SMEs Digital
Strategies for the digital transformation
Table of contents

New opportunities for SMEs thanks to digitisation ................................................................. 4
New customers thanks to digital technologies ................................................................. 6
Digital dental specialists ........................................................................................................ 7
Local support: Mittelstand 4.0 ........................................................................................... 8
An overview of the Competence Centres ........................................................................ 9
A brief introduction to the Competence Centres ............................................................. 10
The Mittelstand 4.0 Agencies ............................................................................................. 14
Speeding up processes thanks to digitisation ................................................................. 16
One language for all: eBusiness standards for SMEs .................................................... 17
Simple and intuitive: usability for SMEs ........................................................................ 18
Contacts ............................................................................................................................ 19
New opportunities for SMEs thanks to digitisation

All companies, regardless of size or sector, are affected by digitisation and interconnection. This applies just as much to a traditional butcher’s shop in a rural area as to suppliers catering to industrial corporations all over the world, or a small hairdressers’ salon.

Digitisation and interconnection affects all of the German SME sector, the ‘Mittelstand’, to which 99% of our companies belong. The Mittelstand is the backbone of the German economy. These small and medium-sized enterprises account for more than half of Germany’s GDP. They provide more than 60% of jobs and train more than 83% of the young people receiving vocational training. If the Mittelstand takes the plunge into the digital era, it will have what it takes to be able to continue to be able to write its success story.

Buzzwords and a jungle of potential suppliers: digitisation can be a chaotic affair
With countless buzzwords like Industrie 4.0 and cloud computing dominating the debate, it is not always easy to understand what everyone’s talking about, let alone how digitisation will impact on your own business and what new opportunities it will present. There are many ways to use digital technologies, ranging from having a corporate website to automating individual steps in the manufacturing process, to completely overhauling business processes. Just as diverse as these options are the large numbers of suppliers vying for customers for their products dedicated to SMEs. The solutions they present usually differ with regard to functionality, performance, price and service packages. Many companies feel overwhelmed by the sheer amount of information they receive, and by the lack of transparency.

There are many SMEs rightly asking themselves: is all of this really important? What do I need for my company?

Demanding customers, new competitors: why digitisation is so important
Digitisation is also changing customers and their behaviour. They have become well-informed stakeholders with their own networks. This has put them in a stronger position. Customers today are already demanding tailored solutions and batch-size one products for the same price they would pay for mass products. They expect swift and convenient deliveries and excellent customer services. They know that digital technologies make all of this possible. Only those able to meet these customer demands and willing to adjust all of their operations to suit the customer will be able to retain their competitive edge. At the same time, the value chains of many product and services providers are visibly changing, as are the markets.

New opportunities thanks to more efficient processes, new customers and business models
Digital technologies also open up tremendous opportunities for small and medium-sized enterprises. These technologies can be used to develop brand new business models, build a new customer base and encourage customer loyalty. Mittelstand companies can also catch up with large corporations – which tend to be quicker to make their way into the digital age – thus ensuring that they can continue to supply to these companies. Digital technologies have the potential for SMEs to become more efficient, be it with regard to procurement, manufacturing or administrative processes. Small and medium-sized companies can save a great deal of time and money by using smart, intercon

However, it is not only the processes themselves that change, but also the working environment the workforce finds itself in. Digital and connected operations are associated with a loss of old job profiles and the emergence of new ones. This is why it is important for firms not only to look at the technical aspects of digitisation but to also prepare their staff. Companies are well-advised to ensure that their workforce can build the expert knowledge and skills they will need to complete their new tasks. This is crucial to the success of the digital projects – as is continuous training, which is in fact one of the keys for any company to be successful in the digital age.

