products to market in a scalable way. As already described above, due to the many years of experience in the sectors mentioned, the existing resources and the large network can be used in a potential cooperation in various issues for market introduction or product development.

Perfect Business Match

Can you create a platform to match companies in electrical appliance industry with new products and product ideas?

EFF DEE Commerce & Consulting GmbH has 30 years of proven know-how in the electrical appliance industry and combines all services regarding technology innovation, business model development and market launch in the DACH region under the brand „Perfect Business Match“.

The focus in this context is on the following three segments: 1. Digitals, i.e. the topic of networking, 2. Mechanics, i.e. innovative materials, 3. Innovative Appliances, i.e. appliances with a clear USP for manufacturers and users.

1. Challenge Introduction

The goal of the Challenge is the realization / customization of a digital platform that enables matching of companies with new products & product ideas in a (partially) automated way. This platform shall be used to provide companies in the electrical appliance industry with access to new features, materials and products and, based on the expressed requirements, search for possible solutions worldwide and make suggestions for linking. At the same time, an assessment is to be made of which business models are suitable for the companies' fields of activity.

2. Challenge Details

Part of PBM's service is the placement of new technologies in existing markets, especially the DACH region. Here, startups from different sectors play a very decisive role, as they can offer fully comprehensive products as well as partial components or specialized features which as a add on can revolutionize existing markets.

The goals of the defined matching platform are twofold. On the one hand, the platform is intended to identify potential partners for subcomponents, materials and features when established companies from the electrical appliance industry are looking for new opportunities in product development. This will accelerate innovation and make it accessible to established companies.

On the other hand, (international) startups with market ready product offerings from these field should find potential partners for international product launches and marketing. Especially in the field of hardware, many young companies fail due to the classic market entry barriers and bureaucracy.

However, the matching algorithm should not only establish supply and demand within the information actively entered into the platform, but should also take into account current trends and reports on new products. For this purpose, the platform should have appropriate scraping functions and prepare the collected information in an appropriately structured manner. This information can be obtained from sources such as annual reports, company start-ups, articles, product descriptions, etc.

In addition, products should be evaluated using a matrix of various factors. These have to be defined in more detail in the joint development, but it is the clear goal to underpin products and the matching process with statements on Pains, Gains and Product Quality.

The platform must be able to play out the data obtained to the corporate customers via a dashboard. To this end, companies should be able to create their own log-ins and profiles. Last but not least, the profiles and the data behind them should be used for the matching process.

We are looking forward to your application and your solutions from other areas that are already on the market. Of course, we will be happy to answer any questions you may have during the application phase and are looking forward to working with you in September.

Planet

As part of its activities, Planet GmbH supplies database-supported product lifecycle management (PLM) solutions for planners, designers and plant engineers as well as for operators of process engineering and process technology plants. The solutions cover all aspects related to industrial plants from planning, delivery and construction to structured document management and project handling in maintenance and dismantling.

3. Challenge Introduction

Creation of a solution for interactive maintenance, in particular for 3D laser scanning of rooms, evaluation of image data, detection and evaluation of structural changes and interactive information exchange and connection to existing planning systems.

4. Challenge Details

The challenge aims to create a software solution for interactive maintenance. For this, it is first necessary to capture individual, very different rooms as a 3D laser scan. The 3D laser acquisition must also be feasible under difficult conditions (e.g. poor WLAN / LTE connections, strong magnetic fields, strong shielding, or explosive areas). The goal is to create a surface model of the individual rooms, facilities and their components via 3D laser acquisition. After the model has been created, this and, if necessary, additional image material is to be analyzed using AI and the data prepared for transfer to a CAD system (AutoCAD). The most important goals here are the detection of pipe runs, separation of the components installed in them, the detection of structural changes and anomalies between two scanning / evaluation runs.

This information and analysis will be used in the two following application areas and will enable interactive maintenance:

- Maintenance tour with mobile graphical representation of the model => Augmented Reality supported recognition of a component, display of the respective TAG number on the individual components and manual recording of condition information on the component.
- Maintenance work with mobile graphical representation of the model => Augmented Reality supported recognition of a component and display of the respective TAG numbers on the individual components as well as display of the required metadata and documents for this component. Simple display and simulation support by the 3D model during assembly or disassembly of components.

