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■ INTERRUPT INSIDE

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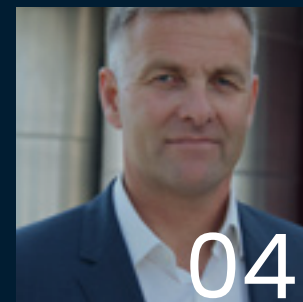
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it will revolutionize the
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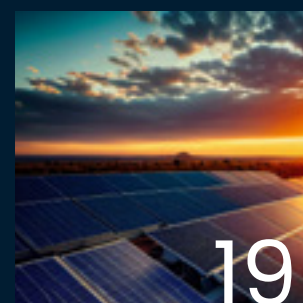
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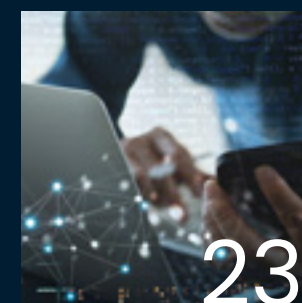
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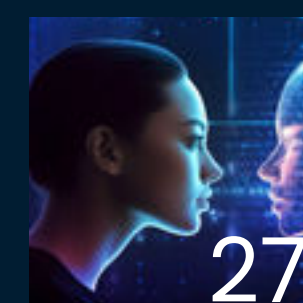
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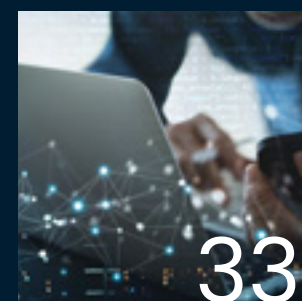
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EDITORIAL

Kenneth Ragnvaldsen

CEO DATA RESPONS

Enjoy a new edition with
tech heavy content.



Data driven disruption. Sustainability through technology. And is AI here to take my job?

Let's kick off with the latest global tech hype. AI generated tools like Chat GPT and Midjourney have really opened the public's eyes to the endless possibilities that lie within the power of software and Artificial Intelligence. Just look at the cover of this magazine, by implementing the latest AI and AR technology we can combine a digital experience with physical magazine. And our designer saves a lot of blood, sweat and tears in the process.

Today even software development and consultancy are up for grabs according to the AI fans out there. Therefore, we decided to ask Chat GPT how it thinks it will affect the software consultancy business. Meaning our business. And we talked to one of our own specialists to hear his opinion on the same topic. A classic Man vs. Machine story.

Data driven technology is disrupting established industries. One such example is the automotive industry. An industry that has gone from producing a chassis with an engine, to a complex software stack on four wheels. Our German subsidiary Donat IT has helped BMW take their data to the cloud. By creating a cloud-based service cluster that is used for the testing of the components for electric vehicles, BMW now has a scalable cloud solution that meets all requirements for an agile team creating the electric cars of tomorrow.

Another disrupter is solar energy. Fast becoming the cheapest energy source on the planet. Included in this edition of Interrupt Inside you can read about the Solar Power Storage, developed by the IT Sonix team in Leipzig. With our help, our client SENEK has enabled homeowners to store the energy produced by their solar panels, utilising the sun even when it's cloudy.

In addition to our client directed efforts to create a more sustainable future, we are also taking action internally. In 2022 our annual Hackathon focused on Green IT, letting teams from across the company come together to create new ideas.

This time, the teams came up with ideas for both Solar panels, smart meters, agricultural statistics and reusing old keyboards. Anyway, a very nerdy, but potentially very successful hack is to use "green code" that uses less energy when being run. And by now our world is running a lot of code. If every computer would use less energy to run some lines of code, we would quickly reduce huge energy usage globally.

Moving on to the more hardware driven side of the Data Respons Group, you can read about how our Swedish subsidiary inContext is enabling



Data driven technology is disrupting established industries. [...] Another disrupter is solar energy. Fast becoming the cheapest energy source on the planet.

sustainability through their next gen electrical wire harness designs. The company has previously worked on both electrifying the boat industry and e-trucks, so it's safe to say that they are truly helping the mobility sector break new boundaries in their hardware design.

Lastly, we included a piece on the social aspect of the business – the people behind the code. Our security experts at Microdoc in Munich have given us their view on today's highest IT risks, and it's not the technology. Read about the simple, yet efficient ways you can limit the risk of human error, and limit the damaged once the mistake is already made.

As you know we are on a mission to enable a digital future here at Data Respons, and having fun at the same time. I hope you see these articles, as I do, as testaments to that.

Enjoy,

Kenneth

Cloud-based SERVICE CLUSTER

Managing the testing of BMW's electric vehicle components

Car manufacturers spend years of development and testing before they put a new car model into mass production. Everything is controlled and tested, to find the best possible solutions and to fix problems before the new model goes to the assembly line.

Testing for BMW

For that testing you need a large number of pre-production vehicles. To build them in all the different configurations needed, and to keep track of their specifications, you need a planning system. That's where Data Respons subsidiary DONAT IT comes in.

As specialists in individual software for the automotive industry DONAT IT is helping BMW manage the production of test vehicles. Most recently it has developed a new cloud-based system to manage batteries and drivetrains of electric vehicles.

Testing everything

– It takes 5 to 7 years to develop a new car model, Jochen Scheikl, project manager at DONAT IT explains.

So, if BMW plans to launch a new car in 2029, they start development now, including planning the parts and cars needed for testing. The tests cover everything: handling, aircon, radio, noise, suspension, crash tests etc., so that they can fix any problems before putting the car into volume production. To order and to specify these test vehicles they have a custom-built test management system, and we support and maintain that system.