SMEs Digital: informed advice for small and medium-sized companies, free of charge
There are many small and medium-sized companies feeling a little out of their depth when it comes to the digital transformation. Unfortunately, there is no one-size-fits-all approach when it comes to the digital era. But there is an approach for every company, and no firm has to embark on finding it all by themselves. The Federal Ministry for Economic Affairs and Energy supports small and medium-sized companies as they embrace digitisation. SMEs...
Digital is there to highlight the opportunities for small and medium-sized companies and points them to ways in which they can successfully implement digital technologies. Companies can make use of information that is accessible, unbiased and geared towards real-life use, and of specific advisory services designed to help firms develop and implement their own strategy for digitisation.

Under the SMEs Digital initiative, which has been designated a priority for public-sector funding, a network of local Mittelstand 4.0 Competence Centres has been rolled out across Germany. These centres provide practice support targeted at SMEs and spanning the entire value chain.

There are 17 regional Competence Centres and another six with a specific focus. The centres support companies ranging from small retailers to fairly large manufacturers. How is it possible to digitise manufacturing in a way that is safe and secure? What electronic standards work for a given company? How can staff be trained in preparation for new processes? How can the new software for the company be designed to feel intuitive for users? What are the legal implications to consider when opening an online distribution channel? These are just some of the answers to which companies can find answers at SMEs Digital. All of the support provided by the centres, be it in workshops, demonstration events or training courses are unbiased with regard to potential suppliers, free of charge, and tailored to the needs of small and medium-sized companies.

This brochure will give you an overview of the kind of information and support offered by SMEs Digital. There are also some examples showing how companies have worked with SMEs Digital to successfully digitise their operations and to benefit from this.

In addition to the support offered by the Competence Centres, small and medium-sized companies can also rely on the expertise of the Mittelstand 4.0 Agencies, which are always keeping up-to-date on cross-cutting developments around digitisation.

Both the Competence Centres and the Agencies also provide information on electronic standards (eStandards) and usability, which are essential for effective and user-friendly developments in digitisation.
New customers thanks to digital technologies

Tischlerei Kasper is a family-owned carpenters’ specialising in the design and manufacturing of staircases made from solid wood. The company, which is based in the small town of Rhens just south of Koblenz, also crafts windows, doors and saunas. For many years, the firm has been working with the Chamber of Skilled Crafts in Koblenz, which is part of the ‘showcase west’ programme launched by the Competence Centre for Digital Crafts. It has now been a few years since daughter Julia Kasper decided to venture into new territory and set up her own company, an online platform called ‘holzgespür’. The platform is designed around an online configurator that allows customers to design and order their own furniture made of solid wood. Customers can watch videos of a carpenter presenting to them various types of wood, and can then decide whether they want the new dining table and chairs to be made from oak, cherry or walnut. From the very first step, customers are part of the manufacturing process of their product. The furniture is then made to measure by the family-owned company, according to the customer’s specifications. Julia Kaspers used her platform to increase the product range her parents’ company was able to offer – and she has been highly successful.

This success also led the traditional carpenters’ shop to digitise its own processes and to better connect the two companies. Working time is now tracked digitally, which has considerably reduced the amount of paperwork that needs doing. HR planning has also improved since the craftspeople working for the company have been given smartphones.

Tischlerei Kasper is now in the process of completing the digital chain. All customer and production data is being digitised so that they can be accessed by staff, customers and machines any time and anywhere. In a next step, it will become possible for other processes such as design, technical planning and correspondence to be optimised step by step.

This example shows how digital business processes can support crafts businesses in their work and how digital technologies can be used to build a new customer base.

Hermann Kasper recommends: “Even if your order books are full, it is worth engaging with the future. We are now able to work much more efficiently!”

The team of Tischlerei Kasper and holzgespür.
KU64 is a large dental surgery in Berlin, employing 115 staff covering all the specialist fields in dentistry, such as orthodontics and dental surgery. The surgery is almost fully digitised and makes perfect use of the opportunities of the digital age, for instance when communicating with patients. This makes KU64 a prime example of how digitisation can drive success in the services sector. The Mittelstand 4.0 Competence Centre Berlin wants other small and medium-sized companies to benefit from the dental surgery’s experience and therefore invites representatives of the surgery to speak at their events.

