

On the Current State of Digital Transformation in the German Market for Business Consulting



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Abstract Among many other industries, the digital transformation has also reached the consulting and IT services sector for some time. Not only client-side projects for the redesign of digital business models are carried out, but also consultancies face the challenge of rethinking their own business and delivery models in order to remain competitive. To determine the current status and future developments of the digital transformation in business consulting, an empirical study was conducted in the German market in summer 2017. A total of 233 usable answers were evaluated. This article summarizes the main results. Although there is an advance on an earlier study from end of 2015, low-virtualized consulting technologies are still predominantly used in a primarily supportive function. Highly virtualized consulting tools and tasks, such as complex analytical applications, cognitive systems and self-service consulting apps, despite their disruptive potential, remain marginal phenomena up to now.

1 Competition in the Consulting Industry Is Changing

Even though the total turnover in the consulting industry is increasing from year to year, the competitive conditions for consulting companies are also changing rapidly (Nissen 2018). On the one hand, this is due to the latest developments in the field of innovative technologies, which are used by successful new digital entrants. On the other hand, however, substantial changes and changing requirements on the customer side can also be observed. In view of new challenges and changed framework

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conditions, consultants should always critically review their service portfolio and rethink the traditional, complex face-to-face consulting model.

The digital transformation can be described as a process of change that arises through the use of digital technologies and their effects. It has a holistic effect on the economy and society as well as everyday life (Mertens et al. 2017; Cole 2017; Matt et al. 2015). With the rapid development and spread of new technologies in almost all areas of the global economy, companies are faced with the challenge of rethinking their own business model due to changed market situations (Peitz and Waldfogel 2012; Downes and Nunes 2013).

Meanwhile, the same disruptive forces that have already changed the business models of other industries have begun to seriously influence the consulting and IT services sector (Parakala 2015). Like their clients, consulting firms face a digital transformation process that leads to partially or completely virtualized processes, adapted organizational structures and digital business models. A sustainable competitive advantage can arise when consulting firms use new technologies to innovate their consulting processes. Technology-based tools and digital products can differentiate a consulting provider from its competitors by optimizing and sustainably expanding its service portfolio. Digital consulting services can offer new starting points to reduce one's own costs and to regain leeway in the economic margin.

By rethinking the delivery model of consulting, interaction with clients can be redesigned and new customer segments can be opened up. A promising approach to achieving these goals is virtualization. Consulting is traditionally a personnel-intensive business. Consultants are usually sent to customers to interactively solve business problems on site. In comparison, a virtual process is a process in which physical interaction disappears. The transition of a physical process to a virtual process is called process virtualization (Overby 2008). Central virtualization mechanisms are digitization and networking. Virtualization is ubiquitous today. Online banking and social media are just two examples that show that virtualization is now playing an increasingly important role in everyday life. Virtualization is a trend that also consulting firms should apply to their own business processes. In view of the market challenges, the virtualization of consulting services can be an innovative strategy to ensure sustainable business success. The goal of virtualization is to sensibly reduce personal interaction between consultants and clients through the use of information and communication technologies (ICT) (Christensen et al. 2013; Greff and Werth 2015; Nissen et al. 2015). It can therefore be described as a strategy for the digital transformation of the consulting business.

Virtual services can complement classic business consulting services in order to optimize performance and supplement the existing service portfolio and delivery options. New digital business models for consulting can be introduced in the course of virtualization, which increase the efficiency, agility and effectiveness of consulting services. In connection with a standardization of consulting services, the door to fully automatic consulting solutions is opened in some areas.

Virtualization can extend the reach to new markets that would otherwise not be suitable or geographically accessible for traditional forms of consulting (Nowak 2015). Virtualization can also be the cornerstone for new forms of collaboration and integration with clients, bringing both opportunities and risks (Nissen et al. 2018b).

However, consulting firms that do not or only superficially deal with the topic of their own digital transformation run the risk of falling behind the competition. Demographic change and the increasing war-for-talents provide further arguments to investigate the possibilities of digitization in the consulting industry.