– In 2019 BMW came to us and asked us to build a specific test management system for the components related to electrification. There are two main components: The high voltage battery replacing the conventional combustion engine, and the drivetrain, transmitting the energy from the battery to the wheels.

Excel overwhelmed

As these parts were fairly new to the development process, they were not managed in the main test management system, but kept in a separate Excel file, according to Jochen Scheikl. Over the years, that Excel file had grown and grown, from 100 lines to several thousand,



representing millions of euros worth of equipment. Seriously overstretched, the Excel solution began to create problems.

Jochen Scheikl and his team were tasked with building a customized solution. In addition to that, BMW wanted a completely new platform for its test management software, to replace the existing, which was implemented some 15 to 20 years ago.

- We could have integrated the Excel data concerning the electric vehicle components into the old system, Jochen Scheikl explains.
- But instead, BMW wanted to gradually replace the old system with a new one and decided that the management system for the electric vehicle parts should be the first to go into that new system. So, we developed a cloud-based service cluster for them. In fact, this is the first application running on BMW's own AWS cloud.



Private cloud

Jochen Scheikl and his team integrated four services into a private Amazon cloud. Apart from the management of parts used for the battery and for the drivetrain, it's a user authentication service and a master data service. After an exceptionally fast development period of only 10 months from the first meeting to implementation, the system has gone into production. Also, the team has added more features to the service, mainly new interfaces to other systems in BMW's test management.

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To illustrate its size and complexity, the electric vehicle components system currently contains between 15 and 20.000 high voltage batteries used for testing purposes, and nearly twice as many drivetrains, as each vehicle typically has two drivetrains, one for the front axle and another for the rear axle.

From old to new system

From now on, according to Jochen Scheikl, BMW will step by step abandon its old test management platform and replace it with the new cloud-based service cluster. Isolated functions will be transferred to the new system, and over a period of a few years the old system will gradually be sent into retirement.

– It's a delicate undertaking to replace a system that has been running for almost two decades. You can't just cut it off and start a new one. It will take some time, and as we're already very much involved in this transition, I hope BMW chooses to continue the partnership with DONAT IT on this journey.

Easier to maintain


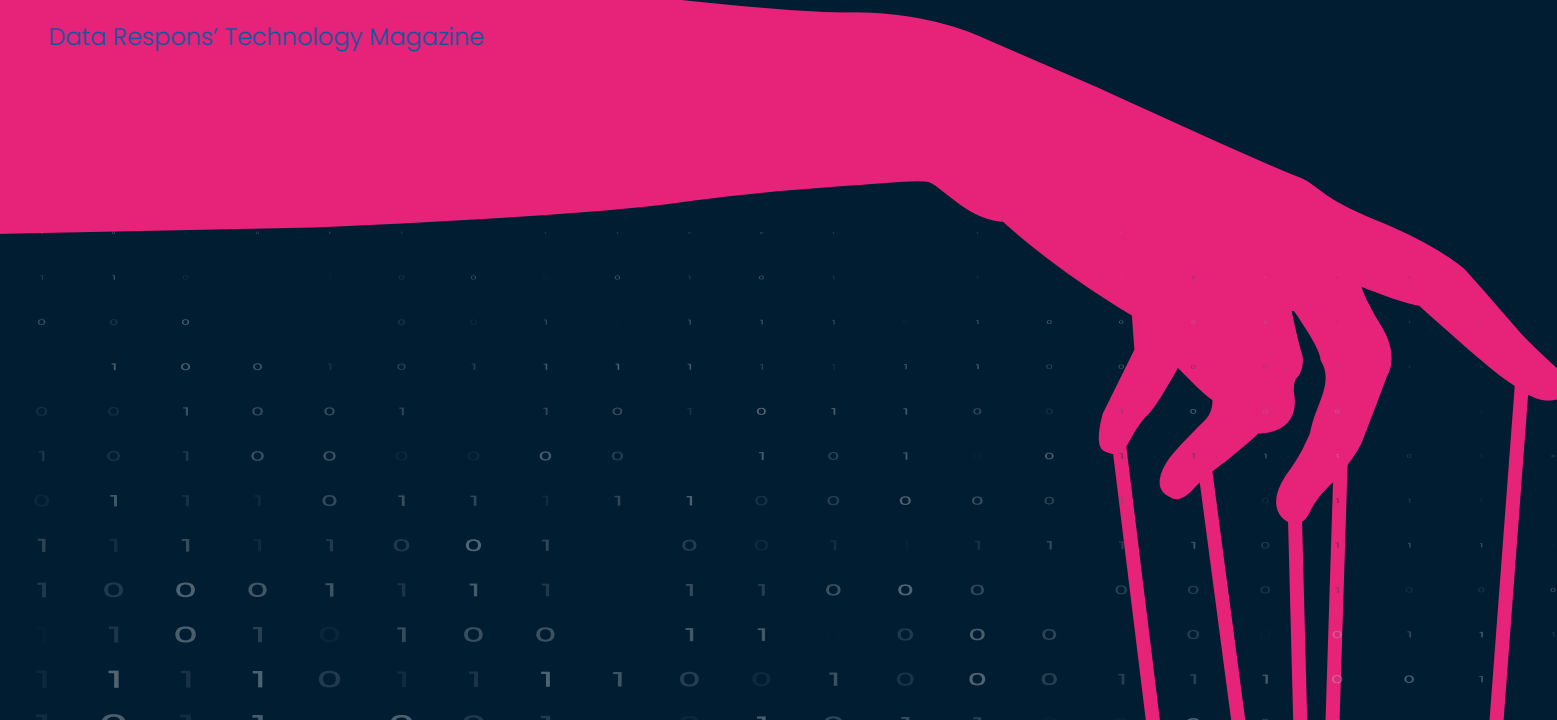
According to Jochen Scheikl, the new system is much easier to maintain and to update. It consists of small services, each with its own data base. That means you can add a new function to for instance the Master Data service without disturbing the rest of the system. The cloud-based architecture allows for adding it online without any interruption. And if you want to add the new function to other services in the system, you can do it just as easily, without any shutdown. Furthermore, the system front-end is web-based and can be accessed with any