The website gives patients a full overview of the treatment offered. It is designed to be easily found on the web. Tracking tools are used to record user behaviour and allows the surgery to find out what content is particularly sought-after. This information can then be used to guide decision-making, such as what brochures to publish. Patients can book their appointments online or over the phone. Calls received by the in-house call centre are also logged digitally, making it possible to find out the times when there is a peak in the number of calls. This data is then used for staff planning, to ensure that patients are not kept waiting for too long, even during peak time.

Digital technologies are also used in the actual treatment. For instance, there is a camera especially designed for creating a digital image of the oral cavity. This data is then transmitted to a milling cutter capable of producing a ceramics inlay to perfect precision and within the hour. This is considerably faster than the traditional process that starts with a plaster cast. The surgery also uses digital technology to simulate the treatment process and its outcomes, which helps boost patients’ morale during treatment. It can really help patients to see what their new smile will look like before they embark on a long series of treatment sessions – and it motivates them to go through with it. Every single step in the treatment is logged in the patient’s digital medical record, so that all the staff at the surgery can look after the patient. The system also alerts staff when they are departing from the correct order of treatment steps as prescribed by law, thereby protecting staff from making mistakes that could result in legal disputes. To sum up, digital technologies are used to deliver better quality of care, higher patient satisfaction, and greater comfort for both patients and staff.

"For us, digitisation means that we are able to save time and deliver better quality in terms of medical and technical services. Our staff feel that the technology gives them the perfect support. These two factors have also clearly translated into higher patient satisfaction." 

Fabian Jain, Key Account Manager at KU64

Digital dental images help get to the root of the problem more quickly.
Local support: Mittelstand 4.0

The SMEs Digital Competence Centres have been established to support SMEs in all matters digital. The centres help companies assess their own digital efforts, develop a digitisation roadmap tailored to their individual needs, and support them as they select and implement specific action. Furthermore, they also give advice as to whether a certain technical solution makes good economic sense and as to whether it requires additional security safeguards to be put into place.

A key asset of the centres is the fact that all learning and demonstration are modelled upon real companies. This means that company executives can gain a realistic impression of how digital technologies could transform their operations. There are also demonstration factories where companies can test their own technical solutions, e.g. software controlling their production. This allows for this kind of new technology to be tested before it is used in real-life production.

In addition to the regional Competence Centres, there are also dedicated centres for “Digital Crafts”, “Planning and Construction”, “Textiles Network”, “IT industry”, “Usability” and “eStandards”. These specialised centres, which are supported by regional contact points, offer their support to companies all over Germany.

All of the services provided by the Competence Centres are independent of any suppliers, transparent, complete and designed to be easy to understand.
An overview of the Competence Centres

- Competence Centres established under the ‘Mittelstand 4.0 – Digital Production and Work Processes’ initiative
- Competence Centre for Digital Crafts
- Competence Centre for Usability
- Competence Centre for IT Industry
- Competence Centre for Textiles Network
- Competence Centre for eStandards
- Competence Centre for Planning and Construction
- Regional Showcases for Digital Crafts
- Regional Contact Points for Usability
- Regional Contact Points for IT Industry
- Regional Showcases for Textiles Network
- Open Workshops for eStandards
- Regional Contact Points for Planning and Construction
A brief introduction to the Competence Centres

The Competence Centres serve as companies’ regional point of contact for all matters digital – irrespective of whether executives would like to learn more about digital manufacturing, security-related aspects of new technologies, or whether they would like to test a new technology. Beyond these more general issues, each centre has its own specialised focus, ranging from smart production to workplace design, through to IT security, new business models and the legal implications of digital production. Each centre has its own website, where companies can find out about services and special events such as workshops, network meetings, or training sessions.

