



Digitalisation of sales and marketing in Germany

Market report

March 2022





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Part A – Level of digitalisation of the German B2B sales and marketing





Digitalisation of B2B marketing and sales in Germany

There are various studies from large consulting companies such as Boston Consulting, KPMG, EY and other leading players on the digitalisation of marketing and sales, especially in medium-sized companies.

We present important results and findings from these studies below. You can also download these studies (see [Links](#) in chapter “Links and additional documents and sources”), but most of them are only available in German.

According to an actual study from KPMG and not very surprisingly, the digitalisation of marketing and sales has increased in each of the four dimensions (capabilities, processes, tools and performance). However, the overall maturity level increased by only 4%. Given the developments around the coronavirus, a stronger increase had been expected here. The gap between highly and weakly digitised companies continues to widen.

Particular differentiators are the setting of clear goals and measuring success through KPIs, a data-based understanding of customers coupled with individual customer care and top management support for digital initiatives. Digital maturity is a sales driver that reduces dependence on the traditional analogue core business, opens up new ways to reach customers and correlates with higher productivity potential. This is particularly evident in revenue growth in new channels. Conversely, in 2021 companies are only using digitalisation to a limited extent to reduce costs. The importance of face-to-face selling remains high, but has decreased significantly during the COVID-19 pandemic. Face-to-face selling is more and more supported by tools such as video communication, sales bots and online shops. Some companies have realigned their sales teams, others are questioning the role of the sales force in the future.



The digitalisation of the sales process is mainly taking place in the back office: Salespeople are still struggling to acquire new customers via digital channels - trade fairs have been cancelled and the personal component of the sales relationship is affected by distance. Alternatives such as social media, online seminars, digital trade fairs have not yet found their way into sales sufficiently.

Five factors that differentiate companies with a high level of digitalisation in particular from companies with a low level of digitalisation. Companies with a strong level of digitalisation

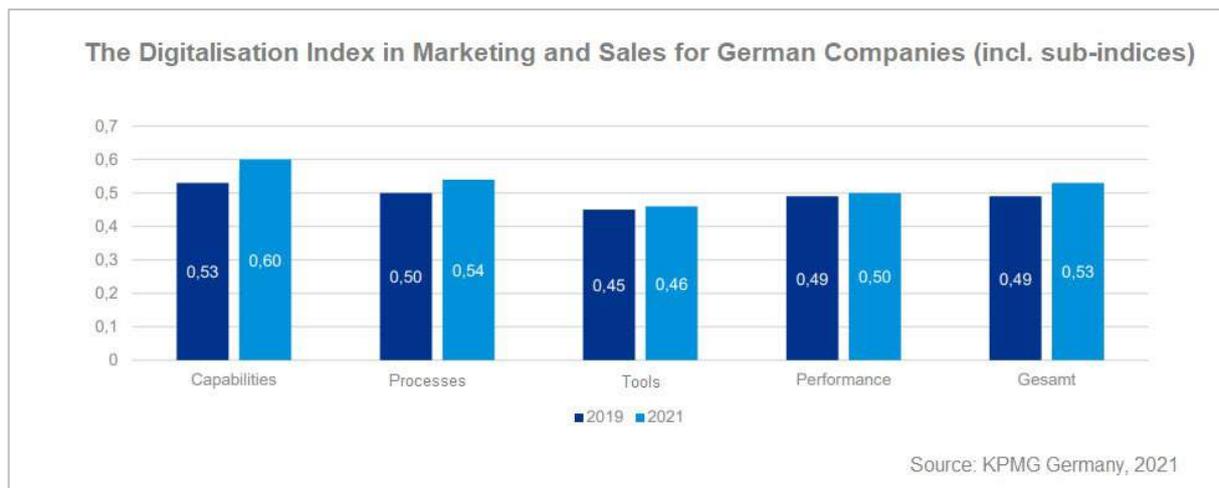
- tend to set concrete goals and measure success more systematically.



- respond more individually to customer needs and deliver an excellent customer experience without unnecessary media breaks along the customer journey. Data-driven customer analytics form an essential basis for this.
- are actively supported by top management and shareholders in their digitalisation projects and can react to changes in the industry and market by flexible adaptation.
- in addition to their presence on platforms and portals, they also operate their own shops and successfully generate new revenue streams with direct-to-consumer business models.
- can count on skilled staff in their teams and provide effective training for the continuous professional development of their employees.

These differences are also reflected in the company's results: for example, highly digitalized companies not only achieve higher profitability, but also proportionately higher revenues in the digital channel. Through this approach, these companies also reduce their dependency on the analogue core business.

Source: KPMG - Digitalisation Index Marketing and Sales 2021 ([Link](#); only in German)



Which sales tools will become increasingly important in the next five to ten years?

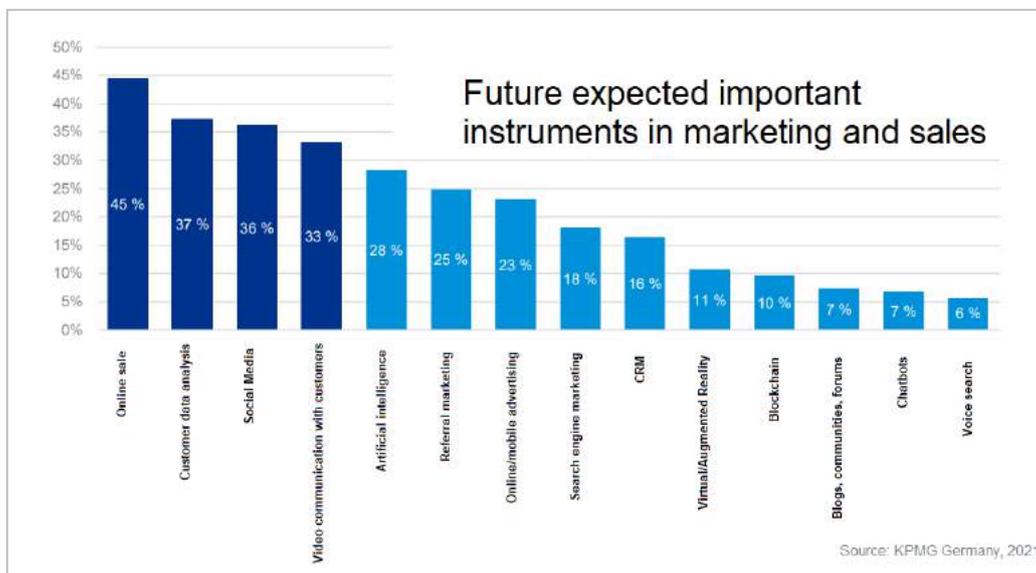
In addition to the development and expansion of presences on social media platforms and own online shops, initiatives for the gathering, analysis and use of customer data, the use of social networks as an instrument of digital communication, video communication (e.g. for the implementation of mixed sales formats) are becoming more and more popular. Artificial intelligence is also gaining more importance.

According to a study by Baulig Consulting, a consulting firm focusing on sales processes, there are many challenges for SMEs to successfully drive digitalisation in their own companies. Some of the most frequently cited reasons for the lack of success up to now are:

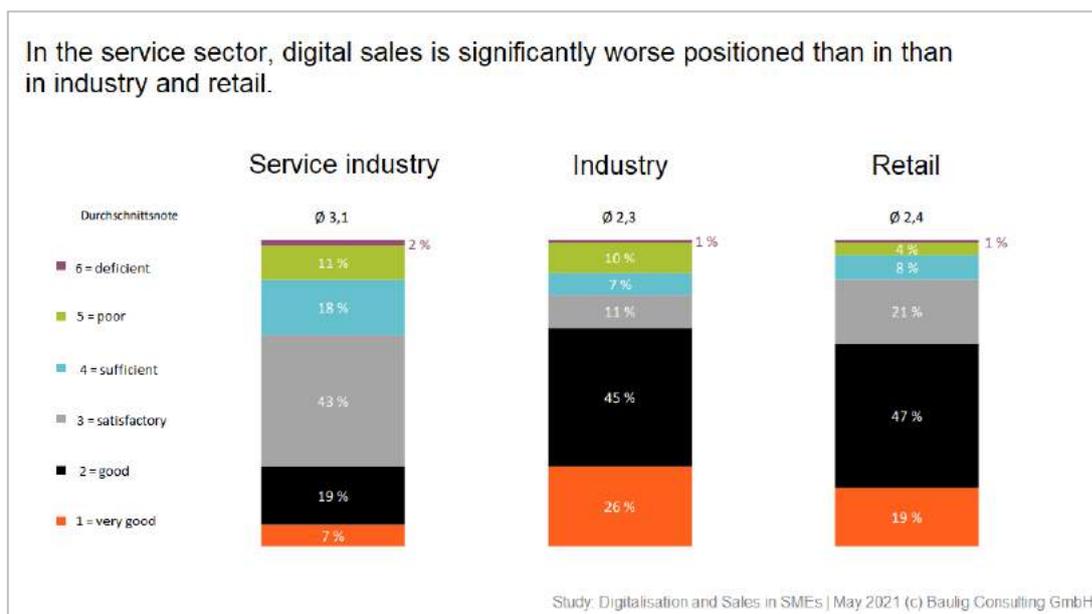
- Older sales staff struggle to understand digital business (74%)
- Due to the pandemic, there have been no sufficient resources (73%)
- There are too few experts in the company for successful digital sales on "state of the art-level" (73%)
- There is a lack of effective training and further education opportunities on digital sales strategies (71%)



- In many cases, it is not possible to reach the target groups via digital channels (70%)
- The market and the digital environment are developing so rapidly that one can hardly keep up with adapting one's sales processes (67%)
- The business field is considered too specialised to digitise sales (65%)
- The company's management is still struggling with digitalisation in whole or partly (63%)
- There is disagreement in management about the opportunities of digital business models and sales channels (62%)

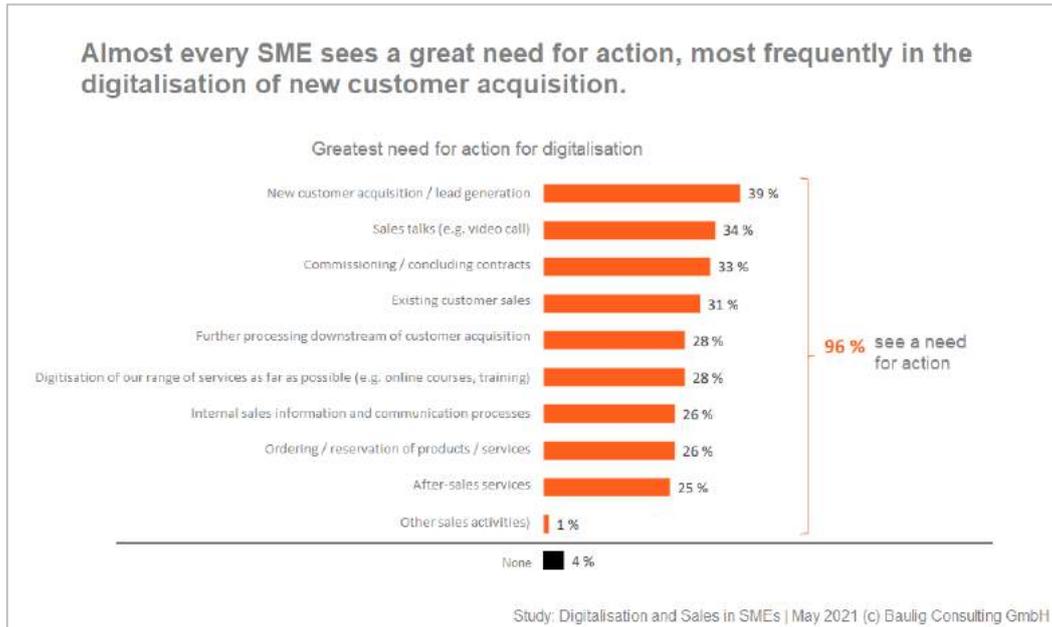


With the exception of the construction industry, which is still sticking to usual processes and ways of working, the digitalisation index has increased in all industries compared to the previous year. The previous leaders, banks and





insurance companies, as well as the information and communication industry, maintained their positions at the top of the ranking and each improved by two points to their index values of 67 and 66.