We've participated from the very beginning, collecting user requirements, doing workshops, developing and implementing the system, both front- and backend, software and hardware, data base – everything. Moreover, we do the maintenance and customer support, and we develop new functions and services according to the client's needs.


We've been deeply involved in this from day one, and we are rather proud of what we've done. Nor least considering, that this is one of the first systems running on BMW's private Amazon cloud.

KNOWING THE BUSINESS MEET DONAT IT


A crucial part of promoting the DevOps approach is DONAT's in-depth knowledge of the German automotive industry. They know the business just as well as the OEMs themselves. Furthermore, being situated near the car manufacturing giants of Southern Germany, DONAT can interact closely with its customers, working in short feedback loops to increase efficiency.



Social Engineering



The biggest IT security threat
doesn't come from technology



It's called social engineering. It's simple but efficient, and it requires no specialist tech knowledge: You just make up a credible cover story, send an email and sit back and hope the recipient is careless enough to give you the requested confidential information. It works. Data Respons subsidiary, MicroDoc, has once again proven it on behalf of their clients.



According to MicroDoc directing manager Dr. Christian Kuka, the most serious security threat doesn't originate from technology. It's the people using it. Criminals take advantage of the fact that many employees have a rather careless attitude towards IT security, relying on IT administrators to handle it.

This attitude means they are easy prey for criminals using the simplest of methods to extract confidential information from them.

Christian Kuka knows, because Data Respons subsidiary MicroDoc has done it on behalf of client companies to help them find security vulnerabilities and assist them in their efforts to raise awareness among employees of the daily threats they're facing:



We registered a new domain that sounded very similar to the original domain of the user, and used it to contact employees via email, posing as the company's CEO. We invented a story and created some documents that made it plausible for the CEO to request confidential information from employees. And it worked.

If only one employee does what our fake CEO requires, that single person is enough to get access.

A simple email is enough

Most people think cyber threats are about shady Russian networks, malware, and viruses. But according to Christian Kuka, a simple email is enough. He believes that social engineering is a bigger danger to companies than malware and other technology-based threats. Network administrators can solve most technical issues, provided they are given enough resources to stay ahead of the publicly announced vulnerabilities. However, social engineering is everybody's problem, but not all companies – and

certainly not all employees – take it as seriously as they should.

According to Christian, as companies grow bigger, the more vulnerable they become. In smaller companies, everybody knows each other, and they frequently meet in person, thus making it more difficult to succeed with for instance email fraud.

Regulations and red tape

That's not the case in large companies, and adding to the problem is the fact, that large entities need strict processes and regulations to function. Thus, getting things done can seem to involve a lot of red tape, and often employees try to find workarounds to avoid the hassle. So, it might not be that unusual to receive an email from somebody in another department whom you've never met in person, asking you for help. And obviously, that help will include sending him or her your confidential information.

We've done this kind of social engineering tests for several companies. It's important to note, that we only use publicly available information. There is so much information out there on company websites, LinkedIn, or Facebook. You can easily collect enough facts to create the illusion that the emails you're sending come from people inside the company.

Afterwards we go back to the customer with the result and reach out to the employees to teach how to deal with this kind of threat.

We make them more aware of their personal responsibility for the overall security posture of the company. For instance, we tell them that if they receive

an email that seems suspicious, the simplest and most effective thing to do is to pick up the phone and call the people involved directly.

Christian Kuka admits that security is annoying, i.e., complex passwords for the operating system, multi-factor authentication with additional devices, and expiring accounts that need to be renewed. It always is because security means adding some extra steps to ensure reliable authentication and authorization. And again, the bigger the company, the more hassle because following the Principle of Least Privilege, employees should only have enough access that they need to do their job. However, in many cases, the definition of 'their job' is not clearly defined and access restrictions are too tight. It's a question of finding the right balance. And furthermore, management must focus on educating the company's employees properly, so they understand the reasons behind the extra security measures and also frequently questioning of the usefulness the extra security measures.

Tech is important too

Although Christian Kuka states that people are more important than technology in building cyber resilience, tech can support the fight in many ways. For instance, you can set up a company's email system so it automatically marks outside messages, which then should be examined extra carefully by their recipients. And not least, you must think differently about your digital infrastructure than before.

In the past, administrators tried to build a secure network infrastructure inside the company, protected by external firewalls. When you were inside, access to one machine significantly improves your chances to get access to other internal machines, i.e., by manipulating file shares.

Today, the idea of a secure company network should be obsolete. Now, we must think of every single computer as directly connected to the internet. That means, that people inside the company should be subject to the same monitoring and

authentication procedures as people from outside. As soon as we think that a service should not be facing the public internet, we should immediately think about if the service itself is the right choice for the given requirements and not thinking about how to hide the service in a company network.

