WIRTSCHAFTS INFORMATIK

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Campana Schott

German Social Collaboration Study 2020.

DEUTSCHE SOCIAL COLLABORATION STUDIE

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Contents.

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Publisher:

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Key findings.

Based on a survey of 1,079 employees in Germany, Austria and Switzerland, the German Social Collaboration Study 2020 has arrived at the following key findings:

1. Higher **customer satisfaction** is becoming a more important goal, and has reached 2nd place for the first time.
2. The social collaboration **level of maturity** increased further from 4.05 to 4.08.
3. Employees are almost 40% **more efficient with the higher level of maturity.**
4. The level of maturity is increasing for **firstline workers**, but still lags behind that of information workers.
5. 16% of firstline workers cannot access social collaboration tools via **digital devices** at all.
6. **Change management** is a critical factor in the success of introducing social collaboration – but is often neglected.
7. Social collaboration improves the **digital corporate culture.**
8. Social collaboration tools support working with **agile methods** like Scrum or Kanban.
9. Almost half of participants rated AI as a **key technology.**
10. **IT security** and **data protection** are major hurdles to using AI.

“Artificial intelligence algorithms are fast on their way to becoming a basic technology for the 21st century. AI applications can generate cost and time savings, while also helping workers make better decisions. The quality of AI algorithms depends primarily on the quality and quantity of the training data used. Because of this, in the future, establishing a new data culture within and between companies will become a key success factor.”

Prof. Dr. Peter Buxmann, Chair, Information Systems,
Technical University Darmstadt

“This scientific, long-term study, which has now run for five years, clearly underscores that using modern technologies pays off for companies: The study has proven a clear association between better working efficiency and the use of modern social collaboration technologies. In addition, social collaboration promotes network-like collaboration and is an important piece of the puzzle for companies on their path to a digital corporate culture.”

Boris Ovcak, Director of Social Collaboration
at Campana & Schott GmbH

Introduction.

The German Social Collaboration Study provides a clear, comprehensive and independent overview of the use of modern technologies for networked collaboration within companies. In particular, it considers organizational aspects such as digital corporate culture, work efficiency, and change management. The study has been conducted in the form of an annual survey since 2016 and targets companies in Germany, Austria and Switzerland.

The year 2020 will go down in history. Collaboration within companies has likely never changed so quickly before. What seemed unthinkable just yesterday has become part of our everyday lives in just a few weeks. IT infrastructures and modern communication tools play a key role in ensuring that many companies can continue their work. In mid-March, data traffic caused by video conferences through the world's largest internet node, DE-CIX in Frankfurt am Main, doubled in just one week, the operator states.

This is not surprising, since almost all employees who are able to do so are now working from their home offices. Classic methods of communication are either no longer available, such as face-to-face, personal discussions and meetings, or no longer sufficient, such as phone and e-mail. Web conferences, chat, or other modern social collaboration tools are being used more and more frequently. Many employees know, or have quickly learned, how practical and efficient these applications are for facilitating smooth communication no matter where participants may be located.

It is as yet still impossible to predict the long-term consequences of this rapid shift. Because of this, it is all the more important to support the change with independent studies and analyses. For five years, the German Social Collaboration Study has been investigating the use of modern tools for networked collaboration within companies. The study shows that the level of maturity is growing continuously, albeit slowly. This remains true for the 2020 edition, the data for which was collected before the current crisis. Because of this, the study can serve as a starting point for identifying the long-term effects the lockdown may have on the use of social collaboration tools within companies.

The study offers an overview of the current level of maturity among companies with regard to the social collaboration tools they use. The study distinguishes between employees with direct customer contact and those who work in production or manufacturing (firstline workers), and those employees who mainly work in office or home office environments (information workers). The data shows a major difference in the level of maturity among the two groups. This gap is shrinking, but still clearly visible.

In addition, the study offers insight into the objectives companies are pursuing when using social collaboration tools, as well as resulting cultural changes. It shows that corporate culture is improving, especially in the areas of interdisciplinary collaboration, focus on innovation, willingness to change and affinity for technology. However, social collaboration technologies are most successful when they are integrated into existing work processes in a meaningful way, and supported by different, coordinated change management measures. If this is the case, work efficiency also improves.

The study gives us insight into the near future in terms of the use of artificial intelligence and analytics tools. While just a quarter of respondents currently believe that these technologies are still in their infancy, almost one half see them as important key technologies. Such technologies, however, are still not being implemented with any regularity. Currently, just a fraction of companies use intelligent applications to any great extent. Overall, the 2020 German Social Collaboration Study serves as a valuable starting point for managers and decision-makers to consider when launching their own digital workplaces.

Study participants.

Around a third of participants are firstline workers.

As in past years, employees from a variety of companies and industries took part in the 2020 German Social Collaboration Study. Firstline workers participated in the survey for the second time (28.9%). Most of them are in direct contact with customers or work in production and manufacturing.

Of those surveyed, 34.8% were women and 65.1% were men. The age distribution was balanced. Most of the participants work at larger medium-sized companies, large companies and groups of companies (see figure 1). Information workers, the majority of whom work in offices, made up 71.1% of respondents. In general, survey respondents were distributed across different industries and work areas (see figures 2 and 3).

To ensure high-quality results, different criteria were used to select the data sets for analysis, such as participant awareness.

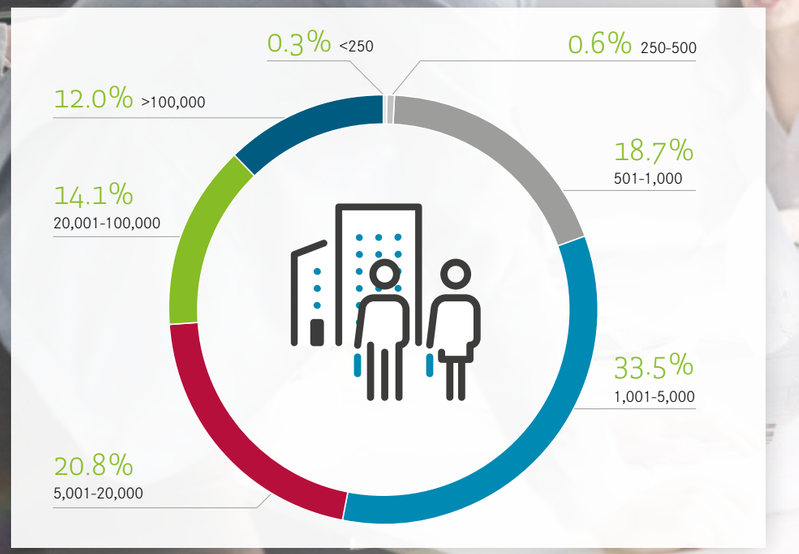


Figure 1:
Number of study participants, by company size.