Finally, the solution created is to be connected to the existing PLM solutions of Planet GmbH via APIs. The aim here is to support the areas of maintenance & installation, conversions in existing buildings, planning discussions and target/actual comparisons, which can be handled via Planet's PLM system.

J. D. Theile

Development of a measuring system for determining angles in lashing and lifting devices with wireless transmission to mobile devices.

JDT is a leading global manufacturer of complete chain systems and accessories for mining and industry, as well as a system integrator of robots in the field of industrial automation. More than 200 years of experience in materials and production is the basis for the quality of JDT products. JDT is proud to offer products "Made-in-Germany". At JDT, we are passionate about providing products of the highest quality, innovation, performance, availability and customer-oriented service.

1. Challenge Introduction

Development of a measuring system for determining angles in lashing and lifting devices with wireless transmission to mobile devices.

2. Challenge Details

The use of lifting and lashing equipment always involves the selection of suitable components. This selection is based on the determination of lifting or lashing angles, the number of load strands, the weight of the load to be lifted or lashed, and other boundary conditions such as the type of lashing or the temperature.

The challenge lies in the simple and reliable determination of the required data by sensors, the development of a compact electronic component for data processing / acquisition of the sensors and the transfer to a mobile system (computer / smartphone / tablet) for the selection of suitable slinging and lashing equipment.

For this purpose, a measuring device is envisaged that can be hooked into the corresponding device to determine the required data quickly, easily and reliably. In the process, the system must be usable for various chains with different diameters and pitches and work reliably in harsh industrial environments.

Corresponding software or an app on the end device then supports the user in selecting the appropriate products and provides additional information on the corresponding application.

There is a great deal of expertise in our company in the field of designing and manufacturing physical prototypes. As part of the Challenge, the goal is to produce a working prototype for testing. What we are looking for is a partner with the expertise in the field of sensor technology and software development that needs to be integrated into the corresponding solution.

In other words: We bring the knowledge in design and you bring the knowledge for the software and sensor technology of the solution.

Compleo

Can you create a predictive maintenance concept for charging poles to ensure flexible and immediate service?

Compleo Charging Solutions AG is one of the leading full-service providers of charging technology in Europe. The company supports business customers with charging technologies as well as charging stations, charging infrastructure software and, if required, planning, installation, maintenance and service. Compleo's offering includes both AC- and DC-charging stations. DC-charging stations from Compleo are the first on the market that comply with calibration regulations. The company is headquartered in Dortmund with further product facilities located in Paderborn. Compleo focuses on innovation, safety, consumer-friendliness and cost-effectiveness. Its customers include Aldi, Allego, Clever, E.ON, EWE Go, Daimler, Siemens and more than 300 municipal utilities in Germany. Compleo started production of its first charging stations in 2009. The fast-growing company currently employs more than 650 people. Compleo is listed in the Prime Standard segment of the Frankfurt Stock Exchange (ISIN: DE000A2QDNX9). In April 2021 Compleo acquired 100 percent of the shares in wallbe GmbH, now Compleo Connect GmbH. In January 2022 Compleo acquired 100 percent of the shares in innogy eMobility Solutions GmbH.

1. Challenge Introduction

For the operation of fast charging stations at highly frequented locations, high reliability and predictability are essential. In order to secure the high investment costs for a charging pole or a charging pole location by low downtimes, we are therefore looking for promising „predictive maintenance concepts“ to simplify service & maintenance and to increase customer satisfaction for the operators (our customers) as well as for the users of our charging poles.

We are looking for products and concepts (sensors, data analytics, etc.) that monitor the current status of a charging station and communicate critical status messages via dashboard or signaling. A solution should be as easy to use as possible, and tie in with existing product developments.

2. Challenge Details

Many high-traffic charging stations carry out a large number of charges during the day and downtimes are associated with a high economic losses. All infrastructures are connected to sufficient data lines and are either located in urban areas or along highways. The goal is to integrate the sought-after solution into a maintenance concept so that downtimes in the charging station infrastructure can be avoided or at least minimized. At the same time, the long-term goal is to optimize the product lifetime and the performance of the charging columns based on the collected data.