Double protection

Every part of a company's digital infrastructure should be protected against internal machines in the same way it's protected against outside machines, according to Christian Kuka. And you should divide your infrastructure into compartments, so that a security breach only can affect part of your operations. Also, it would make good sense to use different kinds of operating systems and different kinds of services that fulfill the same purpose. In case of an attack only a part of your business is compromised, and you can switch to an auxiliary system. This approach has obvious drawbacks, making life harder for employees. But as mentioned earlier, security is annoying. No way around it. But it is accepted by employees if they know the reason behind it.

As MicroDoc is mainly a software technology company, specializing in complex software solutions for automotive, energy, and finance, social engineering prevention and awareness constitutes only a minor part of its portfolio. However, Christian Kuka is looking for more assignments in that domain, because to him it is an important but underrated part of cyber threat mitigation. In his opinion, many companies are not giving it the attention it requires, making themselves vulnerable to attacks.

Christian Kuka says:



We work a lot with the technology part of cyber security. But the social engineering part is even more important, although many companies still think it's unnecessary to raise their employees' awareness in that area. They believe too much in technical solutions. There is a false impression, I think, that technology can solve the problem, but that's not the case. It's the people, not the technology.

THIS IS MICRODOC

MicroDoc Computersystem GmbH specializes in solving challenging software problems, which require in depth knowledge of end-to-end technology and business scenarios (including mainframe computer, networks, desktops, mobile devices and embedded systems).



Solar POWER STORAGE

The battery to power your home

As more and more homeowners invest in solar panels, they invest in power storage as well, to save the energy they produce for later use. The German-based Data Respons subsidiary IT Sonix is assisting one of the leading European developers of state-of-the-art, smart, and connected energy storage solutions.



The fast-growing Leipzig-based company SENECE is spreading its wings, expanding from Germany to Europe and beyond. To facilitate current and future growth, SENECE is expanding and updating its portfolio of energy storage solutions for private homes, to fit new customers and markets.

Since 2009 SENECE has been in the business of developing sustainable energy solutions integrating solar panels, energy storage, and charging stations for electric vehicles. Currently, 75.000 SENECE storage systems are operating across Germany. That number is expected to increase sharply, not least due to the current energy crisis emphasizing the advantages of homeowners producing and consuming their own energy.

More than a battery

The centerpiece of the SENECE portfolio is the SENECE.Home energy storage box, of which the newest version named SENECE.Home 4 can store up to 25,2 kWh. But a battery is not just a battery, and it's not only defined by its storage capacity. To deliver value to the customer it must integrate with other systems and infrastructures, like billing software, installing and maintenance systems, backends, data bases and much more.

Since 2019, IT Sonix has developed a large part of the software doing that job. With currently, around 45 consultants engaged in various SENECE projects, it's one of the largest engagements in the IT Sonix portfolio.

The IT Sonix solar power platform team is working on the newest version of the energy storage, the Home4, as well as on its predecessor, the Home3, and on various other connected devices and services. For instance, the software to configure the storage unit, the solar panels connected and the wall box for charging an electric vehicle. Also, the system has to be configured

when connected to the energy grid. And not least, the installers selling and installing the system have their own web interface with all the technical information, calculation tools etc. they need.

Began with billing

It all began, back in 2019, with billing. The year before, SENECE was acquired by the 3rd largest energy company in Germany, EnBW, and subsequently hired IT Sonix to help migrate to the EnBW billing system, named PowerCloud.

That accomplished, IT Sonix began updating the web portal used by the more than 1.200 installers selling and installing the SENECE products. The PIP (Partner Installateur Portal) helps installers find the right solution for the customer, dependent on the energy needs of the household, the position of the solar panels on the roof etc. The new PIP is making life easier for installers, for instance allowing them to configure the storage unit via the cloud instead of connecting directly to the unit via cable. The PIP is designed with modern technology, including the latest Angular tools.

Splitting the monolith

The next assignment was to modernize and scale the backend of the system. One of the key people in that work was Sven Thiergen, Senior Backend Developer covering parts like backend business logic, database handling, real-time message processing and cloud deployments (Kubernetes).

The old version was built as a monolith. It was reaching its limit and starting to get into problems to scale, Sven Thiergen explains.

So, it was decided to split the monolith into sub-parts and to deploy a microservices architecture instead. Also, new additions and features were to be done as microservices deployed in Kubernetes. With a modern cloud approach the backend is now ready to handle much more data than before.

Peter Hoffmann, one of IT Sonix' two project leads, elaborates:

It has been an interesting challenge to design a backend that can scale, while also being able to store large amounts of data. SENECE gives a 10-year guarantee on the storage capacity of its

batteries, and as the batteries are the most vulnerable part of the whole system, all battery related data is stored. In fact, more or less any data from the system will be stored for a long period of time, to improve the design and to develop predictive maintenance tools. We're working on that project as well, helping develop machine learning tools to reduce defects and crashes in the future.

Real-time communication

Describing the technology, Sven, and Peter point to one specific feature in the new, updated SENECE.Home4 device they find especially important: real-time communication.

Currently, the embedded control system of the device transmits data every 5 minutes. The new version has switched to real-time communication, with Kafka being introduced as event streaming and central messaging platform to make the SENECE.Home 4 a truly real-time system. This allows for much quicker ways to control, supervise and prevent, for instance to avoid overcharging of the battery or other sub-optimal issues that could affect the performance and lifetime of the storage unit.

However, ensuring scalability is probably the most crucial contribution IT Sonix has brought to the table in its cooperation with SENECE. To give an impression of the potential, SENECE has grown to 500 employees in just 3 years, and the company is currently expanding into Italy and Australia.