Mittelstand 4.0 Competence Centre Augsburg
Demonstrated Industrie 4.0 solutions at four sites; Mittelstand 4.0 information mobile touring the region
- Focus on manufacturing: machinery, metallurgy and vehicles
- Expertise in automated manufacturing, logistics 4.0, work 4.0, digital business models
- Demonstrates connected manufacturing, smart assistance systems, sensor networks
www.kompetenzzentrum-augsburg-digital.de

Mittelstand 4.0 Competence Centre Bremen
New digital applications at six test and simulation labs; Digital Ambassadors
- Expertise in maritime industry and logistics, wind energy, aerospace, automotive industry, food and beverages, luxury foods, alcohol and tobacco
- Digital communications and services, digital transport and cargo handling; digitisation in product management
- Digital value-added services; stock-taking of digital progress
- 3D manufacturing and digital assistance systems
www.kompetenzzentrum-bremen.digital

Mittelstand 4.0 Competence Centre Berlin
Demonstration centre complete with mobile demonstrators touring the whole of Germany
- Cross-cutting issues that are relevant to all SMEs
- Assesses and helps adjust business models and develop new digital business ideas
- HR: hiring and retaining staff
- Digital marketing: winning over new customers, accessing new markets
- Digital solutions for greater efficiency and effectiveness
- IT security and raising awareness of IT risks and how to address these
www.gemeinsam-digital.de

Mittelstand 4.0 Competence Centre Chemnitz
Digital solutions in five testbeds and training labs, and on a mobile roadshow
- The centre’s work is underpinned by the following notion: in the digital world of manufacturing an work, humans will act as enablers
- Step-by-step solutions for companies, their processes and technologies,
- products and services, the law, human beings and work
- Connecting humans and machines within the company and across companies
- Legal toolbox 4.0: what companies need to know about data protection, data security and liability
www.kompetenzzentrum-chemnitz.digital

Mittelstand 4.0 Competence Centre Cottbus
Model factory, intralogistics lab and test centre demonstrating staff-centred digital solutions
- Modular and needs-based services for the digital transformation
- Automation solutions, human-robot collaboration and assistance systems
- Digitisation of logistics and manufacturing
- Learning partnerships for staff, management, executives, employers’ and employee representatives
www.kompetenzzentrum-cottbus.digital
Mittelstand 4.0 Competence Centre Darmstadt

Two learning labs for skills-driven and applied know-how transfer in 5 areas

- Work: designing user-friendly assistance systems and eliminating risks
- Efficiency: improving lean production using digital technologies
- Energy: connecting machines, processes and building technology for greater energy efficiency
- Ideas: recognising the potential of the digital transformation and developing new business models
- Safety: addressing IT risks associated with digital networks

www.kompetenzzentrum-darmstadt.digital

Mittelstand 4.0 Competence Centre Dortmund

Point of contact for digital manufacturing and logistics, demonstration centres in three regions (Ruhr, Rheinland; Eastern Westphalia-Lippe)

- Expertise for the lead markets of mechanical engineering and plant construction, manufacturing technology, mobility and logistics, information and communications industry
- 21 service modules to facilitate a targeted introduction of digital products and processes
- Smart automation of products and manufacturing systems; new solutions for manufacturing technology
- Autonomous and flexible logistics systems

www.digitales-kompetenzzentrum-dortmund.de

Mittelstand 4.0 Competence Centre Hamburg

Smart factory and test lab demonstrating the interplay of different digital technologies

- Focus on logistics across the entire supply chain
- Digitisation of order management as part of the manufacturing process
- Training, HR organisation and management in the digital age
- Development of new business models
- 360° perspective on additive manufacturing
- Online marketing and eCommerce

www.kompetenzzentrum-hamburg.digital

Mittelstand 4.0 Competence Centre Ilmenau

Five model factories demonstrating ways to connect staff, machinery and processes