Figure 2:
Number of study participants, by field of activity.

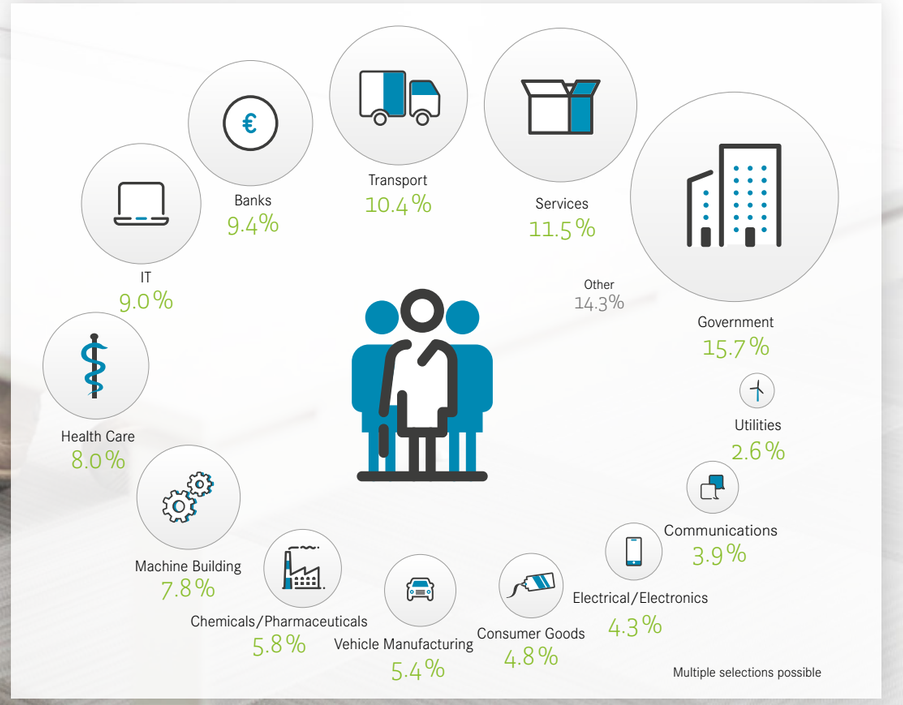


Figure 3:
Number of study participants, by sector.

The social collaboration scenarios.

8 scenarios as the basis for the social collaboration level of maturity.

Figure 4: Overview of social collaboration scenarios.

The key processes for successful daily communicationand collaboration in companies are reflected in a total of eight scenarios. These are a central component of the Social Collaboration Study.

Participants assessed how intensively they use the respective digital technologies for each scenario (see figure 4). Assessments were collected independent of information on the respondent's level of affinity with IT technologies. This analysis was then used to determine the social collaboration level of maturity. This level indicates how heavily companies are already using digital technologies for employee collaboration.

The scale used for the level of maturity ranges from 1 to 7. A higher level of maturity indicates an increased use of current social collaboration tools. A lower level of maturity indicates the use of primarily analog solutions, such as personal contacts, or established technologies like sending e-mails. A level of maturity of 1 indicates that a company uses no current digital technologies, while a level of maturity of 7 indicates the use of such technologies to the exclusion of analog ones.

This approach allows us to compare companies that use different software solutions. In addition, each participant was asked their opinion regarding relevance and working efficiency for each scenario.

German Social Collaboration Study – 5 year retrospective.

Significant advances in introducing and using social collaboration tools.

In the past five years, companies have made considerable progress when it comes to introducing and using social collaboration tools. They are planning more and more initiatives, some of which have already been launched or completed.

Just five years ago, 43.2% of the companies did not have any social collaboration initiatives. This situation has changed considerably to date. Over two thirds of respondents indicated that their companies had already implemented such projects, or that such projects were in planning or in the course of being implemented.

The correlation between the social collaboration level of maturity and employee working efficiency shows that introducing such tools does make sense for companies. Five years of scientific investigation prove that a higher level of maturity does result in better efficiency. This correlation has been consistently confirmed over the last five years. This means that employees' intensive use of social collaboration tools results in concrete benefits for companies. Over the past few years, the study has confirmed that employees working at a high level digital maturity work between 30% and 50% more efficiently.

We see a similar transformation in terms of usage of cloud technology in the digital workplace: Participants verified greater usage of cloud technologies for initiatives launched or completed this year, in comparison to 2016.

This tendency is also reflected in the social collaboration level of maturity, which has increased significantly since 2016. That year, the average level of maturity was 3.48. Today, it is 4.08 on a scale from 1 to 7. This reflects a growth of over 17%. The Social Collaboration Study therefore proves, based on collected data, that companies are becoming more and more digitized in order to facilitate efficient collaboration. This means that companies are using digital technologies more often for information and communication, and using them to replace analog solutions or established technologies such as e-mail.

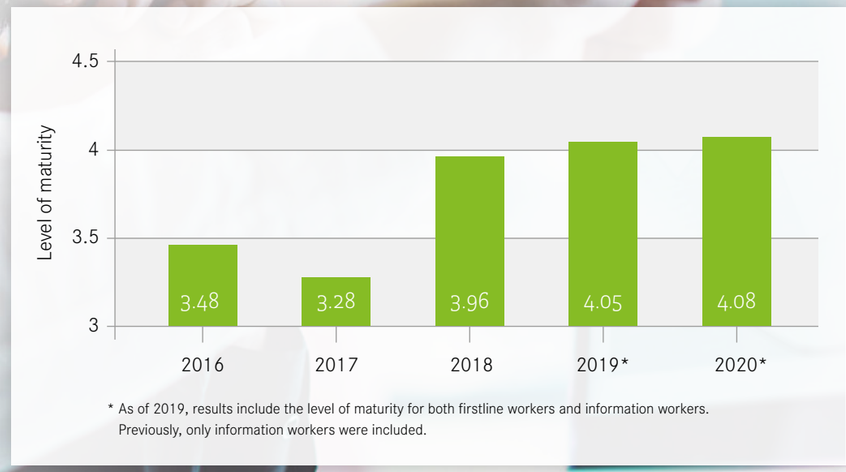
The study shows that relevant application scenarios for employees have remained constant over the last five years. These include, in particular, exchanging documents, placing requests, and team coordination. Employees are also highly efficient in such scenarios. This means that companies are providing support specifically to the application scenarios important for their employees in their work. Levels of relevance and efficiency for mobile work, in contrast, have remained consistently low over the last few years.