Both countries require additional developments. For instance, Australian homeowners want to sell excess energy out of their storage directly to their local energy grid. To do that, the system needs to support VPP (Virtual Power Plant), a software tool that bundles the output from small energy producers and sells it to grid operators.

Looking into the future, in a few years there may not be 75K storage units, but 500K or even 1 million installed in private homes across the globe. Without scalability issues, thanks to the careful work of IT Sonix solar power platform team.



Wiring for Sustainability

As sustainability is becoming a key issue in transport and logistics, special purpose electric vehicles are spreading.

As sustainability is becoming a key issue in transport and logistics, special purpose electric vehicles are spreading.

For instance, a Swedish truck manufacturer is developing versatile light electric trucks and resort vehicles, and Data Respons subsidiary inContext contributes with expert electrical systems knowledge.

Strongly supporting the electrification of the mobility sector, Data Respons engineers have integrated hybrid drivetrains and charging capabilities into numerous vehicle types, building on their knowhow in designing cable harnesses for trucks and buses with conventional drivetrains.

And what's more, the Data Respons subsidiary recently moved into new territory, entering the electric boat industry, designing a complete wire harness for a new high-end electric luxury cruiser on hydrofoils.

As one of Scandinavia's leading consultancy companies specialized in vehicle cable harnesses, Data Respons subsidiary inContext is proud to be part of the push towards sustainability in transport and logistics and is continuously looking to expand its portfolio in that area.

Recently, yet another promising project could be added to the list, commissioned by a Swedish light truck company.

Growing demand

There is a growing demand for special purpose Battery Electric Vehicles (BEV). For instance, as more and more European cities are limiting diesel truck traffic in city centers, the need for electric alternatives are rising.

In addition to that, many cities and

municipalities are investing in electric work vehicles to reduce emissions.

Also, the hotel and resort sector is on the lookout for more sustainable transport solutions. Here, small electric trucks secure clean internal transport at resorts, tourist excursions, airport transfer etc.

Johan Bergström, section manager at inContext, explains:

Our customer is collaborating with a subsidiary of a large hotel group operating across the globe, including Mexico, Brazil, and the Caribbean.

The subsidiary had already developed its own light BEVs for internal mobility at resorts, and now wanted to work together with our customer to develop new vehicle models.

Refurbishing 100+ vehicles

In addition to designing new vehicles, the Swedish truck manufacturer was also commissioned to refurbish more than 100 existing BEVs already built by the subsidiary. Due to a long period of stand-still because of the corona pandemic, the cars' batteries had drained and required replacement.

To solve cabling issues on this fleet of cars, inContext was

brought in for assistance.

– We have a strong reputation in the vehicle industry for in-depth knowledge of electronics and cable harness design. It's always satisfying to see how that reputation is spreading to new customers we haven't previously worked with. Especially when there are sustainability aspects involved.