While some of the established consulting firms have recognized the signs of the times and initiated digital transformation initiatives (McKinsey Solutions and Bearing Point Asset-based Consulting are examples), most companies in the German market for business consulting were recently still in the early stages of digitizing their own company, as the results of a study from December 2015 showed (Nissen and Seifert 2016). In most consulting firms, for example, the focus was on a low form of virtualization, in which technologies are only used to reduce travel times, increase the personal productivity of consultants, or improve the quality of existing services.

In order to determine the current progress and future developments in the digital transformation of business consultancies, a follow-up study was carried out in August/September 2017 (Nissen et al. 2018a). This study is a cooperation between the Bundesverband Deutscher Unternehmensberater e.V. (Federal Association of German Business Consultants, BDU), the Ilmenau University of Technology (Department of Information Systems Engineering for Services, Prof. V. Nissen) and the AWS Institute for Digital Products and Processes gGmbH in Saarbrücken (Head: Prof. A.W. Scheer and Dr. D. Werth). In addition to comparing the progress of development with the first study, the aim was also to explore how future billing models can be designed as a consequence of digital consulting technologies (Deelmann 2009). Further aspects of interest included to what extent the professional requirements and qualifications of business consultants are changing, the importance of critical aspects such as privacy and data security in digital consulting projects, and why management consultancies choose the digital route for the delivery model of their consulting services (Nissen 2018; Nissen et al. 2018a). Another special feature compared to the study conducted earlier was that, in addition to a survey of consultants, representatives of the client side were also surveyed this time. This article presents results and insights of the current study from the consultants' point of view.

2 Consultant Perspective

2.1 *Method and Data*

The questionnaire is based on the procedure and guidelines for formulating questions according to Bagozzi (1996). With the help of the software EFS Survey of Questback GmbH, the questionnaire was created as an anonymous online survey. In a two-stage pretest, researchers from the Faculty of Economics and Media at Ilmenau University of Technology were involved. In a second round, experts from the BDU survey group submitted their comments on the draft questionnaire. After the optimization of the questionnaire, the survey was opened for official participation on July 17th, 2017. For this purpose, 10,000 members of the BDU as a whole were

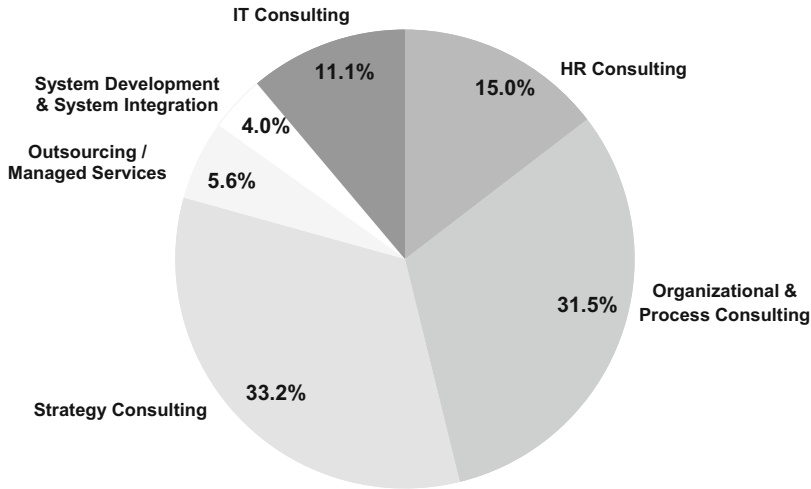


Fig. 1 Consulting field (n = 233)

invited to participate in the survey by e-mail via a link. By September 30th, 2017, a total of 336 respondents had participated (response rate 3.36%). Excluding very incomplete answers, 233 usable data sets were found, which is considered sufficient within the scope of the chosen objective. The sample is structured according to consulting field, company size, client industry, age distribution and gender as well as consulting experience.

The classification of the sample according to the four core consulting fields corresponds largely to the usual market shares according to facts and figures of the BDU (2017), whereby strategy consulting is slightly overrepresented and organizational consulting is slightly underrepresented (Fig. 1).