Firstline workers were included in the survey for the first time last year. This group of employees has a significantly lower social collaboration level of maturity, when compared with information workers. However, the gap between the two groups is shrinking - from roughly 20% to just 11% today.

Over the past few years, companies have implemented social collaboration tools primarily with the goal of improving their corporate cultures. This study has once again found that companies' digital cultures are improving thanks to the use of social collaboration tools. This means that they continue to achieve their primary goal.

Today, however, companies are also focusing on better customer satisfaction. This shows that companies are increasingly looking beyond their familiar horizons and making customers the focus of their work.

An example of one such tool, which has been analyzed in great detail since 2017, are enterprise social networks (ESNs). Here as well, this year's study once again proved a positive association between the intensity with which this tool was used (measured in minutes per day) and work efficiency.



* As of 2019, results include the level of maturity for both firstline workers and information workers. Previously, only information workers were included.

Figure 5: Development of the social collaboration level of maturity from 2016 through 2020.

Objectives, status and barriers to social collaboration initiatives.

Improving customer satisfaction is becoming more and more important.

Companies pursue different objectives when introducing social collaboration tools for their employees. Currently, they are interested in particular in improving their corporate cultures (15.8%), increasing customer satisfaction (14.8%) and reducing costs (14.3%).

In comparison to previous years, improving corporate culture remains the most important objective when introducing social collaboration tools. Customer satisfaction, however, advanced to second place for the first time. This consideration has steadily gained in importance since 2016. It was ranked 7th that year (see figure 6).

The use of social collaboration tools continues to increase in companies. Almost a fifth (18.1%) of such initiatives are already complete. At the other end of the scale, less than a third (29.0%) of companies do not have any projects for introducing such tools.

The number of projects that are either completed, initiated or in planning has increased significantly over the last five years. 43.2% of respondents say that such projects played no role at all five years ago (see figure 7).

When considering individual industries and their projects for introducing social collaboration tools, we see a heterogeneous image. There was still a large backlog of work to be done in 2020, in particular in the civil services sector. In that sector, a little less than half (43.2%) of respondents indicated that they are currently pursuing few or no such projects.

This hesitancy certainly may be due to obstacles impacting the introduction of social collaboration tools. These exist primarily in the areas of acquisition and implementation costs, costs for required infrastructure (for instance for mobile connectivity for all employees), and risks related to the unauthorized disclosure of user and business data (data protection). Based on assessments from participants, these obstacles have remained constant over the last five years.

Even if they are able to overcome these hurdles to introducing social collaboration tools, this does not automatically mean that employees will use them. Many study participants expressed concerns that usage of the tools would not become widespread. Companies should implement a change management process (see section “Change management measures as a path to success”) to ensure they can achieve good acceptance among their workforce.

The importance of cloud technologies is also increasing in the course of digitization and use of ever more advanced social collaboration tools. Currently, 17.5% of participants report that they have already completed projects to introduce cloud solutions. Just 28.0% of companies have not yet planned, started, or completed any cloud projects. Respondents also indicate there has been strong growth in launched and completed projects, in comparison to 2016.

Objectives of social collaboration

	Mentions 2020	Rank 2019	2018	2017	2016
1. Improvement of corporate culture	170	1	2	1	1
2. Higher customer satisfaction	160	4	5	5	7
3. Cost savings	154	2	2	3	3
4. Increase employee retention	130	5	4	4	2
5. Promotion of innovation	114	3	1	2	4
6. Shorter time-to-market for new products	40	6	6	6	5
7. Other	15	7	7	7	6

Figure 6: Company objectives when using social collaboration tools (retrospective of the past 5 years).

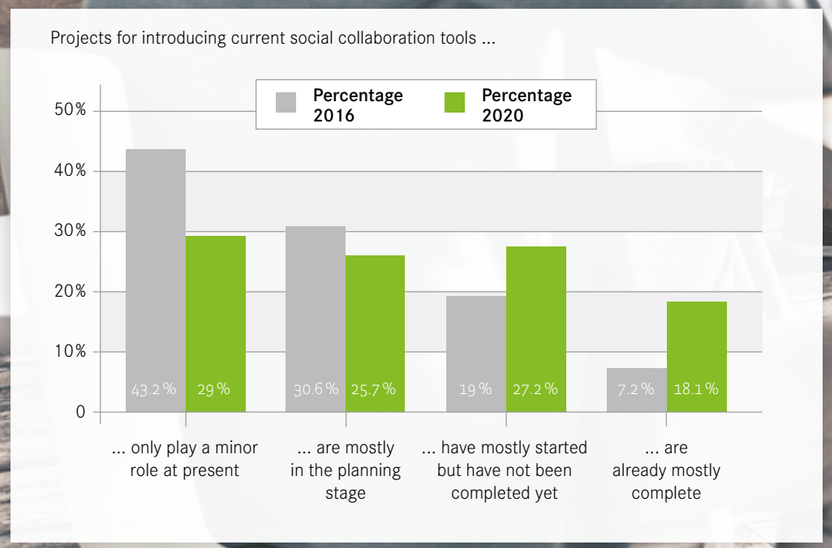


Figure 7: Status of projects for introducing social collaboration tools.

Social Collaboration Level of Maturity.

Companies' social collaboration level of maturity increased further to 4.08.

The social collaboration level of maturity indicates how widely modern technologies are used for collaboration in everyday work. Measured on a scale of 1 to 7, this level increased overall from 4.05 the previous year to 4.08 at present.

We see a more differentiated picture, however, when we consider firstline and information workers: While the level of maturity for information workers this year is 4.20, for firstline workers it is only 3.77. This clearly shows that there is still potential for using social collaboration tools in everyday work for firstline workers in particular, although this gap is shrinking.

The social collaboration level of maturity is highest overall for the scenarios of "Internal information and news," "Placing requests" and "Exchange of documents." This means that only third place changed from last year (2019: "Search for knowledge").