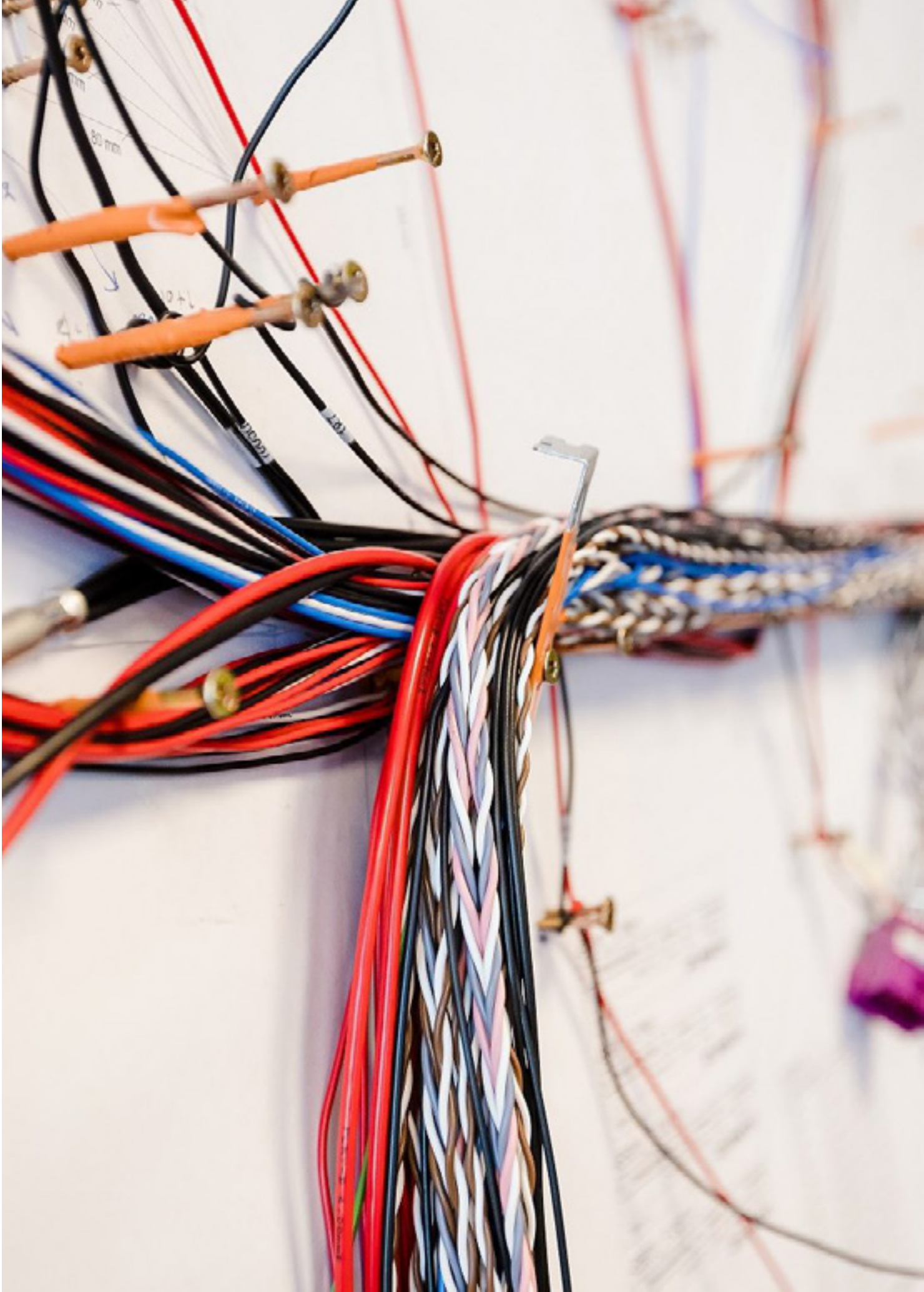
40% new cabling

Replacing the batteries of the 100+ existing BEVs required new wiring, as the new battery packs and their battery management system were different from the old ones.

According to Johan Bergström, around 40 % of the chassis cabling had to be renewed. In addition to that, inContext was asked to do reverse engineering on the entire cabling of the existing vehicles, as it turned out that the technical documentation of the harness was incomplete.

To do that, a complete cable harness was removed from one of the vehicles and sent to Sweden, where inContext engineers disassembled the harness while documenting everything thoroughly in an electrical schematic.

They also improved cable protection, color coding, splice positions etc., to meet automotive industry standards.



– We also did 11 complete main harnesses fitted to the new batteries and battery management system.

These harnesses were to be installed in vehicles that had to be ready in time for a special launch event.

In addition to that we built several variants of cabling to be used with the new batteries for the remainder of the 100+ vehicles.

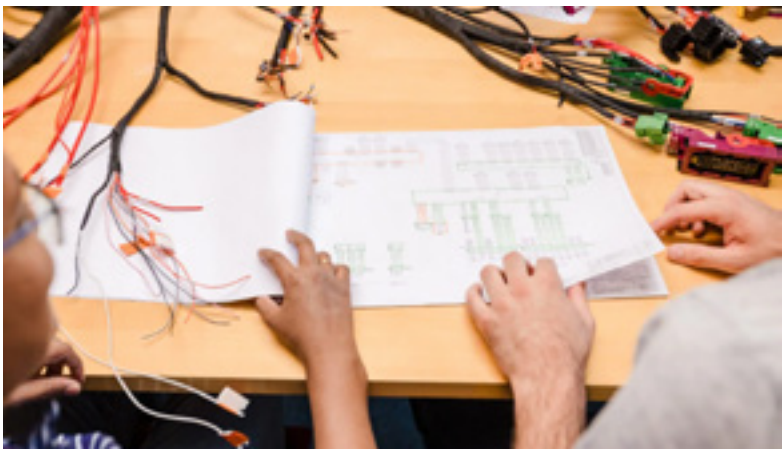
Several formboards

inContext works with the software E3 from Zuken to produce both schematics and formboards.

Most of the cable harness assembly is made on formboards to ensure good quality together with higher production speed.

It also improves the working environment for the harness engineers as they can stand and work in an ergonomic way. After laying the wires at the formboard it's time for marking, crimping, protection, and connectors to be assembled as well as electrical testing.

A complete main harness takes about one week to finish.



According to Johan Bergström, inContext is proud of helping to develop high-quality electric trucks and resort vehicles.

– These light trucks may be considerably smaller compared to the heavy trucks and buses we usually work with. But when it comes to reducing our environmental footprint, they are no less important.

There are so many areas in which these small vehicles can make a big difference.

How Chat GPT {Thinks}

it will revolutionize
the Software Industry

It took Facebook 10 months and Netflix 3.5 years. ChatGPT achieved it in just 5 days: Reaching 1 million users. No doubt, the fastest-growing app in the world has created huge interest everywhere. We asked both Chat GPT and one of our software experts about their thoughts of the arrival of ChatBots and AI, and how they think it can disrupt the software industry.

Funfact

The cover image of this article was created by us with an Artificial Intelligence that can create AI art.



After its launch in November of 2022 Chat bot GPT has been on everyone's lips. With more than 100 million users within the first two months, and has more than 13 million daily visitors it's clear to see that chat bots have entered the public scene with a bang.

Chat GPT, a chat bot launched by Open AI in November 2022. It has 4 months of experience within embedded computing, industrial IoT and digitalisation.

This is ChatGPT's opinion on ChatGPT:

The integration of Artificial Intelligence (AI) and Chat GPT (Generative Pretrained Transformer) has the potential to significantly transform the software industry in numerous ways. In recent years, the development of AI and its applications has grown rapidly, and the technology is expected to bring about several significant changes in the software industry in the coming years.