Companies from the transport and logistics industry continue to be among the digital pioneers and were able to gain five points. Even before Corona, intelligent interconnection of passengers, goods and means of transport played a decisive role here.

The Corona crisis is forcing many companies to balance cost-cutting measures with investments in digital infrastructure. Losses in earnings and the resulting limited budgets are forcing companies to set clear priorities in their future investment decisions. Mobile devices, communication and collaboration tools as well as VPN solutions are technologies in which companies want to invest more in this year. The topic of security and data protection is a never-ending issue that is gaining relevance in the context of home office workplaces. The use of cloud-based tools, private WLAN connections and unsecured workplaces brings new challenges to IT security.

Proportion of sales activities handled digitally in the company

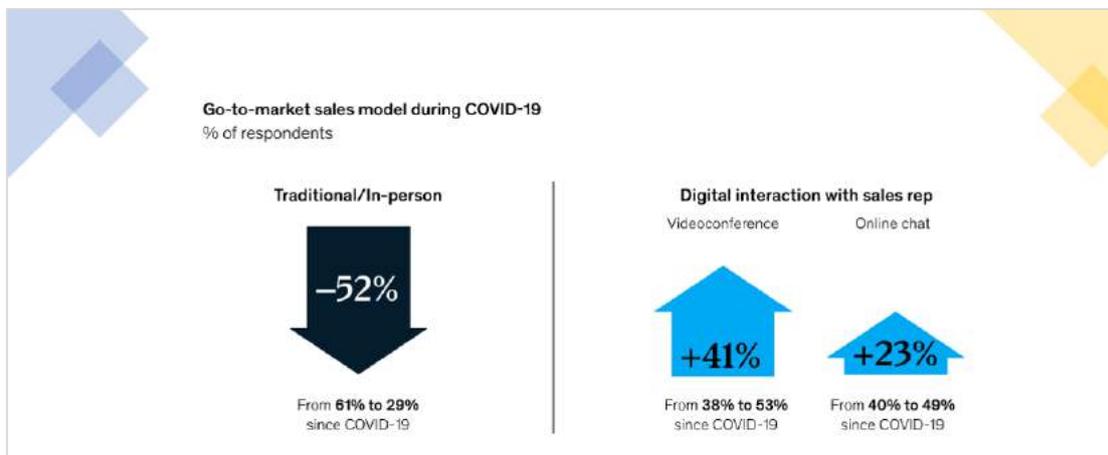
- Existing customer sales 52%
- Ordering/reservation of products/services 50%
- Internal sales information and communication processes 49%
- Ordering/contract conclusion 45%
- New customer acquisition / lead generation 44%
- After sales service 43%
- Processes downstream of customer acquisition 43%
- Sales call and video calls 40%
- Digitalisation of the service offering (online courses, trainings etc.) 28%

Source: Baulig Consulting “ Digitalisierung und Vertrieb im Mittelstand“ ([Link](#); only German)

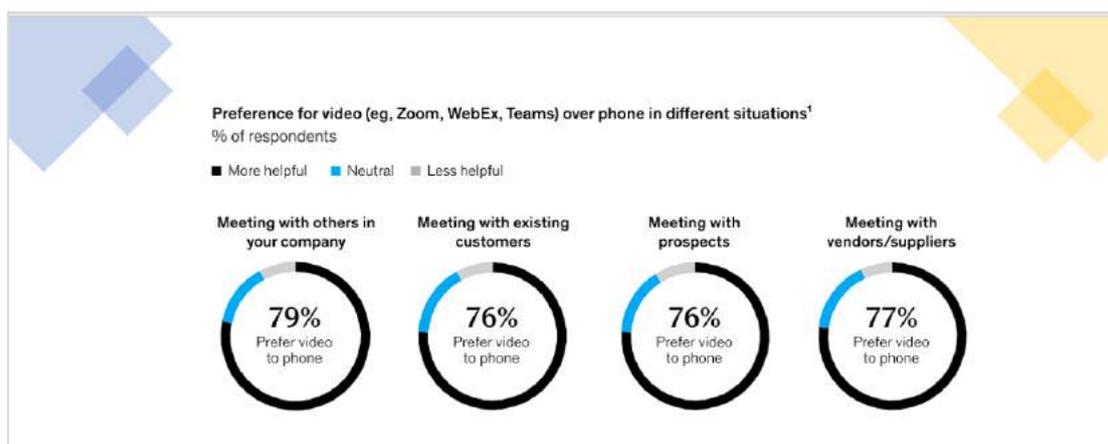


Go-to-market sales models

With the massive shift to digital media due to COVID-19, video and live chat have become the primary channels for interacting with B2B customers and closing deals, while face-to-face meetings and related sales activities have declined significantly. The majority of B2B companies have transitioned their go-to-market model from traditional to digital, relying heavily on video and online chat:



The amount of revenue generated from video-related interactions has jumped 69% since April 2020. E-commerce and video conferencing now together account for 43% of all B2B revenue, more than any other channel. Customers also noted that, given the choice, they prefer video communication over phone communication.



Due to the COVID-19 crisis, distribution channels are changing almost faster than through digitalisation. There is a surprisingly high acceptance of video calls and telephone conferences among customers everywhere. The adaptation of older sales colleagues to the new communication channels also worked better than expected - as there was no other alternative. Video calls usually work very well, especially with existing customers.



Source: McKinsey & Company “These eight charts show how COVID-19 has changed B2B sales forever” ([Link](#)) and Vertriebszeitung – Studie der Ruhruniversität Bochum ([Link](#)).

The results of a study “Hybrid Selling” from the Sales Management Department of Ruhr-Universität Bochum ([Link](#)) show, among other things, that in 2020, sales were affected by the COVID shutdown in 89% of the companies, which meant that the sales staff could not be on site with the customer. Nevertheless, 97% of the sales targets were achieved.

In order to continue interacting and collaborating with clients during the shutdown, the digitalisation of face-to-face sales was strongly promoted in 2020. In terms of digital communication channels, online traffic (customer calls via Zoom, MS Teams, Skype for Business, . . .) was used intensively in particular. In 2019, only 32.3% of companies used it, in 2020 it was already 86.5%. This corresponds to an increase of 171% within one year.

Massive growth in the use of digital channels in customer interaction





The hybrid sales approach

Generally, for all customer groups it can be stated that online visits are a proven way to get in touch with customers and to stay in touch. A detailed look at different customer groups shows that global accounts and key accounts/customers are well accessible via online visits with around 67% each. Other customer groups (customers B and C) have only an average acceptance of this communication channel, so that the accessibility of this customer group through online visits is also lower (customers B: 53%; customers C: 42%).

The future of sales is hybrid – a combination of online visits and face-to-face-meetings. The availability of customers differs not only between customer groups, but also with regard to the division into new and existing customers

In general, the results of the study indicate that online visits cannot completely replace on-site visits. On-site visits will continue to be necessary to establish relationships with new and existing clients. The COVID-19 pandemic has led to the development of hybrid sales models that combine online channels and face-to-face meetings with clients. Hybrid selling is a promising way to restructure sales capabilities and use them more efficiently and effectively.

Suitability of on-site activities and online activities for customer care and for the execution of certain sales measures			
		Online visit possible	On-site meeting necessary
New customers	First contact	54%	46%
	Advice for first purchase	55%	45%
	Follow-up talks	57%	43%
	Negotiation talk	46%	54%
	Processing and support	62%	38%

Suitability of on-site activities and online activities for customer care and for the execution of certain sales measures			
		Online visit possible	On-site meeting necessary
Existing customers	New product consulting / first order	76%	24%
	Re-purchase / Order	93%	7%
	Relationship management	59%	43%
	Negotiation talk	69%	31%
	Processing and support	63%	37%

Hybrid selling has great potential for additional sales activities

Hybrid selling has the potential to increase the productive time and capacity of salespeople. There are several reasons for this: 1. In 2019, salespeople spent an average of 13 hours per week traveling, a significant reduction from the average of 27 hours they spent in 2018. About 35% of this time was spent productively, such as making phone calls while travelling. The remaining 65% was spent only for travelling. By stopping respectively reducing travel activities in 2020, the formerly unproductive travel time could be invested in more direct customer contact. 65% corresponds to the equivalent of about 8.5 hours of working time, so that about one additional working day can be invested in direct customer contact.



The duration of client meetings was reduced through the use of online visits. Compared to on-site visits, which took about 70 minutes per visit (2019), only less than 40 minutes (2020) should be planned for an online visit. A limiting factor is that more preparation time should be invested for online visits. Skills unlocked through hybrid selling can be used for additional sales calls, intensive preparation for appointments or intensive market development, for example.



Hybrid sales can reduce the carbon footprint of any company

Reducing the travel time of sales staff not only increases their opportunities, but also reduces the carbon footprint of any company. This was calculated using an example: Imagine a company that employs 100 sales people in the field. This company has chosen a hybrid sales model where all field sales staff make online visits one day per week. If all employees do not travel to the customer one day a week, the travel time per employee is reduced by 20%. If the company follows this hybrid selling approach for a whole year, it saves 97.2 tonnes of CO₂. To achieve climate neutrality in another way, for example, the company would have to plant 7,800 beech trees every year.