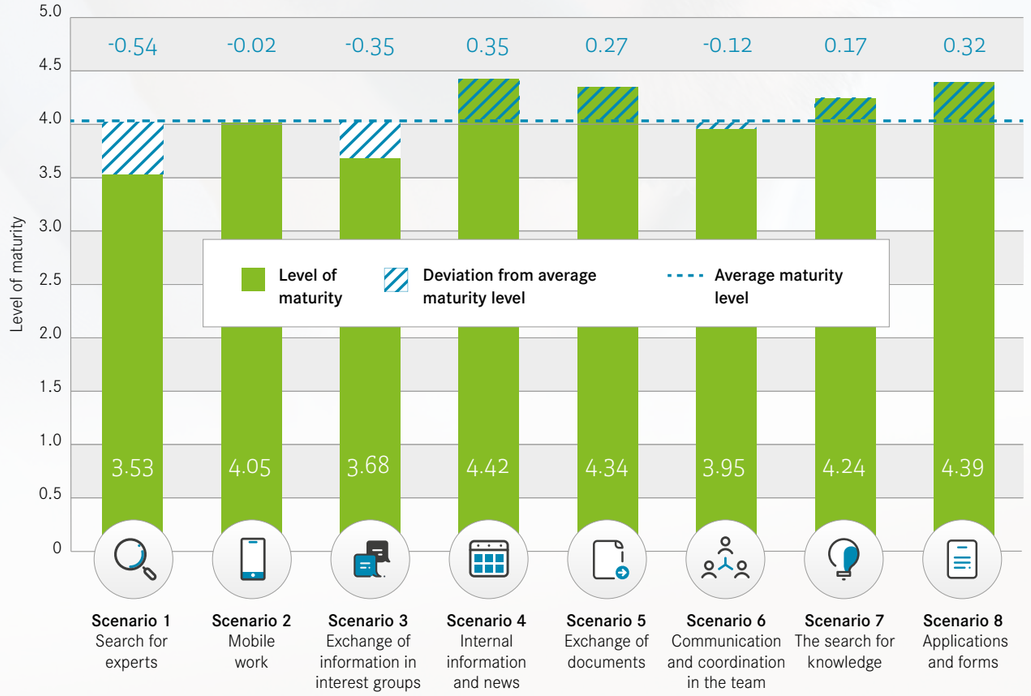


Figure 8: Social collaboration maturity in different scenarios.

This result shows that digital technologies are used primarily for structured and recurring organizational tasks. The level of maturity is lowest for the scenarios "Search for experts" and "Exchange of information in interest groups" – as it was last year (see figure 8). The applications in which social collaboration tools are used have changed significantly: Information workers are utilizing the tools more often to exchange information, while firstline workers are primarily using the tools to directly support processes.

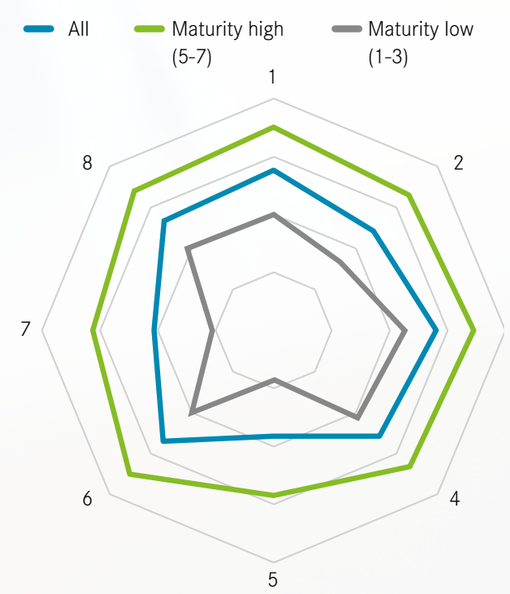
Comparing different industries shows that they have clear differences in the level of maturity. The IT field still has the highest social collaboration level of maturity (4.71), followed closely by communication (4.55) and service providers (4.38). This industry has pushed supply companies out of the top 3 this year. The laggards in this respect are the government sector (3.69) and the health sector (3.73).

The social collaboration level of maturity has increased continuously over the last few years, with one exception (2016: 3.48, 2017: 3.28, 2018: 3.96, 2019: 4.05, 2020: 4.08). Greater use of social collaboration tools offers a wide range of advantages, although their importance differs among different industries. Banks, for instance, benefit from improved communication, while mechanical engineering profits from better efficiency. This has changed over time –five years ago, handling tasks more effectively was the most important consideration for banks.

Social collaboration promotes digital fitness in companies

In addition, there is a correlation between the social collaboration level of maturity and the level of digital literacy[1]. This describes how empowered individual employees feel to act in a modern, digital work environment.

According to the German Social Collaboration Study 2020, employees from companies with a higher level of maturity are better prepared overall for the challenges posed by everyday digital work. In addition, they are more likely to feel empowered to handle digital technologies and use them for their own purposes (see figure 9). This proves how the intensive use of social collaboration tools results in increased digital competence among employees, and that this competence, in turn, contributes to the effective use of social collaboration tools.



Dimensions of digital literacy
(min = 1/very low, max = 5/very high)

1 How would you rate your basic knowledge on how to use digital technologies and media (such as computers, all-purpose software, web browsers)?

2 How would you rate your ability to use digital media in a targeted way to achieve specific goals and handle professional requirements (such as problem solving processes, critical thinking and analysis, planning and evaluation)?

3 How would you rate your ability to obtain the information you need through digital media (such as by identifying and accessing sources of information, defining search queries, selecting relevant information)?

4 How would you rate your ability to understand the social, economic and cultural impacts of the digital age?

5 How would you rate your ability to design creative content for digital media?

6 How would you rate your ability to use new digital communication channels (such as social media, messaging services)?

7 How would you rate your ability to jointly design ideas, concepts and knowledge through digital channels (and in particular using social collaboration tools)?

8 How would you rate your ability to repeatedly be introduced to new digital technologies and media, and learn how to use them?

Figure 9: Dimensions of digital literacy based on Jimoyiannis A. (2015). Correlation between social collaboration level of maturity and employee digital literacy.

[1] Based on Jimoyiannis A. (2015). Digital Literacy and Adult Learners. In M. J. Spector (ed.), The SAGE Encyclopedia of Educational Technology (pp. 213-216).

Social collaboration and work efficiency.

Employees are significantly more efficient at higher levels of maturity.