- Cooperating within and across companies using digital communications and data exchange platforms
- 3D scanning and additive manufacturing
- Integrating digital technologies in existing systems and installations
- Digital monitoring of machines and data recording
- Introducing manufacturing control and steering systems; automation in manufacturing

www.kompetenzzentrum-ilmenau.digital

Mittelstand 4.0 Competence Centre for eStandards

Expertise in the field of digital standards and sustainability, open workshops in Cologne, Hagen and Leipzig, mobile open workshop allowing for various tests and training options

- Support for companies implementing eStandards within their organisation or group or across organisations
- Focus on manufacturing and crafts, healthcare, logistics and commerce
- Expertise in the field of standards in regulated markets and in connected manufacturing

www.kompetenzzentrum-estandards.digital

Mittelstand 4.0 Competence Centre Hanover

Generic factory, nine specialised factories and a mobile factory provide for a variety of demonstration and testing possibilities

- Manufacturing and associated expertise in areas such as data acquisition, additive manufacturing, retrofitting, MES/ERP, digital assistance systems, lean, energy transparency, AR/VR applications
- Work, organisation and skills in the digital transformation
- Legal challenges associated with digitisation
- IT security and cybercrime

www.kompetenzzentrum-hannover.mitunsdigital.de
**Mittelstand 4.0 Competence Centre for IT industry**

Four contact points with a headquarters in Berlin and regional contact points in Aachen, Karlsruhe and Kassel

- Empowering and raising awareness of the digital transformation among the IT industry
- Fostering networking between SMEs in IT (match-making and online platform)
- Support for cooperation in consortia: legal forms, compliance and IT security, project management
- Services related to interoperability: identification and definition of open standards

[www.itwirtschaft.de](http://www.itwirtschaft.de)

**Mittelstand 4.0 Competence Centre Magdeburg**

The experimental factory and mobile demonstrator for training and a manufacturer-neutral Industrie 4.0 production installation

- Connected technology and standardisation: making companies fit for the digital future
- Digital business models: boosting competitiveness and innovation
- User-friendliness and a positive response: designing the digital workplace and supporting staff through digital change
- Safety and security: protecting sensitive business data and assessing IT security levels of digital technology

[www.kompetenzzentrum-magdeburg.digital](http://www.kompetenzzentrum-magdeburg.digital)

**Mittelstand 4.0 Competence Centre Kaiserslautern**

Demonstration Center SmartFactoryKL, complete with a mobile demonstrator for training and a manufacturer-neutral Industrie 4.0 production installation

- Development of digitisation strategies, innovative business models and a cooperation platform
- Development of digital expertise; training
- Self-evaluation tools for companies regarding digitisation
- Training and continuing education for people and management 4.0

[www.kompetenzzentrum-kaiserslautern.digital](http://www.kompetenzzentrum-kaiserslautern.digital)

**Mittelstand 4.0 Competence Centre Magdeburg**

The experimental factory and mobile demonstrator for training and a manufacturer-neutral Industrie 4.0 production installation

- Connected technology and standardisation: making companies fit for the digital future
- Digital business models: boosting competitiveness and innovation
- User-friendliness and a positive response: designing the digital workplace and supporting staff through digital change
- Safety and security: protecting sensitive business data and assessing IT security levels of digital technology

[www.kompetenzzentrum-magdeburg.digital](http://www.kompetenzzentrum-magdeburg.digital)

**Mittelstand 4.0 Competence Centre Lingen**

Three test and simulation labs for data-driven digital solutions

- Focus on the maritime economy, agriculture, commerce and crafts
- Methods and procedures for developing digital, data-driven business models
- Information, training and support for SMEs

[www.kompetenzzentrum-lingen.digital](http://www.kompetenzzentrum-lingen.digital)

**Mittelstand 4.0 Competence Centre Lingen**

Three test and simulation labs for data-driven digital solutions

- Focus on the maritime economy, agriculture, commerce and crafts
- Methods and procedures for developing digital, data-driven business models
- Information, training and support for SMEs