Source: Sales Management Department; Ruhr-Universität Bochum ([Link](#))

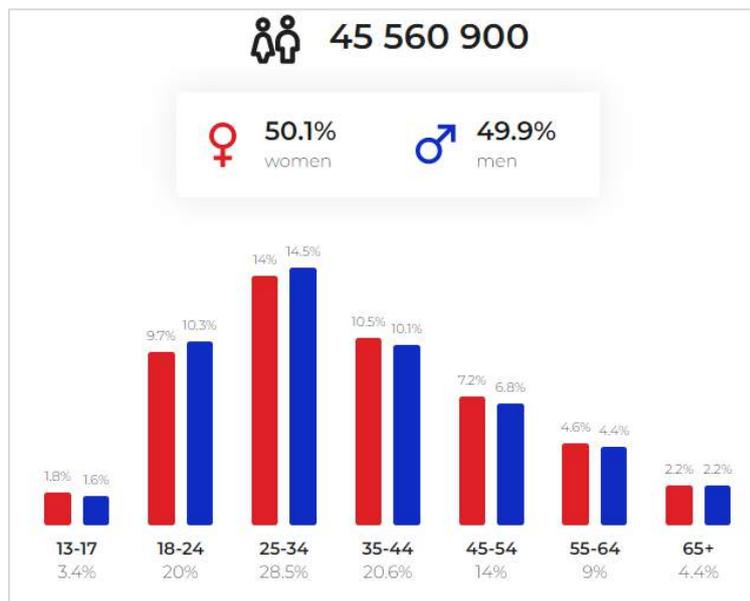


Social media users in Germany

The following charts and analyses show the use of the most important social media channels in the B2B sector in Germany. For children and young people, access to digital media is a way of participating in social life, not only since the start of the coronavirus pandemic. The internet is part of the daily lives of most children and young people. The Federal Statistical Office (Destatis) reports that roughly 89% of the 10 to 15-year-olds used messenger services such as WhatsApp, Telegram, Viber and the like in the 1st quarter of 2020. Nearly two thirds (61%) were active on social networks and almost half (43%) shared self-created content on websites. **Source:** Federal Statistical Office (Destatis) ([Link](#))

Facebook users in Germany (February 2022)

In February 2022, there were 45,560,900 Facebook users in Germany, representing 55.4% of the total population. The slight majority of them were women - 50.1%. Those aged 25-34 were the largest user group of the app. The biggest difference between men and women is among 18- to 24-year-old users, with men exceeding women by 300,000. Source: Napoleoncat ([Link](#))



Messenger users in Germany (February 2022)

In February 2022, there were 24,961,400 messenger (WhatsApp, Telegram etc.) users in Germany, which is 30.3% of the total population. The majority of the participants were women - 51.1%. People aged 25-34 were the largest user group (7,100,000). The largest gender difference occurs within the 55 to 64 age group, where women lead by 200,000. **Source:** Napoleoncat ([Link](#))



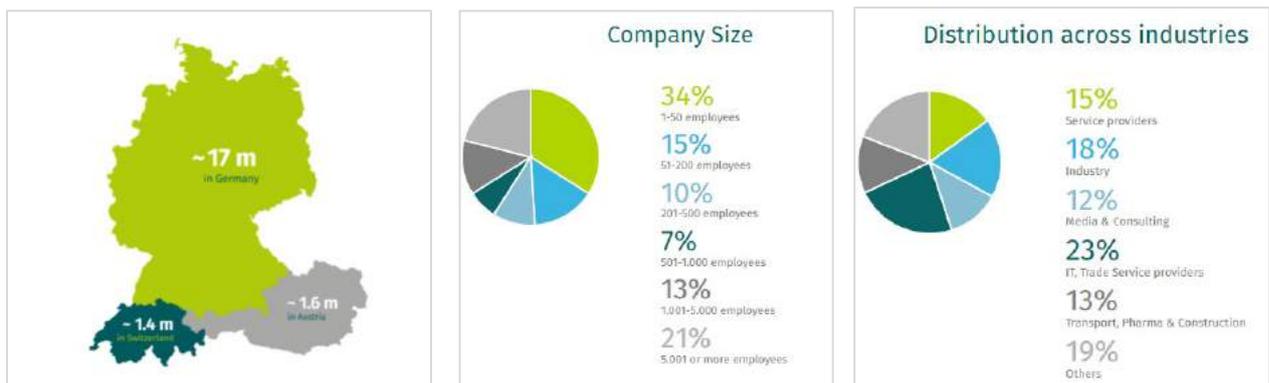
LinkedIn users in Germany (February 2022)

LinkedIn, based in Sunnyvale, California, USA, is a web-based social network for connecting people in business and building new relationships. LinkedIn is available in 24 languages and has over 660 million users in 193 countries and regions. In February 2022, there were 13,330,000 LinkedIn users in Germany, representing 16.2% of the total population. People aged 25 to 34 were the largest age group to use the service. **Source:** Napoleoncat ([Link](#))



XING

XING is the leading online business network in German-speaking countries with 20 million members. XING is a popular business-orientated platform similar to LinkedIn and is primarily used for recruitment purposes. With a slightly greater market share than LinkedIn in Germany and an ever-growing user base in the DACH region, XING provides an additional B2B advertising channel. Source: XING SE ([Link](#))





Links and additional documents and sources

Studies

- PWC – Digitisation – a quantitative and qualitative market research elicitation ([Link](#))
- European Commission - Germany in the Digital Economy and Society Index ([Link](#))
- Fraunhofer-Institut - DEUTSCHLAND-INDEX DER DIGITALISIERUNG 2021 ([Link](#)) (only German)
- Federal Ministry for Economic Affairs and Climate Action - Digitisation of the Economy in Germany ([Link](#))
- Federal Ministry for Economic Affairs and Climate Action - Digitisation of the Economy in Germany (entire study; only in German; [Link](#))
- techconsult GmbH – Study - This is how digital SMEs are (only German; [Link](#))
- Study “The digital status quo of the German SMEs” (only German; [Link](#))
- Global digital report - DIGITAL 2022: GERMANY ([Link](#))
- Bitkom „Corona führt zu Digitalisierungsschub in der deutschen Industrie“ ([Link](#); only German)

Websites

- Federal Ministry for Economic Affairs and Climate Action - Taking control of the digital transformation ([Link](#))
- Ratbacher Consulting - Digitisation in Germany: What is the current status? ([Link](#); only German)
- t3n Web Magazine - Study: Germany brings up the rear in Europe when it comes to digitisation ([Link](#); only German)
- Federal Ministry for Economic Affairs and Climate Action – Digital Summit ([Link](#))
- Federal Ministry for Economic Affairs and Climate Action – Digital Hubs ([Link](#))
- Bitkom – Press Releases ([Link](#))
- Bitkom – Publications ([Link](#))
- Dashboard - Deutschland-Index der Digitalisierung 2021 ([Link](#); only German)

Sales and Marketing

- KPMG - Digitisation Index Marketing and Sales 2021 ([Link](#); only in German)
- Zürcher Hochschule für Angewandte Wissenschaften - Marketing Automation Report 2022 ([Link](#); only in German)
- Marketing Tech Lab GmbH (Statista Design) - Marketing Tech Monitor 2021 ([Link](#); only in German)
- Baulig Consulting “ Digitalisierung und Vertrieb im Mittelstand“ ([Link](#); only German)
- Vertriebszeitung - Studie: Erkenntnisse aus der Coronakrise für den B2B-Vertrieb ([Link](#); only German)
- Study „Hybrid Sales“, Sales Management Department; Ruhr-Universität Bochum ([Link](#))



Part B

General overview about the status of digitalisation in Germany





General observations on the status of digitalisation in Germany

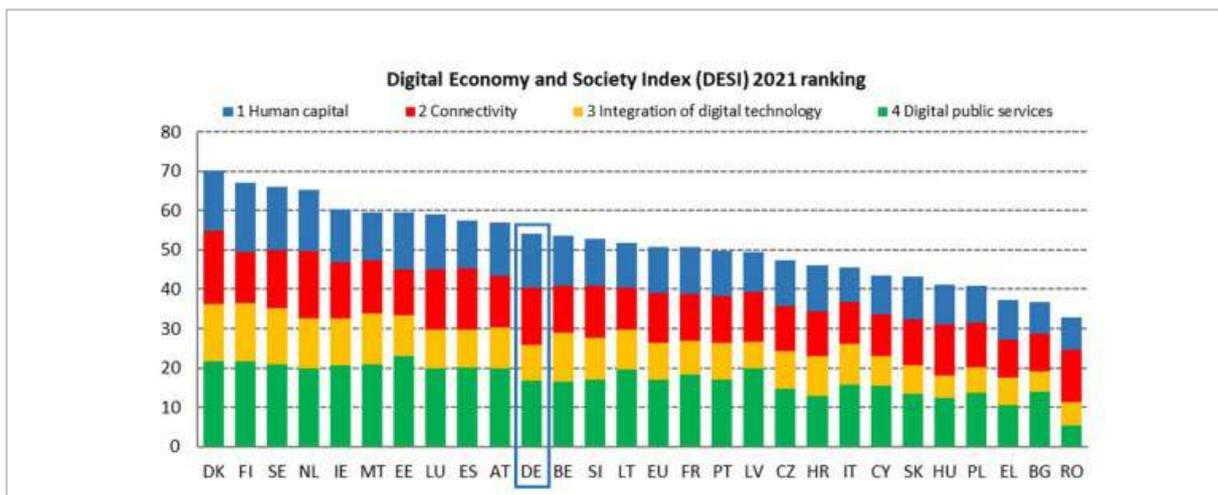
The European Commission has been monitoring the digital progress of Member States and has published annual reports of the Digital Economy and Society Index (DESI) since 2014. Each year, the reports include country profiles that help Member States identify areas for priority action and thematic chapters that provide an EU-level analysis in the key digital policy areas.

In the Digital Economy and Society Index (DESI) 2021 ([Link](#)), Germany ranks 11th out of 27 EU member states. Germany performs relatively well in broadband connectivity, although roll-out is constrained by a lack of planning and construction capacity and a digital gap between urban and rural areas still exists.

DESI 2021	Germany		EU
	rank	score	score
	11	54.1	50.7

Germany leads the EU in 5G readiness and ranks second in fixed broadband connectivity. However, although performance in very high-capacity fixed broadband coverage has improved (from 33% to 55.9%), it remains below the EU average (59.3%). In terms of human capital, Germany performs above average on almost all indicators - with the exception of the share of female information and communication technology (ICT) specialists. Basic digital skills and basic software skills exist across the country, but there is a shortage of ICT professionals. This shortage also affects the integration of digital technologies by enterprises. Less than a third of businesses (29%) exchange information electronically and only 18% of SMEs issue electronic invoices.