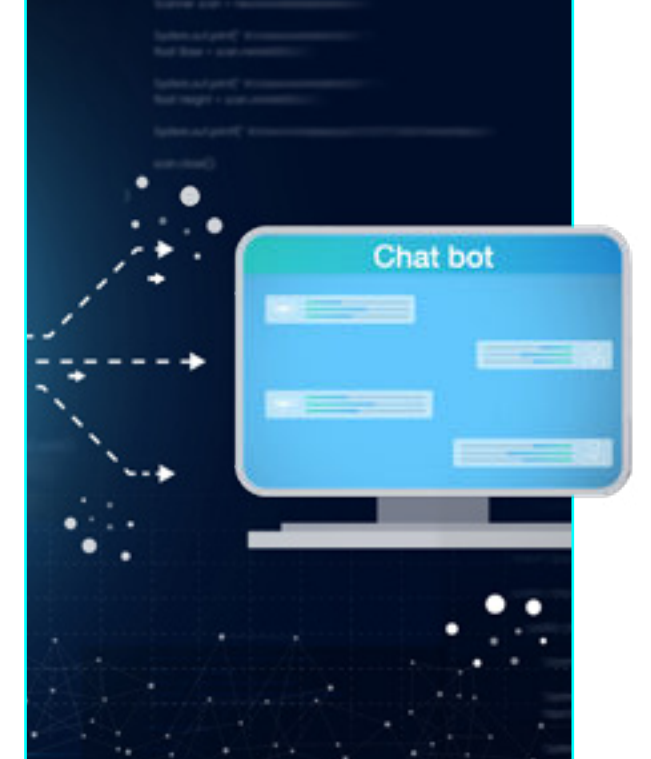
In customer service, the integration of Chat GPT and AI has the potential to automate the process of handling customer inquiries. Chatbots powered by AI can provide instant and accurate responses to customer inquiries, reducing the wait time for a human representative. Additionally, the ability of AI-powered chatbots to handle multiple conversations simultaneously can greatly improve the efficiency of customer service operations. As a result, businesses can provide better customer support, ultimately improving customer satisfaction and loyalty.

In software development, Chat GPT and AI can automate repetitive tasks such as code completion, bug fixing, and even code generation. The AI's ability to understand code and generate coherent and grammatically correct code can save developers a significant amount of time and effort. Furthermore, Chat GPT's ability to understand and generate code in multiple programming languages makes it a valuable tool for developers across the industry. With the integration of AI, software development can become more efficient, and the risk of human error can be greatly reduced.

Chat GPT and AI can also be utilized in content creation, such as writing articles, creating reports, and composing emails. The technology can generate coherent and grammatically correct text, freeing up time for content creators to focus on more high-level tasks, such as brainstorming and strategy. Moreover, AI's ability to generate new ideas for content can help content creators stay ahead of the curve. With the integration of Chat GPT and AI in content creation, the process can become more efficient, and the quality of the output can be improved.

In addition to customer service, software development, and content creation, Chat GPT and AI can also transform other areas of the software industry, such as project management, quality assurance, and testing. AI-powered project management tools can assist in prioritizing tasks, scheduling, and tracking progress. AI-powered quality assurance and testing tools can automate the process of finding and fixing bugs, reducing the risk of human error and improving the efficiency of the testing process.

One of the key benefits of the integration of Chat GPT and AI in the software industry is the ability to handle large amounts of data efficiently. AI algorithms can process and analyze large amounts of data quickly and accurately, providing valuable insights into business operations. Additionally, AI can help in identifying patterns and trends in data, allowing businesses to make informed decisions based on data-driven insights.



Moreover, the integration of Chat GPT and AI in the software industry can lead to the development of new software and applications. For example, AI-powered virtual assistants and chatbots can assist in automating tasks and improving the efficiency of business operations. AI can also be utilized in the development of new applications, such as predictive analytics tools, which can provide valuable insights into business operations and help businesses make informed decisions.

However, the integration of Chat GPT and AI in the software industry also brings with it certain challenges. One of the major challenges is the need for large amounts of data to train AI algorithms. Furthermore, the technology is still in its early stages of development, and there are concerns about its accuracy and reliability. Additionally, there are ethical and privacy concerns associated with the use of AI, particularly in regards to the processing of personal data.

In conclusion, the integration of Chat GPT and AI has the potential to significantly transform the software industry in numerous ways. From automating repetitive tasks and providing instant and accurate responses to handling large amounts of data and developing



Hans Christian Lønstad, PhD, CTO of Data Respons Solutions, Norway. Hans Christian has 20+ year's software and hardware experience within embedded computing, industrial IoT and digitalisation.

see the big companies are flocking around it as well. Regarding the application itself, it's important to split it in two halves. One part is the content it's distributing, the other is the way it's presenting it. I believe there are some issues around that combination.

Firstly, the content is not really fact based. ChatGPT lies a lot, actually. It constructs stuff, so it's not a reliable source of information. It has no relation at all to facts, and it's not a curated source of information. It constructs information from what it has seen most frequently. The most popular phrases are being rephrased using a language model, which is actually quite good, as it can write about topics in a human-looking way.

That is part of its attraction, but it's part of the problem as well, because it's not necessarily fact based and correct. And users could even perceive ChatGPT as more authoritative than other sources, because it produces text that looks like written by a human. Moreover, I think we'll soon see some legal issues emerging, for instance when people use it as a medical or financial advisor.

However, it will be interesting to see how Microsoft, Google and other big players are going to monetize this type of conversational AI. In my opinion, the race on ChatGPT is probably going to be a monetizing race, following the well-known three phases of platform development. First you attract users, then you bring in advertisers. Reaching the third phase, the main goal of the platform will be to not serve users or advertisers, but to make money off itself, and present you with the content it makes the most money off. We'll have to wait and see how that goes.