[www.kompetenzzentrum-lingen.digital](http://www.kompetenzzentrum-lingen.digital)

**Mittelstand 4.0 Competence Centre for Planning and Construction**

Support for SMEs embarking on digitisation in the construction and real-estate sector all across Germany, with five regional sites (Mannheim, Oldenburg, Magdeburg, Kaiserslautern and Holzkirchen)

- Focus on: Project design, planning, construction, crafts, operations
- Supporting companies in using digital methods and tools
- Demonstration and testing possibilities tailored to individual industries and target groups


**Mittelstand 4.0 Competence Centre Rostock**

Demonstrators in Rostock, Stralsund and Neubrandenburg for digital solutions for the healthcare and tourism industries

- Focus on medical technology, healthcare and tourism, especially health tourism
- Raising awareness of the potential for digitisation for SMEs
- Digital skills building for staff
- Individual digitisation strategies complete with implementation projects

[www.kompetenzzentrum-rostock.digital](http://www.kompetenzzentrum-rostock.digital)
### Mittelstand 4.0 Competence Centre Siegen

**Five demonstration and learning factories dedicated to skilled labour in the digital transformation**

- Changes in the way work is organised: recognising the potential of digital technologies, adjusting management processes, defining new roles, training staff
- Human-machine interaction and assistance system designed to support work processes
- Occupational safety and health: challenges associated with health and safety rules; data protection

**www.kompetenzzentrum-siegen.digital**

### Mittelstand 4.0 Competence Centre Saarbrücken

**Former manufacturing premises where there are now several demonstrators of Industrie 4.0 applications tailored to SMEs**

- Specialist expertise around digitisation in the automotive industry, in mechanical engineering and plant construction, engineering, tool-making, logistics and transport
- Supply-chain networks across different companies
- Support for digitisation projects, including related adjustments/transformation of business models

**www.kompetenzzentrum-saarbruecken.digital**

### Mittelstand 4.0 Competence Centre Stuttgart

**Two contact points in Karlsruhe and Stuttgart demonstrate how digital applications can be integrated in the value chain and make it more effective**

- Digitising the entire value chain: manufacturers, suppliers, suppliers of infrastructure, service providers, final consumers
- Focus on digital manufacturing, Smart Mobility, Smart Home (digital construction and building technology), Smart Health (digital technologies in nursing)
- Development of digital business models; IT security

**www.digitales-kompetenzzentrum-stuttgart.de**

### Mittelstand 4.0 Competence Centre for Textiles Network

**Four regional showcases in Aachen, Chemnitz, Denkendorf and Stuttgart and one cross-cutting showroom in Berlin support companies in the textile industry and in related industries**

- Support during the phase-in of digital processes
- Work 4.0: Assistance systems and workforce training
- Individual connected production
- New digital business models based on smart (textile) products
- Smart sensor technology

**www.kompetenzzentrum-textil-vernetzt.digital**

### Mittelstand 4.0 Competence Centre for Usability

**Support with regard to Usability and for a positive User eXperience (UUX); four regions (north, east, central, south Germany)**

- Raising awareness among SMEs providing and using software; training
- Focus on tools and demonstrators: innovation and the future of work, agility, solutions facilitating cooperation within corporate networks
- Support for UUX-driven developments and for the use of products and services

**www.kompetenzzentrum-usability.digital**

### Competence Centre for digital crafts

**Five regional showcases bring digitisation to crafts businesses and highlight the opportunities associated with the use of digital tools**

- Bayreuth: new manufacturing and automation technologies
- Oldenburg: digital information and communications technology
- Dresden: digital business models
- Koblenz: digital processes
- Krefeld: digital construction and Building Information Modelling (BIM)

**www.handwerkdigital.de**
The Mittelstand 4.0 Agencies

The Mittelstand 4.0 Agencies are providing expertise on issues that cut across matters relating to digitisation, thereby supporting the work of the Mittelstand 4.0 Competence Centres. The four Mittelstand 4.0 Agencies pool expertise on cloud computing, commerce, communications and processes. This information is then used to create publications, webinars, video tutorials, workshops and other formats, so that it can be used by the Competence Centres and other multipliers, such as the Chambers of Industry and Commerce and by institutions offering training courses. This can help improve the services provided to support small and medium-sized enterprises.