Digital Economy and Society Index 2021

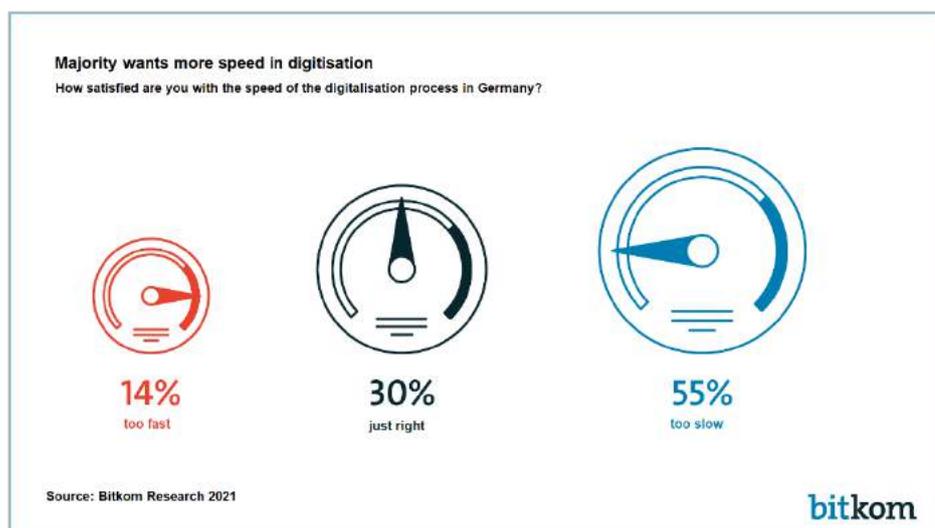
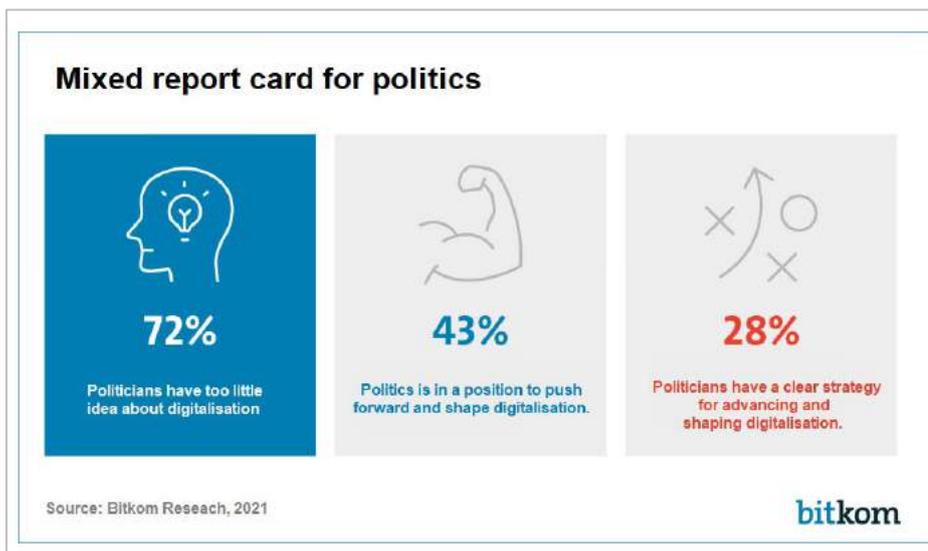


Source: European Commission Germany in the Digital Economy and Society Index ([Link](#))

Germans give their digital policy a very mixed report card. Seven out of ten voters (72%) believe that Germany's



politicians have too little idea about digitalisation. Not even half (43%) believe that politics is capable of advancing and shaping digitalisation. And only three out of ten (28%) attest that politicians have a clear strategy for this task. This is the result of a representative survey of more than 1,000 eligible voters in Germany conducted in November 2021. Achim Berg, president of Bitkom, summarises the results of the study: "There is justified dissatisfaction among the population regarding the political strategy and the pace of digitalisation." Bitkom is Germany's digital association and represents more than 2,700 companies of the digital economy. It is the most important voice in the German market on all questions concerning the status of digitalisation. **Source:** Bitkom ([Link](#))





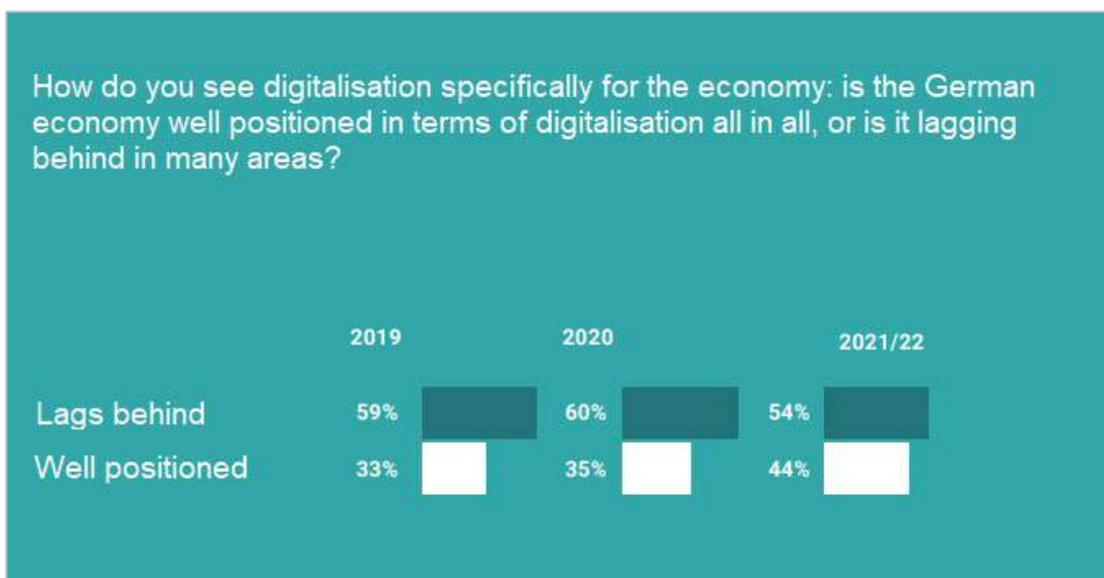
There is also a widespread dissatisfaction in view of the unclear distribution of competences in the federal structure and in the federal cabinet. Seven out of 10 Germans (70%) believe that the federal government, the states and the municipalities do not cooperate enough to advance digitalisation. Six out of ten (61%) believe that different ministries often get in each other's ways when it comes to digital policy. 63% would like the new federal government to take digitalisation more seriously. In digital policy, the federal government has lacked determination and unconditional will in the past legislative periods. **Source:** Bitkom ([Link](#))

According to the Digital Report ([Link](#)) from European Center for Digital Competitiveness from January 2022, the current situation and the political and economic evaluation of digitalisation in Germany are as follows:

- 82% of business and political leaders expect the new German government to drive digitalisation more strongly in the future
- Germans see drones, 3D printing and artificial intelligence as the most important digital technologies of the future
- FDP is seen as the biggest driver of digitalisation. CDU/CSU had to accept heavy losses.

The new coalition must place future technologies more in the foreground of digital policy with start-ups having top priority. Expectations for a coalition of SPD, Grüne and FDP are high. 82% of business and political leaders expect the new government to focus more on digitalisation in the future. This is also an urgent need.

The situation in Germany regarding the future of digital technology remains precarious. 94% of business and political leaders believe that Germany is lagging behind in digitalisation. The public sector remains critical about digitalisation: Only 2% of German managers see authorities, public agencies and the public sector as well-positioned. The digital transformation is evaluated most positively by companies. A year ago, only 35% of business and political leaders believed that these companies were well positioned for digitalisation, compared to 44% this



year.

Source: DIGITALREPORT 2022; ([Link](#))





The Digital report is published annually and is currently in its third consecutive year. It was developed by the European Centre for Digital Competitiveness at ESCP Business School. On its behalf, the Allensbach Institute conducts a representative survey of the population on the status of digitization in Germany. In addition, the report is based on the results of a survey of around 500 top political and business leaders, including managing directors and board members from the business sector as well as leading politicians such as ministers, state secretaries, and parliamentary group leaders. The population survey is based on a total of 1,069 face-to-face oral interviews with a representative cross-section of the population aged 16 and over. The survey was conducted between December 1st, 2021 and January 4th, 2022.

You can download the survey free of charge: [Link](#)

D21 DIGITAL INDEX 2020 / 2021

The D21 Digital Index is the annual status report on the digital society in Germany. The D21 Digital Index provides a comprehensive picture of the level of digitalisation in the German society every year. More than 16,000 Germans aged 14 and over were surveyed, including offline. The D21 Digital Index thus represents the entire German resident population.

In addition to the examination of the level of digitalisation of the population also in the light of the COVID-19 crisis, there are some results that give cause for concern and reflection:

- Digital sustainability: Impact of digitalisation on the environment is difficult for the majority to understand
- Digital participation: Low-educated and older people benefit significantly less from digitalisation from their own perspective
- The digital skills gap remains: The more highly educated are clearly better skilled. There is also a generational gap (baby boomers and all older generations with low skill levels on the one hand, everyone from Generation X onwards with above-average digital skills on the other hand)
- Democracy and cohesion: Only 56 percent are confident in identifying disinformation on the internet, 28 percent see digitalisation as a threat to democracy.
- Positive news: Society's level of digitalisation is rising - Digital Index is now at 63 out of 100 points

Other issues that should be considered over time: use of devices, internet access, diversity of use and attitudes towards digital issues.

You can download the entire study ([Link](#)) together with lots of charts, audio files and other documents free of charge on this site: [Link](#). The report lists all areas and fields of the current state of digitalisation in Germany and shows the degree of use of devices, media, channels in the private and public sector.

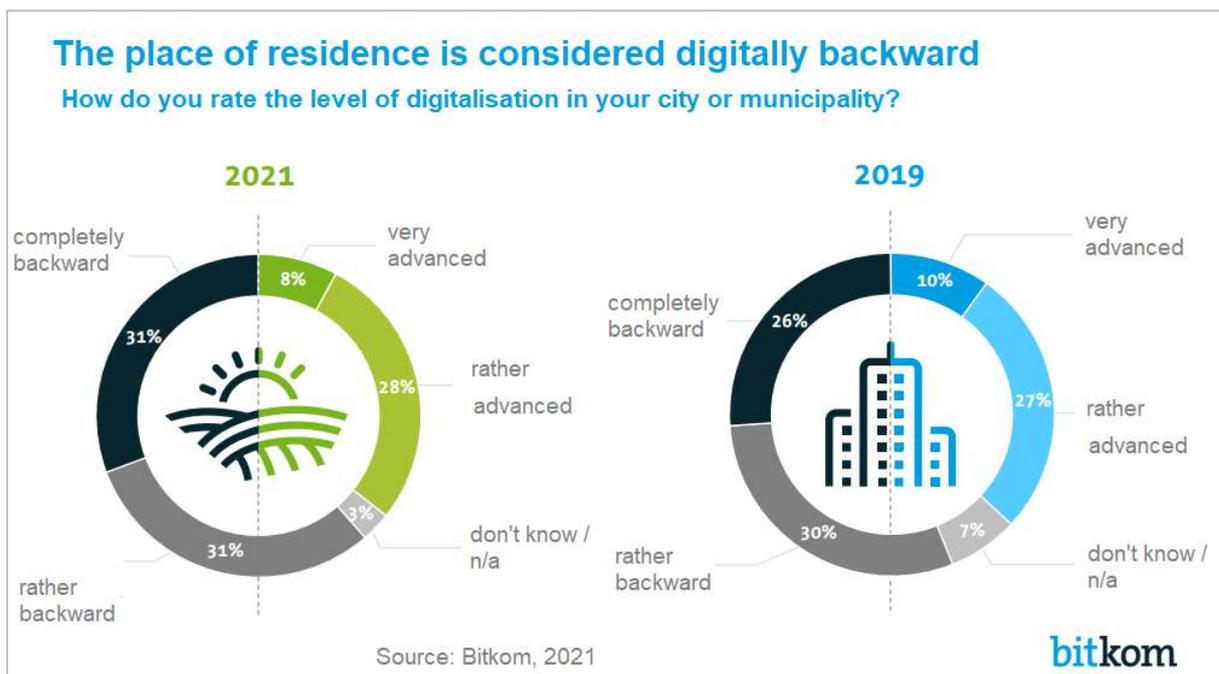




Digitalisation in public administration - where Germany is lagging particularly behind

The digital transformation at the municipal level is progressing too slowly for most Germans. Four out of five (86%) demand more dynamism from their municipality in digital transformation. In 2020, 78% are calling for a stronger and faster approach to the digitalisation of their city or municipal administration, compared to 69% in 2019. Three-fifths of respondents (69%) even state that their local government is lagging behind in terms of digitalisation. Only about a third (36%) believes that their municipality is digitally progressive. These are the results of a representative survey of more than 1,000 people aged 18 and over commissioned by the digital association Bitkom.