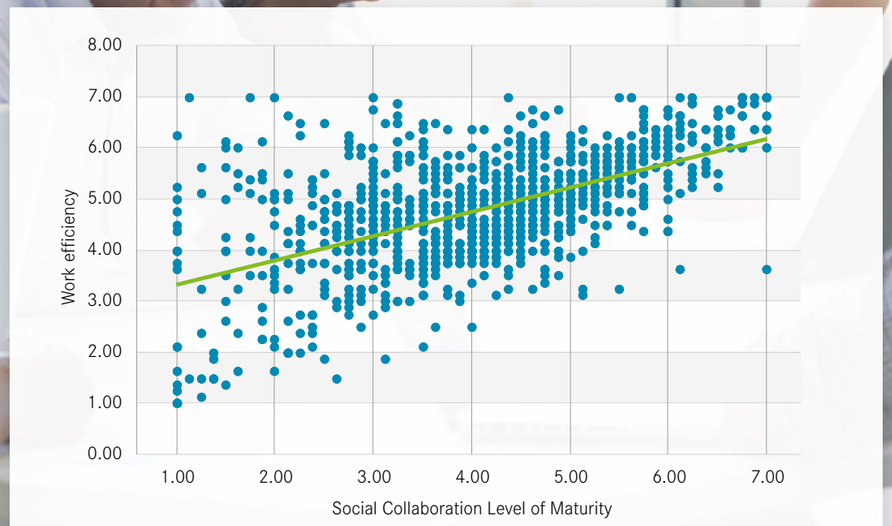


Figure 10: Correlation between work efficiency and social collaboration level of maturity.

Figure 10: Correlation between work efficiency and social collaboration level of maturity.

Average work efficiency is 4.79 on a scale of 1 to 7 across all scenarios. Over a third (36.6%) of respondents have personally become more efficient through using social collaboration tools.

As in past years, the 2020 Social Collaboration Study once again shows that participants' level of maturity and work efficiency are closely correlated (see figure 10). Currently, employees working at companies with a high level of social collaboration maturity (5-7) are 38.74% more efficient than workers in companies with a low level of maturity (1-3).

This effect is even more pronounced among firstline workers. For these workers, work efficiency is actually 41.46% better when advanced social collaboration tools are utilized. In comparison, work efficiency is 37% better for information workers. This proves the high level of relevance and major potential of these tools for firstline workers.

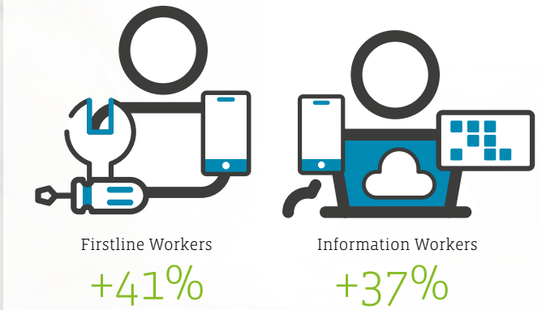


Figure 11:
Increase of efficiency among firstline and information workers.

The social collaboration level of maturity of firstline workers.

Level of maturity for firstline workers remains significantly lower than for information workers.

Firstline workers remain significantly behind information workers in the use of social collaboration tools during their daily work processes. While they have a level of maturity of 4.20, firstline workers reach a level of just 3.77.

Currently, information workers have an 11% higher social collaboration level of maturity than firstline workers. This difference has decreased significantly in comparison to last year, however; it was 20% in 2019.

Scenarios with a particularly low social collaboration level of maturity for firstline workers include “Search for experts” (3.39) and “Exchange of information in interest groups” (3.41), as well as “Team coordination” (3.59). This means that there is still good potential for using modern social collaboration tools more extensively for these scenarios (see figure 12).

Work efficiency across the different scenarios for firstline workers (4.62) is overall greater than for information workers (4.84). Looking at the individual scenarios, we see that firstline worker efficiency is particularly low for “Access to systems,” “Exchange of information in interest groups” and “Search for knowledge.”

Organizational, structured, and recurring tasks are particularly important for firstline workers. They consider “Placing requests” to be most important for their own work, with a relevance of 4.87 on a scale from 1 to 7. The scenarios “Search for knowledge” (4.57) and “Team coordination” (4.55) follow. There is a significant discrepancy for the scenario “Search for knowledge.” Firstline workers consider this scenario to be highly important, although so far it has not been implemented efficiently.

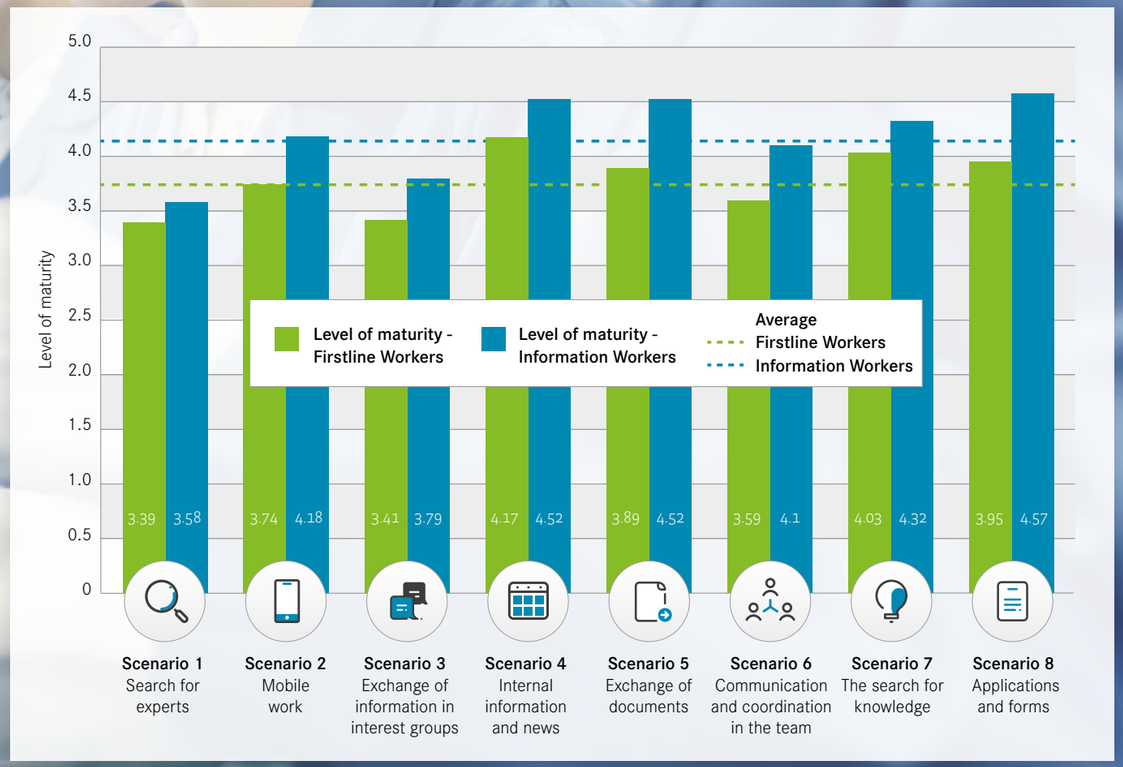


Figure 12: Comparison of level of maturity for firstline and information workers.