The Mittelstand 4.0 Agency for Processes

Batch-size one products from mass production, machines that exchange information autonomously, computers that control manufacturing processes independently: the Mittelstand 4.0 Agency for Processes provides multipliers with practical training and information on assembly, technical support and maintenance, IT security and data protection. The agency offers workshops on how to determine the need for process digitisation and also live-hacking events to demonstrate IT hazards to companies. The Agency for Processes also offers companies self-testing kits to assess their own IT security standards, and guidelines on issues including resource management, security for mobile devices and for secure password design.

The Mittelstand 4.0 Agency for Cloud

Whilst cloud solutions come with a number of advantages, many SMEs hesitate to adopt this technology. The Agency for Cloud demonstrates how cloud solutions can be used to render corporate processes more efficient and to develop new services and business models. It has also developed a tool that allows companies identify the applications and services where it would make sense for them to rely or partly rely on cloud solutions. This tool can be used to assess the structural and technical requirements (including data protection and other legal and security aspects) that would have to be met, and also looks at the cost-benefit ratio.
Mittelstand 4.0 Agency for Communication

If they are to successfully manage the digital transformation, companies need to take a close look at the flow of information and materials within their organisation, train their staff and make sure to keep their business partners involved. The Mittelstand 4.0 Agency for Communication works to help increase confidence and trust in digital processes, thus encouraging firms to embrace the digital transformation. To this end, the agency has developed training courses and publications designed to keep staff and management closely involved in the transformation process and to build new skills. The agency also provides information on how small and medium-sized companies can better communicate, especially by harnessing the benefits of digital communication tools. On top of this, the agency also makes it easier for companies to collect customer feedback and to respond to it.

The Mittelstand 4.0 Agency for Trade

The Agency for Trade provides multipliers with information, especially about the opportunities for new business models based on eCommerce and digital payment. The agency’s work has a triple focus: how can small and medium-sized companies be successful in business-to-business transactions (B2B)? How can innovative digital technologies, such as digital orientation systems, be used to improve customers’ response at stationary points of sale? And also, what do companies need to know about digital financing processes, invoicing, order management and payment processes?
MUNSCH Chemie-Pumpen GmbH, an SME based in the rural region of Westerwald, manufactures chemical pumps made of plastic, which can be used for purposes such as purifying smoke gas and polluted waste water. The pumps are tailored to the customers’ specifications, as they are used for many different purposes and therefore each need to meet different requirements.

Digital technologies have allowed MUNSCH to optimise their production process, which used to start with a drawing. In a next step, the machine was programmed manually to adjust its settings for the individual pump component about to be produced. Whilst this was a routine job, it was inevitably flawed with the occasional minor mistake during programming. These mistakes then used to result in faulty parts being produced or in a need for corrections. Now that the company is working with the Centre of Competence for Mittelstand 4.0 in Darmstadt, they have started to link up their product configurator with the manufacturing machinery. This has already allowed for the process of individual CNC programming of a milling machine to become fully automated. This means that the machine code is now automatically created via the product configurator, so that various steps can be bypassed and production can start straight away. There is now a direct flow of information from the customer to the machine, an improvement that translates into faster delivery. Staff can use the time they no longer need to programme the machine to complete other duties.

Executive manager Stefan Munsch explains: “Our process is based on a standardised chain of information in which there are no missing data links and which allows for error-free, individual processing software to be used. This saves a lot of programming and expense and – most importantly – it makes processes faster.”
One language for all: eBusiness standards for SMEs

In the digital world, machines, service providers, products and customers are all part of the same network. This can only work if the interfaces between the various components and stakeholders are standardised, allowing for a smooth transfer of data. More specifically, this means that all data has to be exchanged in the same format. This is why eBusiness standards (eStandards for short) are so important.