One way to advance the digitalisation of municipalities and communities is to increase power at the federal level. Four out of five respondents (81%) said the federal government should be given more competences to set national standards.



From a citizen's perspective, the ongoing digitalisation of overburdened cities will be a big step in the digital transformation at federal, state and municipal level. The vast majority of Germans want digital cities. Four out of five (80%) want to handle administrative matters online. 88% feel it could be easier: They believe that filing, updating and transferring documents should be automated. Three quarters (76%) would like to use an electronic ID card for online registration. 75% of respondents support a single service account that allows identification, verification and access to digital public services. The majority of respondents (58%) are willing to make their master data available to public authorities and to exchange and reuse it.



Digital services for families and children are particularly popular - from birth registration to education. The majority of the respondents (56%) would like to apply for family benefits online, just as many (55%) would apply for a birth certificate online. 95% of respondents also support the central registration portals of day-care centres and schools or automated proposals for day-care centres. In schools, 98% asked for good IT equipment and 88% for a local "Digital Focus Programme" at their place of residence.

Source: Bitkom ([Link](#)) and Presentation (in German; [Link](#)) about the status of digitalisation in cities and municipalities.



Digitalisation of Industries in Germany

In 2021, 92% say that their digitalisation has become more important due to the COVID-19 pandemic. In 2020, the ratio was only 84%. And as many as 94% believe that the digitalisation of the German economy is becoming more important (2020: 86%). Compared to 2020 (27%), 34% more companies see themselves as pioneers of digitalisation. Two-thirds (65%) think they are late (2020: 71%), but no one believes they have missed the boat (2020: 1%).

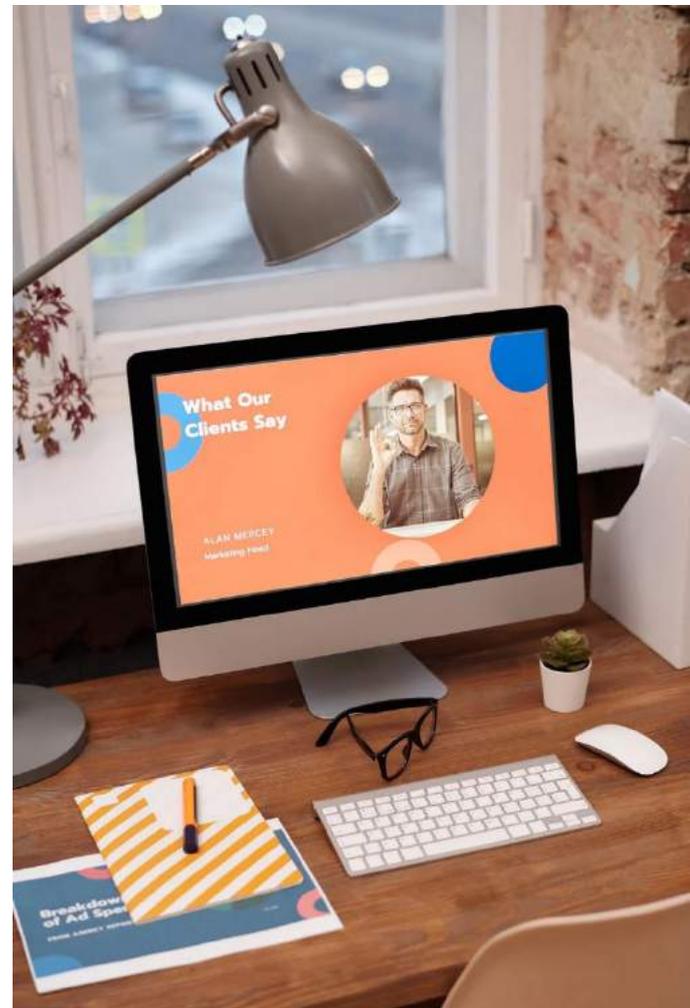
COVID-19 pandemic as a driver

This is also reflected in many specific digitalisation measures initiated or intensified due to coronavirus pandemic. 92% have introduced or strengthened video conferencing instead of face-to-face meetings, three quarters (74%) have digital collaboration tools and about two thirds (63%) have acquired additional equipment. Processes have often been codified, e.g. with digital documents instead of paper (66%) or digital signatures instead of handwritten signatures (60%). 60% are developing digital business models and 41% are following recommendations for digitalisation. In human resource management 8 out of 10 (81%) expanded or introduced home office, 61% promote staff training in digital topics, about one in two companies (48%) digitises recruitment and on-boarding and 17% have hired digitalisation experts.

More awareness

The digitalisation push by the coronavirus is also leading to greater awareness of key digital technologies in the German business community. Three quarters (73%) now say they are using, planning or discussing big data. Two years ago, in 2019, it was only 59%. The Internet of Things (IoT) is particularly important in connected manufacturing, which engages two-thirds (65%) of the workforce, up from 44% in 2019, with around half interested in 3D printing (54%, 2019: 43%), the new 5G mobile standard (53%, 2019: 32%) and virtual or augmented reality (50%, 2019: 32%). One in three companies (34%) are looking at Artificial Intelligence (AI) or using AI technologies - compared to 12% in 2019, this is the most significant increase. Autonomous vehicles play a role in 30% of companies (2019: 17%).

There have been significant changes in the last few years in the reasons why companies are struggling with digitalisation. 8 out of 10 (79%) complain about data protection requirements. This is an increase of 10% compared to the previous year. Two-thirds (65%) of companies name data protections requirements as a barrier to



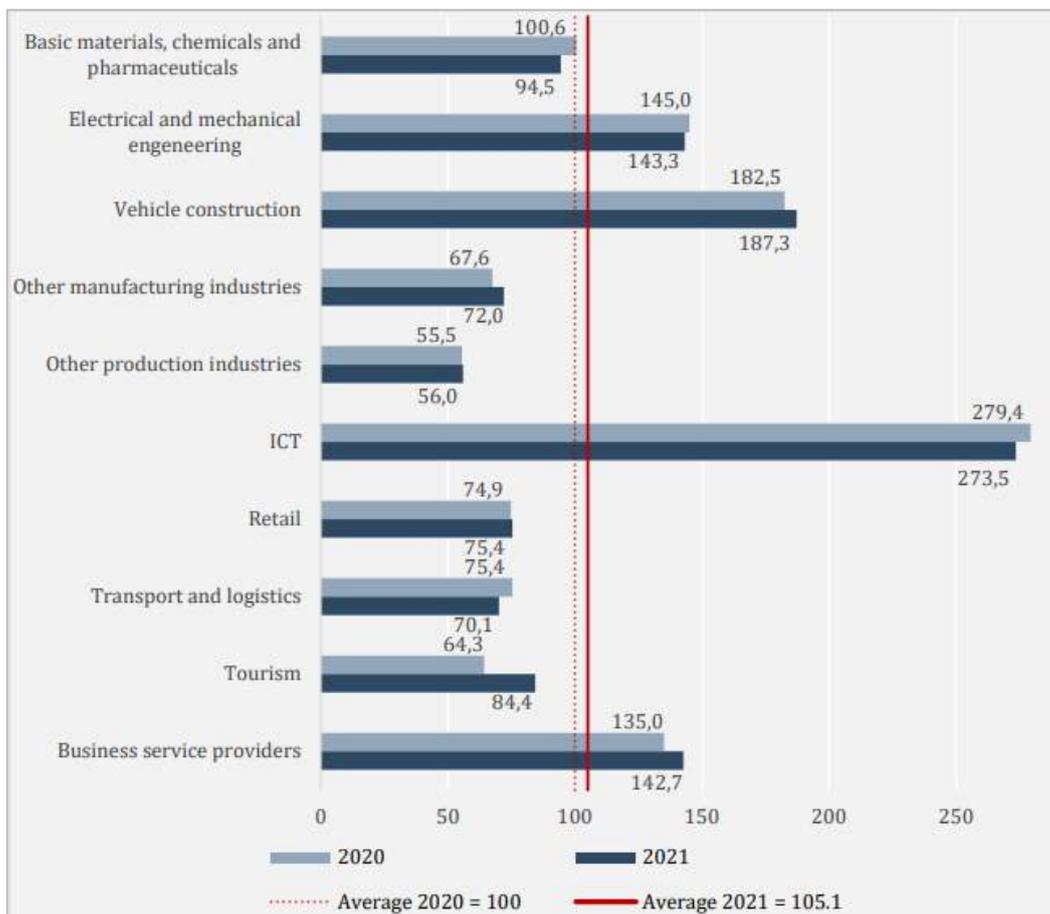


digitalisation, and the lack of skilled workers has also increased by 10%. And almost one in two (46%) say they have too little time in their day-to-day business to drive digitalisation forward (2020: 37%). 30% complain about the long decision-making process that delays digitalisation. This is significantly more than the 19% of the previous year. On the other hand, technical security requirements (42%), lack of financial resources (34%) and lack of marketable solutions (23%) are only few named challenges for digitalisation.

Source: Bitkom - Germany's digital association representing more than 2.000 companies of the digital economy ([Link](#))

An analysis of the ten sectors of the German economy (see chart below) shows a mixed picture, with some sectors recording significant growth and others stagnating or even declining. Overall, industry has only become slightly more digital compared to the previous year.

The strongest growth in digitalisation is recorded by tourism. The index value of this industry rose from 64.3 to 84.4 points. However, it is still clearly below the average value for all sectors of 100 points in 2020 and 105.1 points in 2021. **Source:** German Economic Institute, IW Consult ([Link](#))





The different sectors of industry at a glance

- **Information and communication technology (ICT):** Despite the drop of 5.9 points, the ICT sector remains the leader with 273.5 points, more than 86 points ahead of the second-placed sector, vehicle construction. Vehicle manufacturing was able to catch up somewhat with the ICT sector and rose by around 11 points compared to the previous year. As in 2020, the ICT industry remains the clear leader in all categories. In the research and innovation activity category, the industry performed well above average. The industry achieved its worst score in the business models category (168.2 points) and its best in the innovation landscape category (601.3 points). The ICT sector is particularly affected by the decline in the qualification category (minus 21.8 points), but the sector is also losing in the processes (minus 13.3 points) and business models (minus 11.1 points) categories. The industry's products are significantly more digital than in the previous year (plus 18.1 points). The industry also experiences significant gains in the innovation landscape category (plus 28.6 points).
- **Retail:** The level of digitalisation in retail remains almost unchanged. The index value rises slightly from 74.9 to 75.4 points. Retail scores best in the processes category, which is also the only category with an above-average result. The worst score for retail is in research and innovation activities (3.8 points). Retail achieves increases above all in the categories innovation landscape (plus 25.8 points) and processes (plus 13.8 points). Decreases have been achieved in qualification (minus 14.6 points). With the increasing popularity of e-commerce it can be expected that retail will become more digital in the coming years.
- **Vehicle construction:** The digitalisation index for vehicle construction rose from 182.5 to 187.3. In the category of research and innovation activities, vehicle construction is the absolute leader among all industries. The business model has the worst score. Vehicle construction scored below average in business models, products and innovations. There were increases in the categories research and innovation activities (plus 52.8 points), processes (plus 17.9 points) and product (plus 10.8 points). There were declines above all in the areas of business model (minus 24.3 points) and qualification (minus 17.2 points). Overall, the automotive industry has changed significantly compared to 2020. Significant growth in processes and products contrasts with a sharp decline in business models. In the future, it will be important to transform the enormous research and innovation activities in





automotive manufacturing more effectively into digital business models. Moreover, vehicle manufacturing is Germany's digital flagship, especially in research.