The solution should match the following requirements:

- Selection of maintenance-relevant data
- Implementation of best-practice algorithms from predictive maintenance, adapted to the charging infrastructure
- Optimization of maintenance work and maintenance cycles
- Presentation of the evaluations via a dashboard
- Evaluation of the causes for failures / false alarms
- Integration of the failure and service history to improve the predictive maintenance algorithms

Regarding the solution, we are completely open to various approaches. Regardless of whether purely data-based concepts, which are based on existing data sources, or a combination of hardware and software, which either include your own sensor technology or uses commercially available sensors, we would like to get to know you and your idea.

To ensure a high penetration of usage within the company, the solution should be easy to use and accessible via different types of user devices (desktop, tablet and mobile). This ensures that technicians can also access the systems on the road and process their maintenance orders immediately and flexibly.

We are looking for a partner who has initial experience in the following fields:

- Predictive maintenance in electrical installations
- Data analytics
- Embedded system
- IoT or cloud-based systems

We are looking forward to your ideas & your application and are excited to work together in September. We will be happy to answer any questions and provide further information during the application phase.

Emschergenossenschaft und Lippeverband

Optimization and / or automation of anomaly analysis at discharge points of rainwater treatment plants

Rechtlich gesehen sind Emschergenossenschaft (EG) und Lippeverband (LV) zwei öffentlich-rechtliche Körperschaften mit vergleichbaren gesetzlichen Aufgaben. Wir bündeln seit mehr als 90 Jahren unsere Kompetenzen und sind das größte Abwasserentsorgungsunternehmen und Betreiber von Kläranlagen in Deutschland. Was uns vor allem verbindet, ist das gemeinsame Ziel, an Emscher und Lippe ökologisch, technisch und gestalterisch überzeugende Lösungen zu schaffen - in der Region und für die Region.

1. Challenge Introduction

Optimization and / or automation of anomaly analysis at discharge points of rainwater treatment plants

2. Challenge Details

As part of our activities at EGLV, we are also active in the field of rainwater treatment. Basically, precipitation results in a mixing of rainwater and wastewater, which together form a so-called "mixed water". If a certain limit value of the mixed water is exceeded, a so-called discharge situation arises, which leads to the mixed water being discharged into rainwater treatment plants via discharge pipes. The problem with this is that, in addition to rainwater and wastewater, the mixed water also contains other substances that can settle at the point of discharge of the process and even damage it. We are required to check the condition of the discharge points after each rainfall and make an assessment according to predefined criteria. At the moment, this is done manually by employees* driving to the corresponding discharge points after each precipitation situation. In order to speed up and automate this process of evaluation, we are looking for a solution from the field of image recognition and the associated AI Artificial Intelligence, which can recognize the inventory of discharge points based on images and evaluate them accordingly. The goal is to significantly reduce the number of deployments for manual condition detection and evaluation by staff*. As part of the challenge, we can provide the relevant image material and a catalog of criteria for condition assessment.

Lensing Media

Building a system to automatically generate messages in different domains from structured data.

Lensing Media is a family-run publishing company based in Dortmund, Germany. "Local networking" connects all Lensing Media companies. More than 3,000 employees work for our fourth-generation family business. Together, we publish the daily newspapers Ruhr Nachrichten, Dorstener Zeitung, Halterner Zeitung and Münsterland Zeitung, as well as market-leading advertising papers. We operate print shops, postal services and trade magazines, and are also increasingly focusing on our digital business.

1. Challenge Introduction

Building a system to automatically generate messages in different domains from structured data.

2. Challenge Details

The work of journalists has changed dramatically in recent years with the advent of digitization. Technological advances, the emergence of new forms of storytelling, the increased efficiency of automated workflows, and the availability of Big Data have given rise to a new form of journalism known as robotic journalism. Within this field, the term NLG (Natural Language Generation) refers to explicitly programmed systems that, for example, write news stories from structured data. Such systems are characterized by the fact that, once programmed, they no longer require human intervention. However, the development of such a system is tied to deep expertise in various areas such as machine learning and cloud computing, to name a few. At Lensing Media, our goal is to develop such a system to help our newsrooms automatically create news based on data from areas such as sports or finance. To develop a mature NLG system that can be successfully put into production, the following requirements must be met:

- Transparency: understanding how the texts are generated.
- Correctness: no misleading facts
- Modifiability and transferability: Transferability to other domains
- Natural fluency: the generated texts should be written as naturally as possible

Please note that the system must be developed in Python. Also, the underlying algorithms must be based on controllable end-to-end models such as gpt2. Template-based systems must not be used.