Digital connectivity and integration of firstline workers.

16% of firstline workers are not even able to access social collaboration tools via digital devices.

Companies primarily ensure digital connectivity and integration of firstline workers through social collaboration tools in order to achieve three goals. These are to promote the exchange of information, to facilitate better networking between employees, and to achieve higher quality in completing tasks.

However, management goals bear little resemblance to how firstline workers actually use social collaboration tools in their everyday work. They do so primarily to complete recurring everyday tasks. They mainly use the e-mail function and access forms and company news. This shows that firstline workers are not yet focused on the goal, for instance, of promoting innovation through exchanging information in interest groups.

But why aren't they able to utilize social collaboration tools to their full potential? Survey respondents indicate that they have little time to work with the tools and learn how to use them. In addition, they lack training to learn about the tools' practical benefits and potential applications. Furthermore, they note a lack of support from top management. This means companies need to carry out comprehensive change management programs to teach firstline workers about the potential of social collaboration tools, beyond just completing routine everyday tasks.

Another challenge is that many firstline workers are not digitally connected. 16% of this group of employees says that they cannot access social collaboration tools using digital devices at all. 29.5% use a shared computer when they access such tools. Only around a quarter of respondents uses a private device for this purpose. The participants were able to make multiple selections to answer this question. When they lack access to social collaboration tools, firstline workers are significantly less efficient in completing their work than colleagues who can use such tools (difference: 26.11%).

In addition, the problem is reflected in a lack of satisfaction with digital workplace equipment. Only around 40% of firstline workers are primarily or completely satisfied with such equipment. Approximately 60% believe that there is significant room for improvement. Among employees who do not have any access to social collaboration tools with digital devices, 86% are not satisfied with the available equipment.

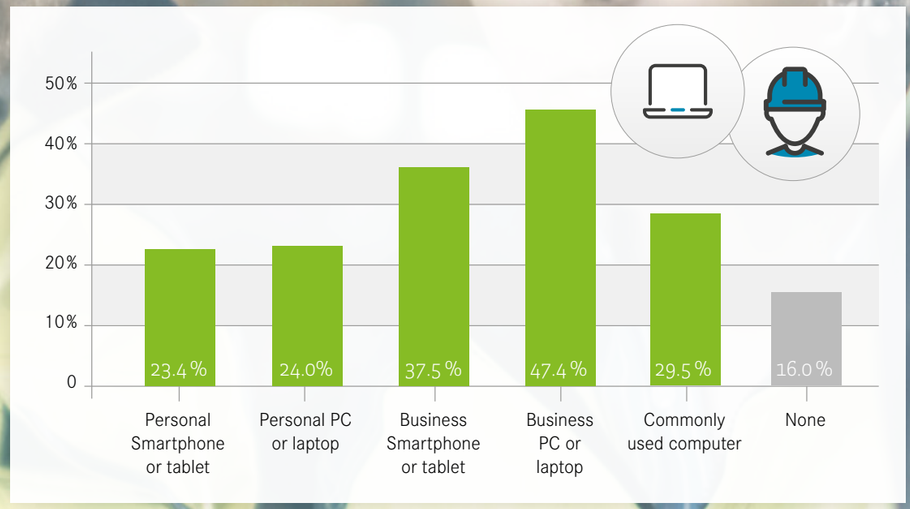


Figure 13: Ability to access social collaboration tools using digital devices.

Change management measures as a path to success.

Generally, social collaboration tools are introduced without change management.

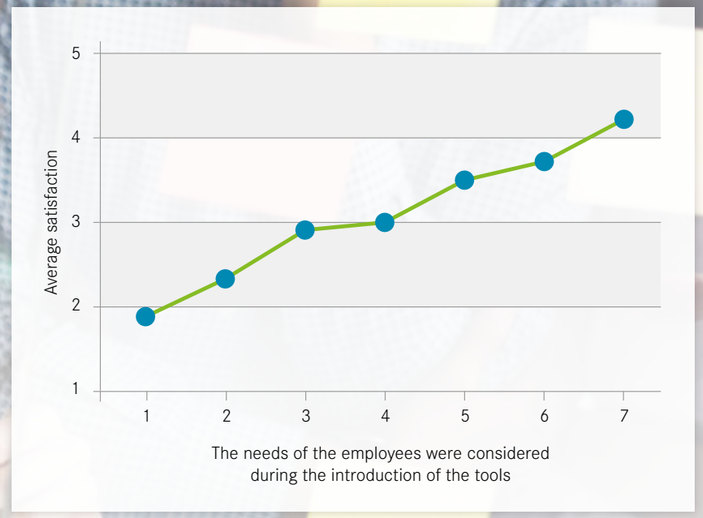


Figure 14: Correlation between taking employee needs into account and employee satisfaction with the launch of social collaboration tools.

After they are introduced, of course, social collaboration tools need to be utilized. However, around 70% of all companies implement no change management measures in order to increase acceptance among their employees.

In companies that do implement change management measures, the corporate management provided its support to launching the tools. In addition, they communicated the purpose and added value of the tools. Employee needs and the time available to them to learn how to use the tools was less of a focus.

This has an impact on employee satisfaction with how social collaboration tools are introduced. Only about a quarter of employees are satisfied with the introduction process. The rest have a neutral opinion (41.9%) or are generally dissatisfied (31.2%). The following are some statements by participants that reflect frequently noted critiques: “Instead of just making a quick call, we waste time writing messages and with eternal back-and-forth.” “In some cases, it has created unnecessary interfaces.”

On the other hand, companies with comprehensive change management measures achieve much higher levels of employee satisfaction. Communicating the added value and purpose of the measures and considering employee needs, in particular, have a major potential to improve satisfaction (see figure 14). In addition to employee satisfaction, work efficiency is much higher in companies that employ change management measures to accompany the introduction of social collaboration tools.

Therefore, companies should ensure that the identify the needs of their own employees, and take these into account when they introduce such tools. To do so, they should develop practical use cases and then introduce change management measures based on these cases. This is the only way they can demonstrate the actual benefits of these tools to employees and create the acceptance that will result in better work efficiency.

The path to a digital corporate culture.