- **Electrical and mechanical engineering:** The digital index value of the electrical engineering and mechanical engineering industry cluster fell slightly. It decreased from 145.0 to 143.3 points. This industry group scored highest in the research and innovation activity category and lowest in the business model category. It scored below average in the product and business model categories. Increases were recorded mainly in processes (plus 19.7 points), losses, on the other hand, in qualifications (-19.1 points) and products (-12.3 points). In the area of processes, the electrical and mechanical engineering industry group was already among the first movers in 2020. The growth in 2021 is mainly due to the advancing process networking in the market environment. Overall, the positive development of processes points to corresponding developments in the digitalisation of future products and business models.



- **Other manufacturing industries:** Digitalisation in other manufacturing sectors is increasing slightly. The index score rose from 55.5 points to 56.0 points. The industry performed below average in all categories. This industry group received the highest category score in the process category. This category improved (plus 12.1 points) but remains the lowest in the industry comparison at 72.0 points. The performance of research and innovation activities was below average (4.5 points). The more digitalised processes within this industry group indicate that increased digitalisation can be expected in other categories in the future.

- **Business service providers:** The index of industry-affiliated service providers rose from 135.0 to 142.7 points. Industry-linked service providers scored best for products and worst for skills. Like the ICT industry, they have been the only industry group that has achieved above-average results in all categories. The biggest gains were in product category (up 30.7 points), innovation environment (up 21.4 points) and process (up 13.6 points). Losses have been recorded in the qualification category (minus 11.4 points). Business service providers show a high degree of product digitalisation as they are facing increasingly high demands for digital products. This demand increased during the Corona pandemic, when digital solutions were used to maintain the ability to work. In times of a pandemic, these interim solutions often become real and permanent solutions: Companies have recognised the benefits of digitalisation. Therefore, it is to be expected that business-related service providers will increase significantly in the product category.

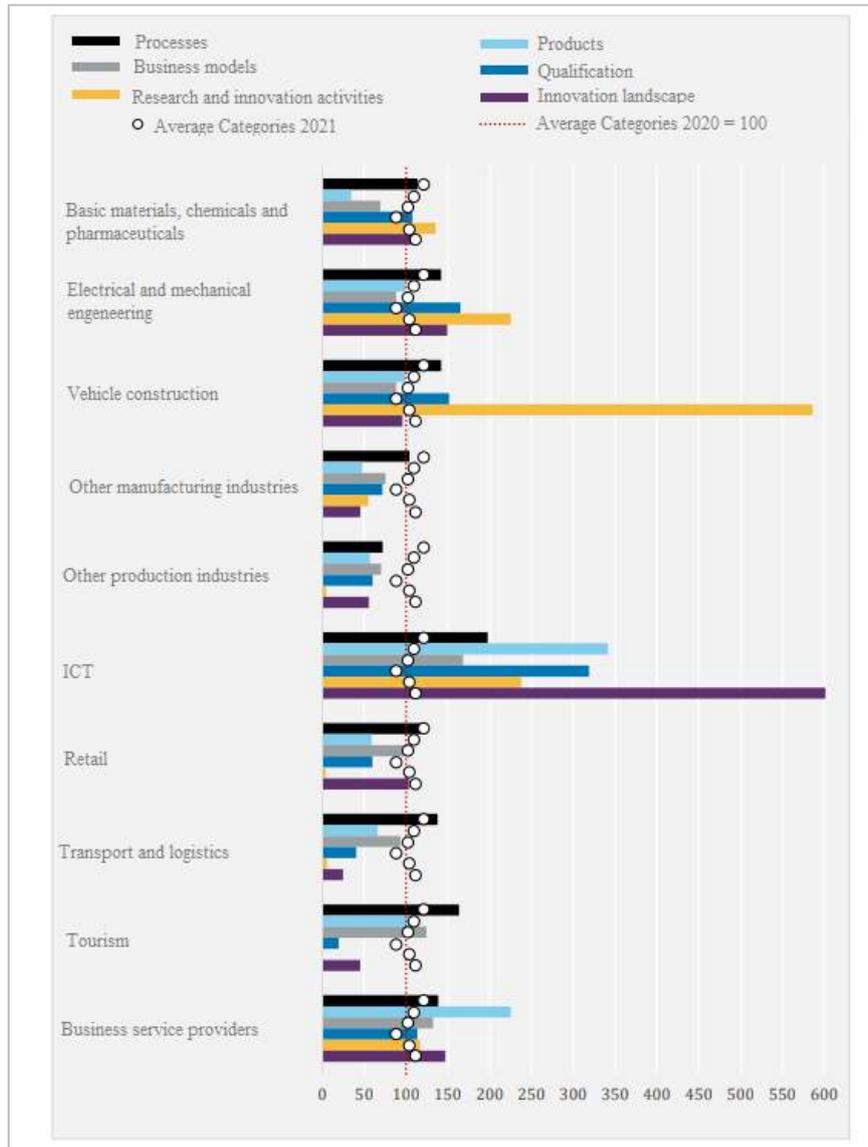


- **Tourism:** Digitalisation in the tourism industry is progressing rapidly. Its statistical value rises from 64.3 to 84.4 points. The overall increase of 20.2 points in the tourism industry index (incl. hotel and restaurant industry) is mainly caused by a strong increase in the process category (plus 84.3 points). The industry is also making progress in products (+15.3 points) and business models (+7.3 points). In all three categories the result is above average. There were declines in the category qualification (minus 11.1 points). In a sector comparison, tourism continues to lag behind in qualifications as well as in research and innovation activities. Especially in the tourism industry, the Corona pandemic seems to have accelerated the digitalisation process. The hotel industry in particular had to face restrictions in business operations during the long period of the lockdown and also afterwards. Many companies have taken the need for change very seriously and are now offering their products more and more via digital distribution channels.

Results of the categories of the Digitisation Index by sector.

Category score in points; survey year 2021

Source: German Economic Institute, IW Consult ([Link](#))





The challenges of digitalisation in Germany

Germany's companies are generally not in a bad position concerning digitalisation. Germany is one of the leading innovation countries, especially in Europe, and can score points in individual key technologies that are important for digitalisation. However, other countries, especially the USA, China and South Korea, often seem to be more successful in transforming smart ideas into successful products and companies.

Germans are not fundamentally negative about digitalisation and new technologies - on the contrary, they see many advantages in digitalisation. However, they are concerned about their personal data and would like to see it handled more restrictively than most other Europeans. However, it is particularly the systematic use of data, e.g. for the optimisation of production and administrative processes or for new business and work models, that creates huge growth potential for this digitalisation. When deciding how restrictive data protection should be applied, the costs of unrealised opportunities - for example, new business models, more efficient processes or improved public services - should also be taken into account.



A total of 85% of the 500 companies surveyed in a study ([Link](#); only available in German) by the Institute of the German Economy and the Federation of German Industries describe "grey zones related to data protection law" in general as a big challenge for an economic use of data;

the lack of legal certainty in the anonymisation of data is cited as a concrete example by 73%.

A data sharing obligation, which is currently under discussion, is rejected by a large majority of companies (85%). Digital companies are only slightly more positive about such a data sharing obligation, with 18% agreeing, while among the larger companies only one in twenty likes the idea.

Digitalisation challenges: Data protection, lack of skilled workers and lack of time

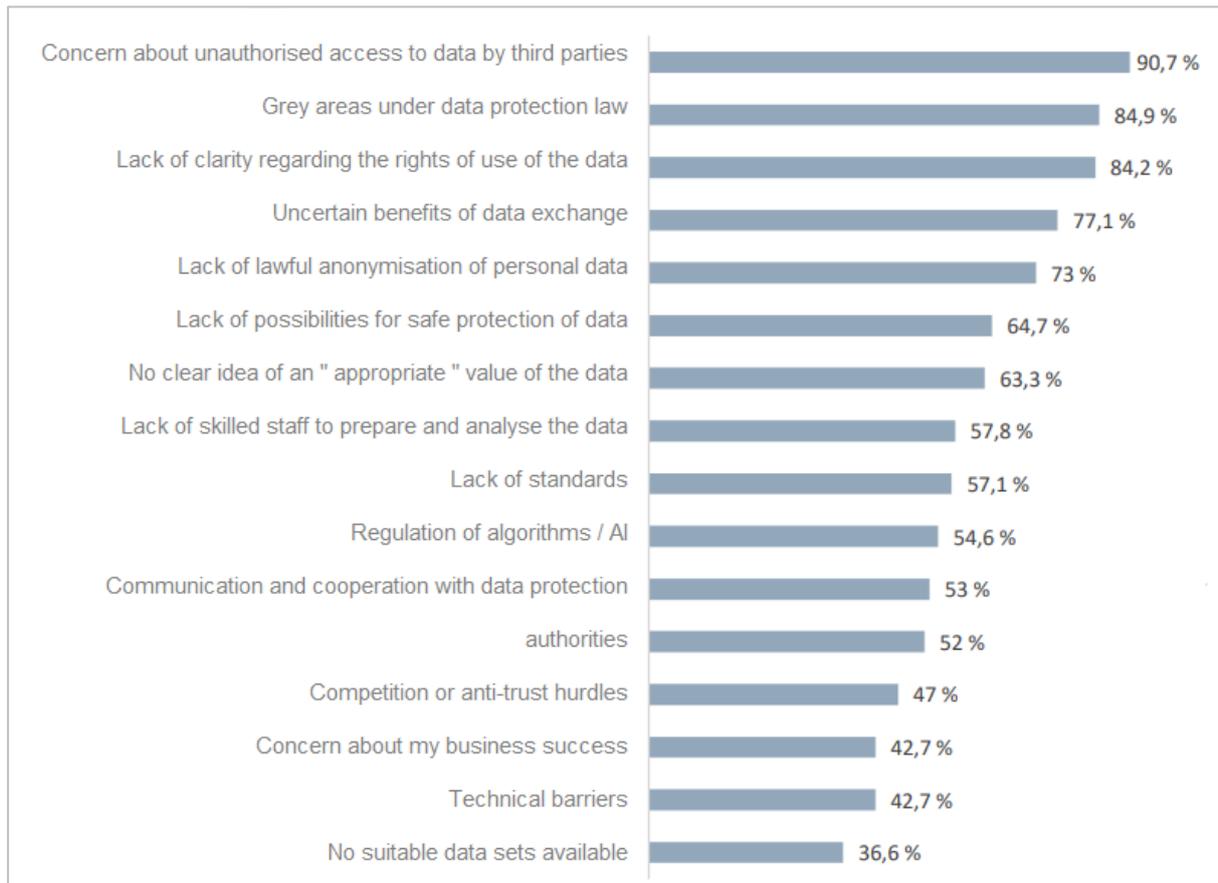
There have been significant changes since 2020 in the reasons that slow down companies in their digitalisation efforts. For example, 8 out of 10 (79%) complain about data protection requirements. This is an increase of 10% compared to last year. The lack of skilled workers and digitalisation experts has also increased by 10%, with two thirds (65%) of companies citing it as a barrier to digitalisation. And almost one in two (46%) say that there is a lack of time in day-to-day business to push forward digitalisation (2020: 37%). Long decision-making processes that slow down digitalisation are complained about by 30%, significantly more than in the previous year (19%).