In terms of enterprise size, both individual consultants and representatives from micro enterprises (2–10 employees), small enterprises (11–50 employees), medium enterprises (51–250 employees) and large enterprises (>250 employees) participated (Fig. 2). Overall, it can be noted that sample is primarily characterized by micro and small companies with few employees as well as individual consultants. This reflects the situation in the German consulting market quite (BDU 2017).

Furthermore, the sample can be described by socio-demographic characteristics such as age, gender and work experience. Analysis of the age distribution by gender showed that more than half of the respondents are male and on average between 46 and 60 years old (Fig. 3, left). In addition, the age distribution of business consultants shows that the smallest proportion (2.7%) of those surveyed are in the under-30s age segment. Overall, the majority of respondents have 10–25 years of consulting experience (Fig. 3, right). This result was also to be expected, as decisions on issues of digital transformation in consulting companies are made by senior management.

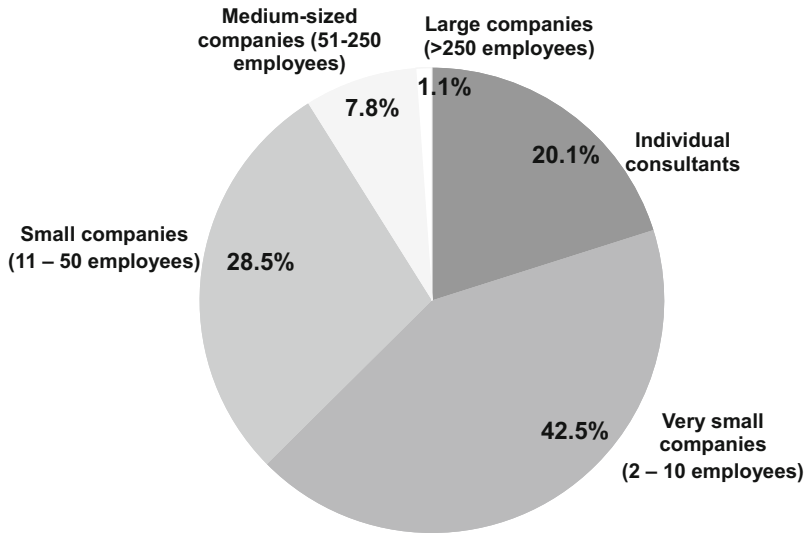


Fig. 2 Sizes of company (n = 233)

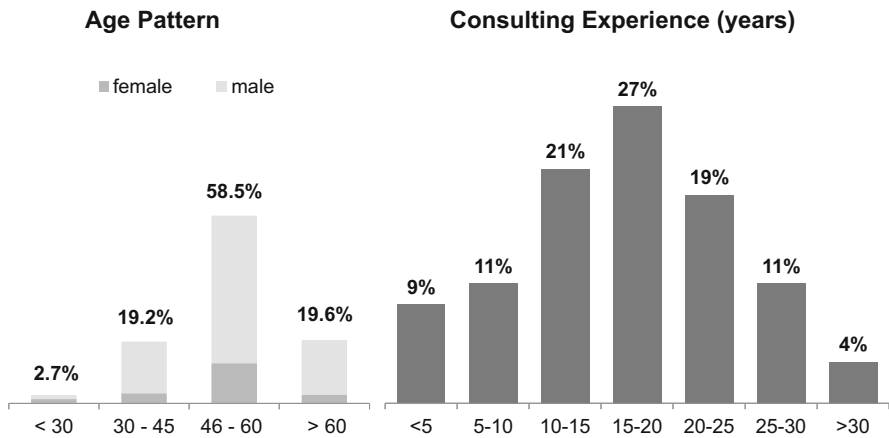


Fig. 3 Distribution of age and gender (n = 224) as well as consulting experience (n = 215)

With regard to the distribution of client industries, it can be seen that the usual market shares according to the regular facts and figures study of the BDU (2017) are also apparent here. Only in the financial services sector the value does not correspond to the market share of approx. 20.0%. This could be due to the additional summary category ‘Services (no focus)’, but the sector as a whole is still adequately represented in the sample (Fig. 4).