Small and medium-sized companies, in particular, benefit from the support SMEs Digital can give them as they look for the standards that best suit their needs. What standards lend themselves to what sectors and what specific solution? How are these standards implemented? Which IT service providers can help? There are a large number of different standards. Many of the ones that are in the public domain are too specific and cannot easily be adapted to other use cases. It is often difficult to arrive at an accurate cost estimate and the benefits are also not easy to calculate. Small and medium-sized enterprises are at risk of becoming dependent on the expertise of specific IT service providers and on their applications. This is why many companies are hesitating to adopt eStandards.

The Competence Centre for eStandards supports small and medium-sized enterprises across Germany, helping them understand just how important standards are for digitisation, and to adjust and implement them in line with their needs. The focus here is on standardisation solutions that are open and not tied to any specific manufacturer. There are several regional points of contact spread out across Germany which companies can contact to learn more about standards. The regional Competence Centres also support companies in the process of identifying suitable standards.

SMEs Digital has also compiled information on how standards can be used in specific industries:

- Manufacturing/small-batch production
- Construction
- Chemical industry
- Furniture
- Maintenance/technical support services
- Automotive sector
- Logistics
- Forestry
- Healthcare
- Culture

SMEs Digital helps companies calculate the cost of introducing eStandards, supports them in the selection and implementation process and demonstrates how electronic invoicing can be used.

The local Competence Centres support companies as they identify suitable standards and use them to successfully digitise their business.

You can find additional information about events and publications on eStandards at [www.mittelstand-digital.de](http://www.mittelstand-digital.de).
Simple and intuitive: usability for SMEs

The more companies adopt digital technologies, the more important it is to ensure that IT systems, digital services and products are easy to handle for everyone in daily use. In addition to this quality (‘usability’), the user experience itself is also important. Users will only embrace technology if they can see the benefits. Anyone developing software or IT systems ought to do so using the methods to ensure a good usability performance. IT products that are not easy or enjoyable to use cause additional work, mistakes and frustration on the customer side, whereas products with a good usability performance will raise customer satisfaction levels and be more successful on the market.

This is why SMEs Digital supports companies seeking to choose and implement user-friendly software. Small and medium-sized software providers can also turn to Digital SMEs and find out how they can design their products to be successful and to contribute to customer satisfaction – which will also benefit their business. The point of contact for user experience and usability is the Competence Centre for Usability, which caters to companies all across Germany.

The centre also has regional points of contacts where companies can turn to to learn how they can implement digital solutions in a swift and simply way.

Furthermore, SMEs Digital has drawn up various guidelines for SMEs to help them improve the quality and usability of corporate software and become more competitive. As part of these projects, solutions have been developed for various industry-specific applications such as in-patient and home-care and nursing, and for mobile or 3D applications.

You can find additional information about events and publications on usability at www.mittelstand-digital.de.
Contacts

Federal Ministry for Economic Affairs and Energy

Contact for SMEs Digital
Frank Fischer
Division VI B 3
Scharnhorststr. 34-37, 10115 Berlin
Email: Buero-VIB3@bmwi.bund.de

Associated research

The initiatives are being evaluated and studied by the research group for ‘SMEs Digital’, which is headed up by Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste (WIK GmbH)

Contact for associated research
Martin Lundborg
WIK GmbH
Rhöndorfer Straße 68, 53604 Bad Honnef
Email: M.Lundborg@WIK.ORG

Project management within the German Aerospace Center

The project management within the German Aerospace Center (DLR) provides expertise and administrative support for the individual projects receiving funding.

Project management contact
Werner Kohnert
Project Management Agency
German Aerospace Center V.
Technical innovation in the private sector
Linder Höhe, 51147 Cologne
Email: Werner.Kohnert@dlr.de