On the other hand, requirements for technical security (42%), insufficient financial resources (34%) or the lack of marketable solutions (23%) were mentioned less frequently as a big challenge for digitalisation. According to the



association Bitkom, "data protection is increasingly becoming the number one barrier to digitalisation. This is not only about the legal requirements. There is huge uncertainty in Germany, triggered by a confusion of interpretation with 17 data protection authorities in the states and one in the federal government". ([Link](#))

Biggest challenges for greater commercial use of data



Source: Institute of the German Economy and Federation of German Industries ([Link](#)).

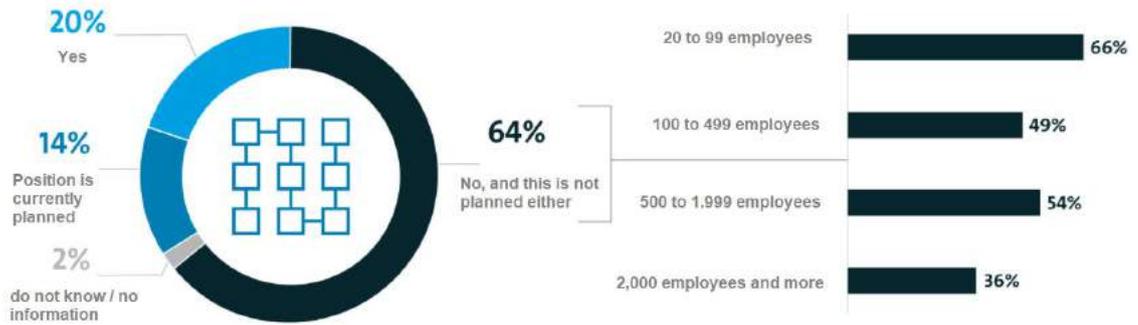
Many companies will soon have more clearly defined responsibilities for digitalisation. At the end of 2021, only one in five companies (20%) had a Chief Digital Officer (CDO) or a Digital Executive. At the same time, however, 14% said that the establishment of a position of this kind was currently planned. This is a representative survey of 602 companies in Germany with 20 or more employees, conducted on behalf of the digital association Bitkom. However, the vast majority of respondents do not have a CDO or a comparable position and do not plan to obtain one in the near future.

Large companies are ahead in innovation and growth. Only one in three companies (36%) with 2,000 or more employees does not have a Chief Digital Officer, compared to 66% of smaller companies with only 20 to 99 employees. In the category "100 to 499 employees" it affects every second (49%) company, as well as in companies with 500 to 1,999 employees (54%).



Clear responsibility for digitisation remains the exception

Does your company have a Chief Digital Officer or a comparable position?



Source: bitkom Research

bitkom



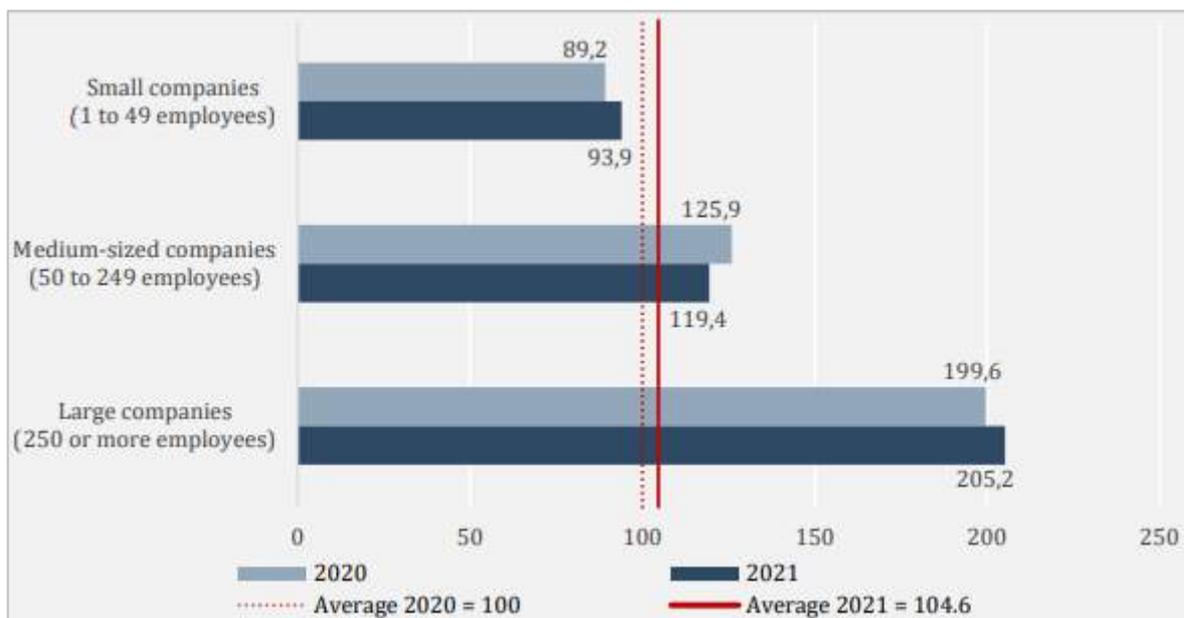
Digitalisation is depending on company size

There are big differences in the degree of digitalisation, depending on the size of the company - small companies, medium-sized enterprises and large companies.

In two classes of companies the digitalisation index increased, in one (medium-sized) it decreased. Overall, the level of digitalisation varies greatly depending on the size of the enterprise.

On the other hand, requirements for technical security (42%), insufficient financial resources (34%) or the lack of marketable solutions (23%) were mentioned less frequently as a challenge for digitalisation. According to the association Bitkom, "data protection is increasingly becoming the number one barrier to digitalisation. This is not only about the legal requirements. There is great uncertainty in Germany, caused by competing competences of the individual authorities, the 16 federal states and, moreover, EU requirements.

Source: Federal Ministry for Economic Affairs and Climate Action; Digitisation Index 2021; Digitisation of the Economy in Germany ([Link](#))



- Digitalisation in small businesses** is increasing. The index value of their reported results rises from 89.2 to 93.9 points. They are best at processes, but their weak point is in qualifications. Small companies can achieve above-average results on the product side (plus 11.3 points) and gain the highest score in processes (plus 21.7 points). Despite the increase in the processes category, small companies continue to lag behind in this category. The same applies to the categories business models and qualification as well as innovation landscape. However, they are - as already in 2020 - product pioneers. Small companies are driving digitalisation forward primarily because they offer digital products themselves. Many small companies are active in the ICT sector. The weak performance in the skills category indicates that small businesses rely on external (IT) services. It can be assumed that the Corona pandemic has hit smaller companies harder than larger companies, as they have fewer financial resources and are more dependent on external financing. Digitalisation projects may have been paused or postponed, especially in small

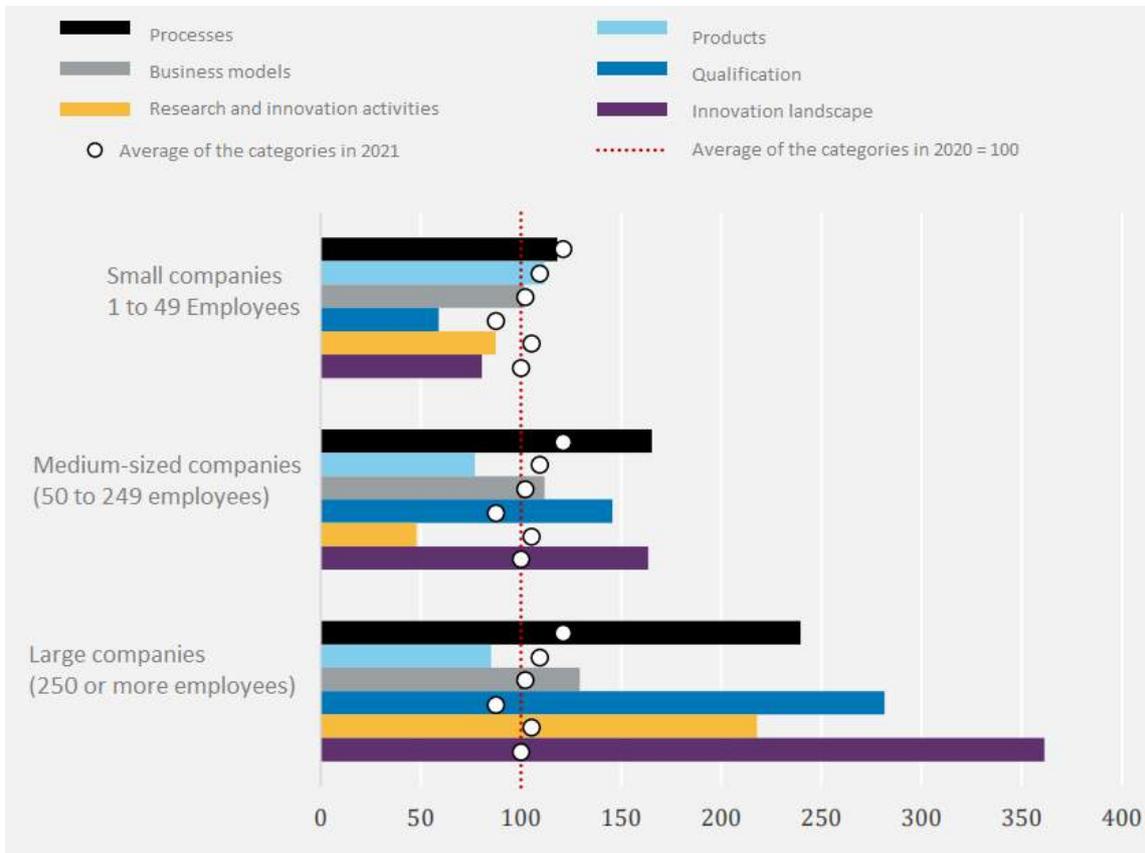


companies, due to the current economic conditions. On the other hand, small businesses may have been able to respond more quickly to the changing demands during the pandemic and the use of digital technologies. This confirms that there has been an increase in the category of processes.

- The index score of **medium-sized companies** falls from 125.9 to 119.4 points. Medium-sized enterprises are positioned between small and medium-sized enterprises and large enterprises in almost all categories. Exceptions are product categories and research and innovation activities, where medium-sized companies score lower. SMEs score highest in their processes and lowest in their research and innovation activities. They score above average in processes, business models, skills and innovation perspectives. SMEs are particularly affected by the low qualification category (minus 21.1 points). An interesting point is that medium-sized companies are less digital overall in 2021 than medium-sized companies were in 2020.
- Digitalisation of **large companies** increases from 199.6 to 205.2 index points. In 2020, large companies are tending to surpass average performers in a number of important areas, including skills, processes, research and innovation activities, and the innovation landscape. Small companies still only lead in product categories, also because of their ICT-focused industry structure. Large companies perform well in the innovation landscape category, but when they measure their performance against other product categories, they perform quite low. The "products" category is the only category in which large companies underperform. Large companies in particular benefit from the increase in efficiency through the use of digital processes.