DOdata

Detection of the level of condensate separators in the gas network

DOdata sees itself as a DataHub and service provider for the future SmartCity Dortmund. We specifically combine sensor technology (Internet-of-Things), modern digital lifelines and intelligent data services in a platform approach. The result is solutions that improve the digital economy and life in our city. Translating today's requirements for modern business and life into digital solutions is both our challenge and passion.

1. Challenge Introduction

Capturing the level of a condensate collector in the gas network and sending the data via LoRaWAN.

2. Challenge Details

Condensate collectors are installed in a gas distribution network to collect accumulating liquids (e.g. water ingress and condensate from steam and other parts of the natural gas) within the distribution networks. Overflowing of the condensate collectors must be avoided urgently, otherwise the supply may fail. Since the levels of the condensate collectors cannot be determined at present, they are emptied regardless of their actual level. The cost of this is high because the collectors are buried underground. In order to avoid unnecessary effort and associated costs, as well as to increase the condition monitoring of the distribution network, we are looking for a sensor solution that detects the fill level of these collectors and sends the data via LoRaWAN. The challenge with this solution stems from the following:

1. the sensor must be robust enough to be installed underground and be durable and low maintenance. The data transmission equipment and power supply to the sensor should be accessible above ground.
2. the sensor must be able to measure the level through the material of the condensate collectors (usually steel, cast iron and polyethylene)
3. the detected levels should be sent to an existing IoT platform via the LoRaWAN transmission protocol
4. the sensors should be able to be installed in the existing network without major implementation effort (i.e., without civil engineering work)

Rhenus Logistics

Can you create a holistic decision-making map tool to monitor supply chains, cooperation partners and freight routes globally?

Knowing today what will be in demand tomorrow is our core belief. The Rhenus Group is one of the leading logistics specialists with global business operations and annual turnover amounting to EUR 7.0 billion. 37,500 employees work at 970 business sites and develop innovative solutions along the complete supply chain. Whether providing transport, warehousing, customs clearance or value-added services, the family-owned business pools its operations in various business units where the needs of customers are the major focus at all times.

1. Challenge Introduction

Monitoring global supply chains and always looking a little into the future is a constant challenge in order to find perfect solutions for our internal processes, but above all for the logistical challenges of our clients – especially when geopolitical factors become more dynamic. In order to monitor our locations and cooperation partners, logistic hot spots, supply chains, freight routes and to develop a holistic decision-making tool, Rhenus is looking for a digital solution that integrates and connects multiple data sources and provides the basis for better decisions via a multi-variant dashboard.

2. Challenge Details

Currently, all the different data sources converge at different endpoints in our organization. These data is not updated in a coordinated manner and evaluated at least partially unstructured. In addition, the creation of heat maps and visuals involves manual work. I.e. updates do not take place in real time, manual transmission errors can creep in and sometimes contexts and projects are simply perceived too late. In addition, it is currently not possible to consistently integrate our partners and customers into the processes in order to provide them with additional information as well.

The goal of this DOaccelerate Challenge is a solution that on the one hand comprises a central database in which different data sources converge. This data should meaningfully be linked to each other via a dashboard and displayed in varying degrees of detail, enabling both an initial overview and in-depth data analysis. A map tool should be integrated into this interface, which includes all existing locations of the Rhenus Group and, in the long term, also shows options for sensible new locations via data analytics and AI.

The basic features should include the display and clear localization of the group's own locations and companies as well as the addition of the locations of partners and representatives. The map tool should be designed to be interactive and expandable and also provide individual information and reports as pdf and Picture files (PNG, eps etc.) via a download function. At the same time, the internal data sets are to be enriched with additional externally available data. Of particular interest are data on main traffic routes & international flows of goods, infrastructure such as ports & airports, but also central hubs & logistics parks and within the map display of course the representation of geographic conditions & topography (rivers, mountains, altitude representation, etc.).