When you're asking me which business cases I see in my own line of work, maybe the servicing of complex



systems could benefit from using the conversational approach. If the people servicing a highly automated factory, instead of browsing through manuals, could type their observations into a chatbot, it could guide them in the right direction to fix the problem. It could be some kind of documentation portal for a complex system, provided you have trained it on the relevant data. But actually, that's always the problem with AI. It requires large amounts of data to work properly, and when you look at specific use cases and specific industries, you rarely have the data volume necessary. Furthermore, it's not curated, so it could be a source of error for the AI system.



I understand why many people are fascinated by ChatGPT. It tries to encompass the whole world with information. But that's not really a business case. You must resort to some topic of interest if you want to use it in business. It needs to be directed somehow, and then I think you will struggle with getting the data you need to support your business case. So, although it looks promising it might fade away anyway. We just have to see how it goes.

However, when we look at AI and machine learning in general, the by far most popular applications are camera and image based. It's well-established in face recognition, surveillance, and crowd control,

and it's used extensively in industry for production and quality control. There you don't necessarily need a huge data set to build your application. A few thousand images may be sufficient. In fact, I find AI powered image creators far more fascinating than their text-based counterparts. For instance, DALL-E, developed by the same people that are behind Chat GPT. That's interesting because the system doesn't just repeat what it has seen most often. It starts experimenting, and it synthesizes stuff. For creative people, such a tool must be a great way to get new idea.

In conclusion, the arrival of AI power has impacted us far more than one might be aware of. Like Hans Christian points out, we've used AI to unlock our phones for years, and we've for examples used it for automated weight monitoring solutions for livestock farming which you can read more about here. While AI might be a great source of information and inspiration, there is still a long way to go until we will reach a point close to what we've seen in the movies "Wall-E" or "I, Robot", if we ever will.

Developers hacking for greener IT

Solar panels, smart meters, agricultural statistics & reusing old keyboards – lots of sustainable ideas at the 2022 Data Respons Green IT Hackathon

The annually recurring Hackathon gathers developers working for the subsidiaries of Data Respons for an intense 24-hour coding event. This time Green IT was on the agenda and the event was hosted by MicroDoc, welcoming teams from Data Respons subsidiaries Frobese and EPOS CAT to the MicroDoc headquarters in Munich.

Developers hacking for greener IT

There are many ways to address sustainability within IT, and the projects presented by the six Hackathon teams proved just how broad the field is.

For instance, you can minimize resource consumption by reusing an old computer keyboard.

According to one of the four MicroDoc teams participating in the Hackathon, the keyboard made by Lenovo in 2011 is the best keyboard ever produced.

For that reason, and to save resources, the team decided to remove the keyboard from the original laptop and to convert it to a USB-keyboard, that could be plugged into any pc.

Connecting soil and plants

Another MicroDoc team took a whole other approach to sustainability. The “Team Plantiers” set out to connect soil data with plant data to inspire farmers to discover new crops they maybe hadn’t thought of growing on their land.

The team connected publicly available data on soil, moisture etc. across Germany, with data about plants and their requirements, for instance to find what type of potato would be the best to grow on a specific type of soil.



The engineering team from MicroDoc showing of the result of the Hackathon.

Solutions for private homes

The third MicroDoc team participating in the Hackathon turned its attention to solar panels for private homes.

They developed a prototype of a controller managing the amount of electricity going from private solar panels to the public grid.

In Germany, you can feed the electricity you produce into the public grid, but you only get paid for a specific amount of watt per day. If your production exceeds that amount you deliver it to the grid for free. To increase the earnings of small solar power stations, the MicroDoc team included calculations on how to optimize the system to make it more profitable.

Also focusing on energy consumption in private homes, a MicroDoc one-man team experimented with making conventional analogue meters measuring electricity, water, and gas smarter.

It was done by adding different sensors to read off the consumption and convert the values into digital information.

Planet B

The team from EPOS CAT took green it from the personal to the global level. They created a prototype of an interactive educational game called Planet B.

It simulated the impact of climate change on a fictional planet, allowing users to see what the consequences would be, if the world would shift to renewable energy, or the opposite: What would happen if the governments of the world decided to do nothing to mitigate climate chance.

Minimal runtime

Last not least, the team from Frobese took on the task to try to reduce the energy consumption of coding.

Under the working title Minimal Runtime for Computational Operations the team experimented with both hardware and software and worked on developing more efficient algorithms and choosing hardware consuming less energy.

All this was to be combined in a tool to assist the team in its development work and to find methods to reduce energy consumption by refactoring algorithms and reducing runtimes.



We had great fun and helped each other across the six teams as best we could, says Vithya Jeyachandran, software developer at MicroDoc and one of the organizers of the Green IT Hackathon.

Of course, we didn't sleep for 24 hours. But with 25+ colleagues having fun and working intensely round the clock, it was worth it.

And not least, sustainability is a topic that we all can relate to. That made it even more exciting, and we're all looking forward to the next hackathon at the end of this year.

About Data Respons

Data Respons is a growth company and a pure-play digital leader with an in-depth expertise in software development, R&D services, advanced embedded systems and IoT solutions.

We provide R&D services and smart embedded solutions to OEM companies, system integrators and vertical product suppliers in a range of market segments such as Mobility, Industry Automation, Telecom Media, Space, Defence Security, MedTech, Energy Maritime and Finance and the Public Sector.

The headquarter of Data Respons is located in Oslo, Norway, and the company has subsidiaries and offices in the Nordics, Germany & Taiwan.

In early 2022 the company became a part of Akkodis, the global tech engineering company that goes beyond possible, to make incredible.



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