This is due to the number of processes and the tendency to have more internal and external communication and cooperation partners than SMEs. It is remarkable that the category of processes has increased so strongly, although it is generally considered to be more difficult to implement process changes in larger companies due to higher complexity and hierarchies. Presumably, digital technologies were introduced more quickly during the Corona pandemic because there was no other way to communicate. There is room for improvement in products and business models. Large companies are pioneers in many areas but are not yet as digitally savvy as they could be. Source: Institute of the German Economy and Federation of German Industries ([Link](#))





Digitalisation of the regions (states) in Germany

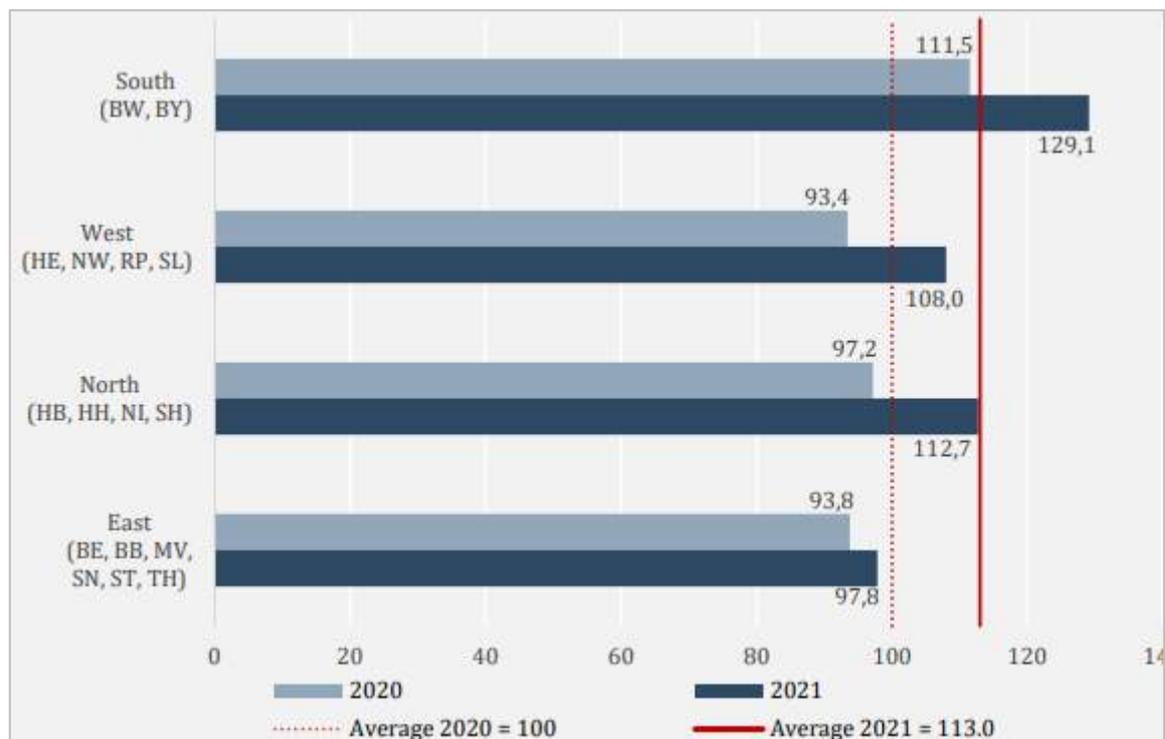
As part of the data collection for the Digital Index ([Link](#)), the 16 federal states were divided into four groups or clusters.

The individual federal states (Bundesländer) belong to the following clusters:

- South: Bavaria and Baden-Württemberg
- North: Lower Saxony, Schleswig-Holstein, Bremen and Hamburg
- West: Hesse, North Rhine-Westphalia, Rhineland-Palatinate and Saarland
- East: Berlin, Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia

A clear increase in the level of digitalisation can be observed in all four country groups. All country groups have gained more index points in 2021 compared to 2020, although to different degrees. Overall, the absolute gap between the most and least digitised country groups is widening.

Results of the Digitalisation Index by federal state group



Source: Digitalisation Index 2021 ([Link](#))

The Digitalisation Index - a publication of the German Federal Ministry for Economic Affairs and Climate - is updated annually. It tracks the development of digitalisation in the economy as a whole as well as at the individual differentiation levels (federal state, region type, industry, company size). Recommendations for measures can then



be derived on the basis of the progress that may have been made and the deficits that have been observed. The goal is to create the conditions for successfully shaping the digitalisation of the economy in Germany.

The **southern group of states** with the federal states of Bavaria and Baden-Württemberg could expand their pioneering role in 2021. Their index value increases by 17.6 points and then reaches an above-average value of 129.1 points. Both the companies and regional location conditions show a high level of digital maturity. This group is home to a number of companies that were not originally built with digital products and business models in mind, but were shaped by traditional products and business models. Especially in this context, the progress of the digitalisation of business models is remarkable. Advanced activities in their research and development (R&D) activities are a good example and testimony of the progressing business digitalisation. A strong supply of skilled labour and an active innovation ecosystem contribute to the digital transformation.

The **group of western federal states** (Hesse, North Rhine-Westphalia, Rhineland-Palatinate, Saarland) recorded a significant increase in digitalisation in 2021 compared to 2020, scoring 108.0 index points. Even though the gap to the leading performers in the southern group of federal states is still growing, the digitalisation of the economy in the western federal states has made a significant step forward. Especially in terms of the innovation landscape, the western state group still has some catching up to do. The staffing of scientific institutions and the insufficient expenditure on research and development by the Federal Government and the Länder can be seen as partly responsible for the low number of patents filed by higher education institutions.

The **northern group of states** (Bremen, Hamburg, Schleswig-Holstein and Lower Saxony) also performed better than in 2020, scoring 112.7 index points (up 15.5 points). Despite sprawl and low population density, the technical infrastructure of the north is still one of its strengths (plus 39.1 points). A good digital infrastructure and in some cases long distances to shops, doctors, educational and cultural institutions favour the above-average digital affinity of the population. Against the backdrop of spatial fragmentation of the economy and population, the acceptance of digital solutions can drive the digitalisation of the economy.

The **eastern group of states** (Thuringia, Saxony, Saxony-Anhalt, Mecklenburg-Western Pomerania, Brandenburg and Berlin) has also become more digital overall, but much more slowly than others. With a score of 97.8%, this group achieved the lowest index value. The eastern group scores above average in the innovation landscape in 2020. In Eastern Germany, framework conditions for innovation are good because companies have set up their own large R&D budgets in addition to the high R&D expenditures of public budgets. In addition, innovation activities are supported by universities and cooperatives. Moreover, many of the developments are significantly driven by Berlin.

At the level of the five region types,

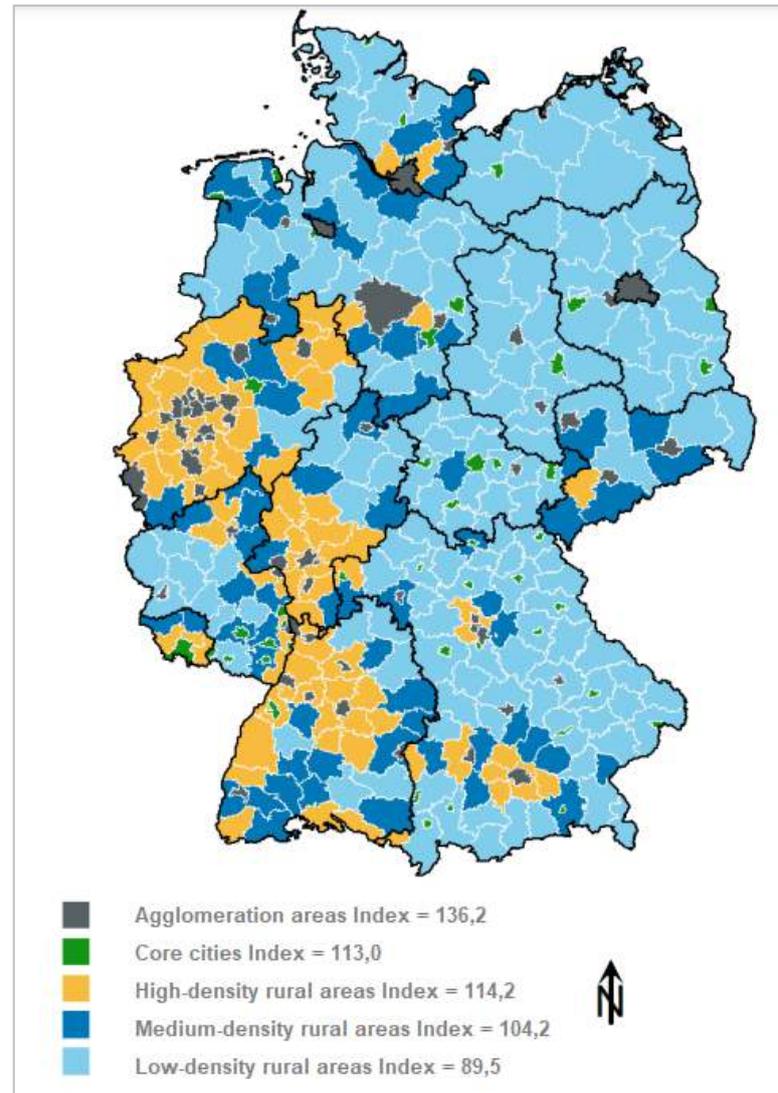
- Agglomeration areas
- Core cities
- High-density rural areas
- Medium-density rural areas
- Low-density rural areas



there are also increases in the digitalisation index, although at different levels. The absolute gap between the most and least digitised region type remains almost the same. Regional disparities have therefore neither decreased nor increased.

The strongest gains are recorded in densely populated rural areas. Their index value rises from 83.2 to 104.2, although they are still below the average of the region types in the survey year 2021 (114.2).

- High-density rural areas increase significantly. Their value has risen from 97.6 to 114.2, which is exactly in line with the average for the region types in 2021.
- As in 2020, the agglomeration areas are in the lead. With 136.2 index points, they are clearly more digital than the other region types. The increase is around 13 points.
- The core cities have only increased slightly, from 111.5 to 113.0 index points, and have ceded second place to the high-density rural areas.
- Despite a similarly high increase as the agglomeration areas (plus 13 index points), the low-density rural areas are still bringing up the rear. They have only reached 89.5 index points and thus remain below the average value of all region types in 2020.



An agglomeration is understood to be a district-free city that either has more than 500,000 inhabitants or at least 100,000 inhabitants and a population density of at least 775 inhabitants per km². Core cities include those independent cities that do not meet the criteria of an agglomeration. High-density rural areas are districts with a population density of more than 223 inhabitants per km²; medium-density rural areas have between 139 and 223 inhabitants per km² and low-density rural areas have less than 139 inhabitants per km².



Imprint

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