In order to ensure a high level of usage throughout the entire organization, the focus – in addition to the meaningful results – should be placed above all on usability and user experience. The goal is to also use this tool for sales and strategic planning purposes, and this simply requires a high level of penetration within the workforce. The integration into the existing system landscape or the definition of general API calls should also be shortly thought about.

We are looking forward to your ideas & your application and are very excited to work together in September.

DEW21

Development of a system for recording visitors in stores and data transmission via LoRaWAN

Dortmunder Energie- und Wasserversorgung GmbH (DEW21) was founded in 1995. As a modern and future-oriented municipal partner, DEW21 stands for deep and versatile expertise in the secure supply of energy and water, which is continuously adapted to the needs of customers and the market. On the way to becoming a modern life supply company, not only classic energy products but also the supply of digital solutions in an urban context (SmartCity) play a decisive role.

1. Challenge Introduction

Development of a system for recording visitors in stores and data transmission via LoRaWAN

2. Challenge Details

Not least because of the current situation, the registration of customers and visitors in stores is important. In addition to "Covid-19 purposes", it can also be used to derive information for marketing, staff deployment, energy use and the control of energy systems such as air conditioning. To meet all customer limits, recording must be accurate and operate in real time. Data must also be reported back to the store in real time - for example, via an app or a configurable "visitor traffic light." The data should also be available externally, for further real-time analytics or marketing, for example.

The challenge is to develop a system to capture visitors in the store and enable data transmission via LoRaWAN. In addition, the challenge can be extended to include a solution for measuring customer satisfaction and displaying real-time data. The transmission of the data via LoRaWAN creates flexibility for the location-independent use of the system.

MEGLA

Can you create a software for managing global systems, identify malfunctions and irregularities with productive action recommendations?

Everyone is talking about digitalization – we do it.

MEGLA is one of the leading service providers for the efficient digitalization of business processes. Our solutions create added value, ensure transparency and enable completely new perspectives.

We make business smart: We support customers in digital transformation as well as in optimizing existing implementations. We work independently of industries for companies of different sizes – from medium-sized businesses to large corporations.

Our name stands for 30 years of experience in digitalization. Founded with a scientific background, we are now an official partner of leading IT industry giants. From OSISOFT to Microsoft and Oracle to MPDV, Transpara and WAGO.

Thanks to our agile team of programmers, software developers and system administrators, we can offer our customers holistic end-to-end solutions.

1. Challenge Introduction

Fault reporting is an essential element in the context of keeping data platforms and other software systems running as smoothly as possible. Globally installed customer systems constantly deliver data to MEGLA in order to map running processes continuously and to identify malfunctions or irregularities at the same time. In this challenge we are looking for a solution that records the resulting data, classifies it, and transmits productive recommendations to our employees. These recommendations should be based on data, clustering and empirical experiences.

2. Challenge Details

As described, MEGLA provides services and maintenance for the operation of data platforms for our diverse customers worldwide. Due to the great success and the increasing number of installed systems, but also due to the ongoing globalization of our existing customers, the number and variety of occurring error messages is almost inevitably increasing. From the current level of approx. 400 fault reports per day, we expect a strong growth to up to 1,000 reports per day in the future.

The fault report is received by the MEGLA employees via a standard e-mail (in a structured XML format), including relevant information. Different error messages are therefore part of the daily workload. But for each message the potential causal factors must be eliminated one after another to operate the corresponding system smoothly again. Triggers could be interrupted data connections, defective hardware, maintenance work or simply errors in the system or usage errors. The main task here is to decide quickly if an intervention is needed and what kind of actions should be carried out.

The manual effort increases with the further growth of MEGLA. The training of new employees is time-consuming and the quickness to assess process faults report highly depend on personal experience as the main key factor for a fast and reliable service. Already today, status quo includes first systematizing of incoming mails by MEGLA. Historical data is available.

Our goal with this DOaccelerate-Challenge is the development or customization of a tool that takes over the systematic clustering of error messages and provides a continuously improving process of directly displaying most probable causes of errors and announcement of concrete recommendations for action.

We welcome your application to solve our challenge if you have experience in data analysis, clustering of structured data as well as evaluation and either rule-based display of recommended actions or machine learning approaches and have developed a product or MVP in this area. Please also contact us if you have experience in automation of processes and messages.