More interdisciplinary collaboration, innovation, and willingness to change.

The introduction and use of social collaboration tools in particular improve interdisciplinary collaboration, technological affinity and the willingness to change with regard to new issues in the company. In addition, a focus on innovation also increases.

As it did last year, the 2020 German Social Collaboration Study considered eight dimensions of the digital corporate culture. These dimensions are agility, interdisciplinary collaboration, customer orientation, a focus on feedback, innovation orientation, technological affinity, a willingness to accept risk and a willingness to change.

The most respondents (36.1%) feel that social collaboration improves interdisciplinary collaboration. Innovation orientation (32.6%), willingness to change (30.6%), and technological affinity (30.1%) follow in the statistics.

In addition, relevant change management measures help facilitate the cultural shift as described in the previous chapter. Accordingly, companies that implement coordinated change management measures tend to benefit in particular from improvements in cultural dimensions through social collaboration.

The shift this brings in the digital corporate culture, in turn, has a positive impact on employees' personal motivation. Participants that learn about a major cultural shift through social collaboration tools are overall more motivated than respondents from other companies.

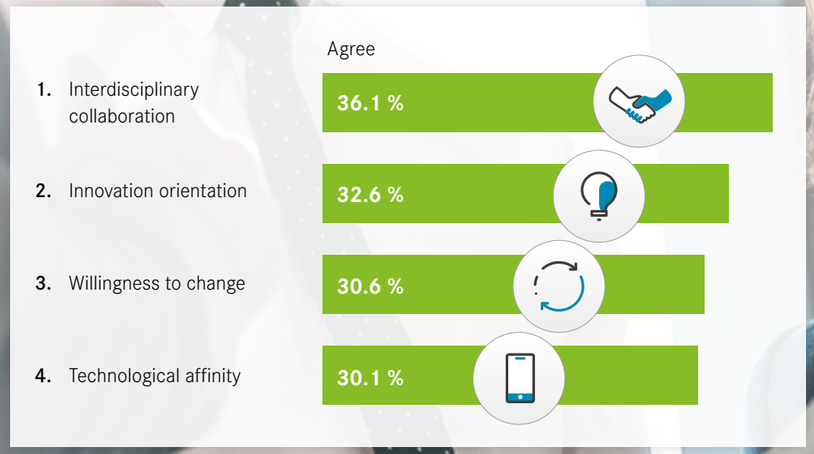


Figure 15: Improvements in corporate culture through the use of social collaboration tools.

Social collaboration and agility.

Social collaboration tools are being used more often for working with agile methods.

Around two thirds of respondents (65.86%) say that social collaboration tools support the implementation of agile methods in their companies. These include, in particular, Scrum, Kanban and Design Thinking (see figure 16).

Almost 70% of respondents believe that the use of social collaboration tools for agile methods improves efficient communication among employees. In addition, adjustments can be made to and in projects more quickly. Around 65% assume that the tools make project documentation simpler.

Companies that use agile methods can also improve their digital corporate cultures. The majority of respondents agree with this correlation by a percentage of 17.1%.

1. Scrum
2. Kanban
3. Design Thinking
4. Business Model Canvas
5. Lean Start Up
6. Design Sprint
7. Unified Process
8. Extreme Programming

Figure 16:
Agile methods for which social collaboration tools are used.

Enterprise Social Networks (ESNs).

Intensive use of ESNs improves employee working efficiency.

Employees use ESNs in particular to track which topics and projects are currently important within their companies. In addition, they use them to maintain relationships with colleagues and quickly obtain feedback on new ideas.

Almost half of all companies (46%) have an ESN. Employees only use these on average a few minutes a day. 31.9% of respondents use ESNs less than 5 minutes per day. 28% access them for 5 to 15 minutes. Only a few spend more than an hour daily on an ESN (7.2%). These values have remained roughly consistent over the past several years. However, this study has shown that employees who use ESNs more intensively are more efficient in carrying out their duties. This correlation has been shown since 2017.

This year, the study analyzed the challenges associated with implementing ESNs for the first time. In particular, companies have concerns regarding the risk of unauthorized disclosure of user and business data. In addition, a lack of employee acceptance for such tools – for instance due to their age, language barriers, culture, or a lack of content – is another obstacle. Many companies fear how high acquisition and implementation costs may be for an ESN. In reality, however, ESNs are often frequently introduced alongside other social collaboration tools, and generate only very low additional costs.

Analyses and AI – current status.

48.4% of respondents consider artificial intelligence a key technology.

Despite the great potential of this technology, only around a quarter of companies use business intelligence or analytics tools to analyze relevant business data. Almost three quarters (72.6%) use no such solutions.

Technologies that can process comprehensive, complex, fast-moving and unstructured data sets are going to become more and more important as digitization advances. These include, for instance, analytics applications and artificial intelligence (AI) technologies (such as machine learning). Companies use these in a variety of applications. They may analyze customer data, for instance, to place new products more efficiently. Employees can use machine learning to handle recurrent, routine tasks.

Such approaches are becoming more finely developed all the time. Only 27% of respondents say that artificial intelligence is a pioneering technology (1) in its early stages. The majority (48.4%) classify AI as a key technology (2) that is currently growing. 19.6% consider it to be tested and recognized, and therefore a standard technology (3). However, only 5% believe that AI is so advanced today that it is already t the end of its life cycle (4) (see figure 17).

In practice, however, the use of AI lags behind these assessments. 62.7% of companies still do not use AI-based functions to understand the spoken word (such as language assistants). Functions for written language (such as chatbots) or applications that recognize images and image content (such as face recognition) are treated similarly. Around 57% of respondents, in any case, are not yet using any such applications. Only a very few companies use such AI-based functions frequently (spoken language: 3.1%, written language: 3.8%, image recognition: 4.3%).

These values are almost the same as figures from the previous year, and show that the use of AI functions is still in its infancy. However, there are major differences between industries. While IT and vehicle construction are leaders in the use of AI-based functions, public services and healthcare still have some ground to make up, despite having an enormous amount of potential. In addition, the use of AI functions within individual industries may vary by specific area. Currently, marketing is a pioneer in the use of intelligent functions, followed closely by IT and then research & development.

In addition, respondents were asked how they would assess the status of development for different AI applications. Are these applications still in an early stage (1), growing (2), tested and recognized (3) or already obsolete (4)?

Intelligent search engines like Google, in particular, are already proven and recognized (45%), according to respondents. 39.9% of respondents rated personal assistants like Alexa, Siri and Cortana as commonplace. Facial recognition was rated similarly, with 39.8% of respondents calling it tested.

Chatbot technologies, in particular, are currently growing (44%). Respondents also feel that computer vision applications – for instance to recognize component shape, location or dimensions – are becoming more relevant (42.2%). Another trend is machine translation, which 39.2% consider increasingly relevant. Autonomous vehicles (45.1%) and humanoid robots made to mimic humans (43.8%) are still considered to be in an early stage.

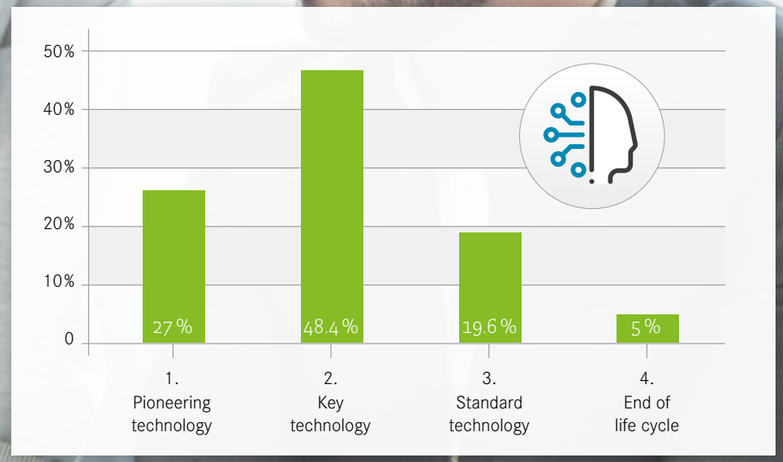


Figure 17: Status of artificial intelligence in the technology life cycle.

Challenges faced by artificial intelligence.

Major challenges in IT security as an obstacle to AI.

While data protection was considered the biggest obstacle to AI last year, this year's respondents selected IT security (which was included for the first time). Both areas represent major challenges to the use of artificial intelligence.

In addition to IT security (48.0%), data protection (45.7%) and high technological complexity (38.9%) both represent major challenges to companies' use of AI. In contrast, concerns regarding a lack of financial and personnel resources and poor data quality are becoming less important (see figure 18).

Once artificial intelligence applications become more successful on a broader level int he near future, companies and employees will face other challenges. AI may significantly change or even threaten existing business models – as other technologies have done in the past. In this context, around a quarter (23.8%) of all managers surveyed said they believe their companies' business models are at risk. This high percentage shows that companies must continue to adapt. This adaptation must involve employees, who must be integrated as they chart a new course.

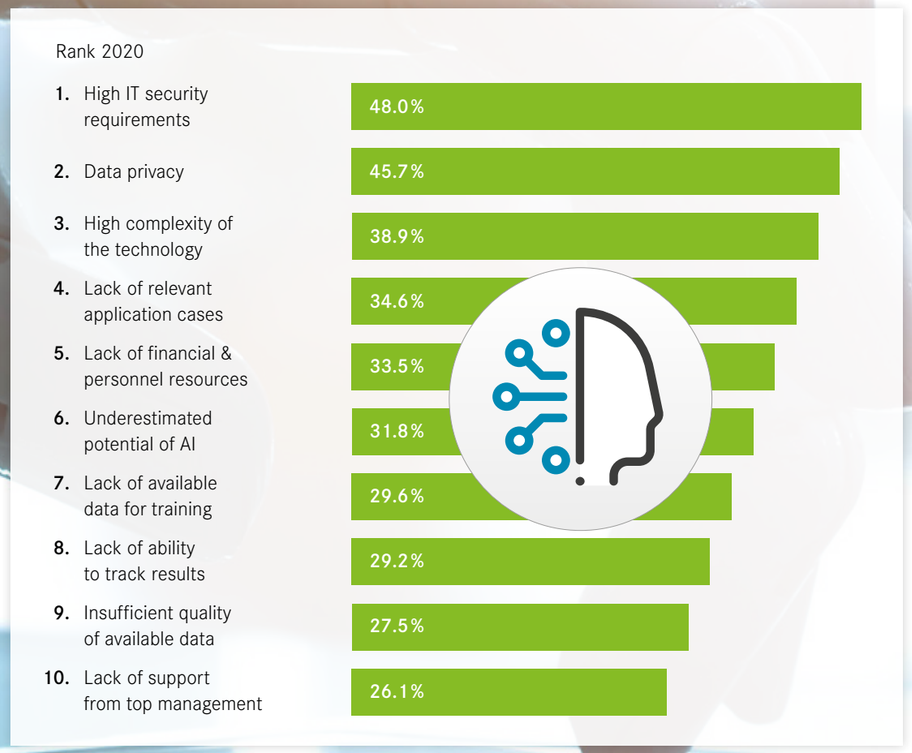


Figure 18: Ranking of obstacles to the introduction of artificial intelligence.

Summary and outlook.

The 5th German Social Collaboration Study outlines promising approaches for using modern tools to promote a digital corporate culture. Such tools provide a high level of added value to companies and employees in many different fields.

According to the study, the appropriate use of social collaboration tools significantly improves work efficiency. In addition, it improves digital corporate cultures, thereby improving employee motivation. To benefit from these advantages, however, employees must take different factors into account and must introduce coordinated change management measures to accompany tools launched.

Firstline workers still lag significantly behind information workers in their use of social collaboration tools. However, firstline workers can particularly benefit from such tools, since they improve their work efficiency even more than they do for information workers.

More and more companies are recognizing this, and the gap between the two employee groups in terms of their social collaboration level of maturity is shrinking. However, personnel who come into contact with customers or work in production have different duties, and generally need different solutions, than office employees. Because of this, tools must be adapted to specific employee needs.

Study participants also believe that artificial intelligence has a high potential for company use. Chatbots and computer vision and machine translation applications, in particular, are becoming more important. In the near future, companies believe the focus will be primarily on intelligent software solutions rather than on complex hardware systems such as autonomous vehicles or humanoid robots. This means they prefer practical solutions that promise high benefits at a low cost.

Overall, companies have made considerable progress over the past five years when it comes to introducing and using social collaboration tools. They are planning more and more initiatives, and starting and concluding such initiatives more frequently. Data from the Social Collaboration Study shows that companies are becoming more and more digitized to collaborate efficiently and thereby both improve their corporate cultures and increase customer satisfaction.

DEUTSCHE SOCIAL COLLABORATION STUDIE

Publisher:

WIRTSCHAFTS INFORMATIK

Supported by:

Campana Schott

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