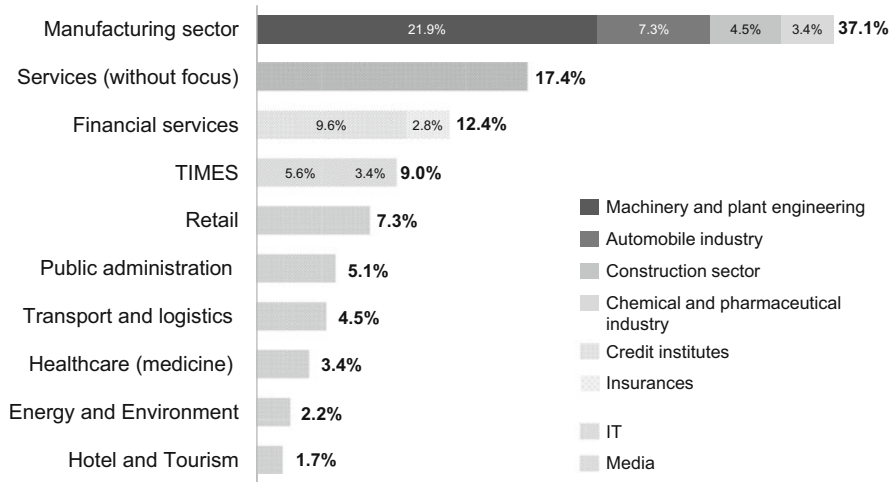


Fig. 4 Distribution of client branches of industry (n = 221)

The sample thus provides a largely representative picture of the German market for business consultancies. The current status of digital transformation in the German consulting market, future trends and developments for consultancies are presented below.

2.2 Current State of Digital Transformation in Consulting

Regarding the status of digital transformation in the consulting market, the changes in the business model, taking into account digital consulting approaches and billing models, as well as the use and client-side acceptance of digital consulting technologies should be determined.

First it had to be clarified whether the resulting sample was more characterized by face-to-face consultants or digital enthusiasts. Digital enthusiasts are consultants who are highly sensitized to new technologies and are always prepared to change their consulting behavior through digital technologies.

The evaluation of the results shows that the majority of respondents are still more likely to belong to classic face-to-face consulting (Fig. 5). The proportion of those who classify themselves as digital enthusiasts or precursors is highest in the IT consulting field at 9.5% (Fig. 6). In strategy, organizational and process consulting, the shares of digital enthusiasts are 3.6% and 1.7%, respectively. According to the sample, there are currently no digital enthusiasts in the area of HR consulting and outsourcing/managed services. This distribution can be attributed to the varying degrees of thematic relevance to digital technologies in the various fields of

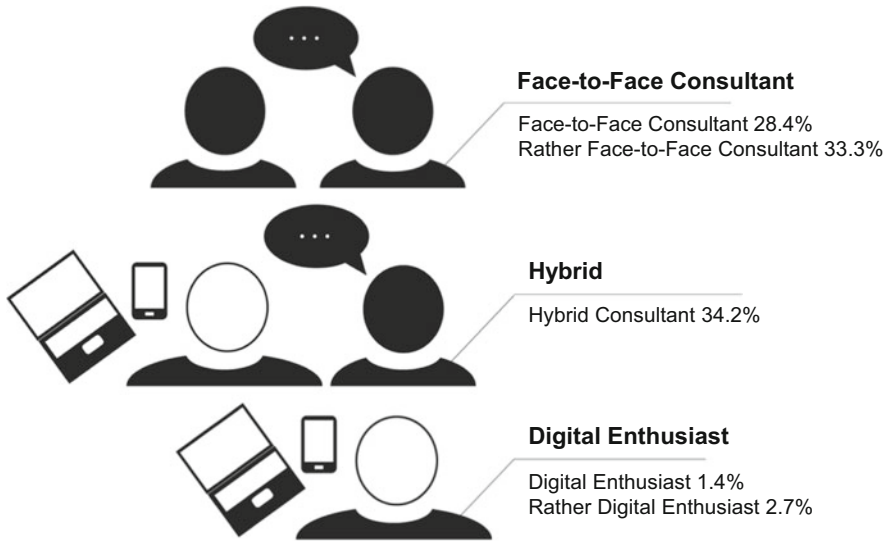


Fig. 5 Consultant personality type (n = 222)

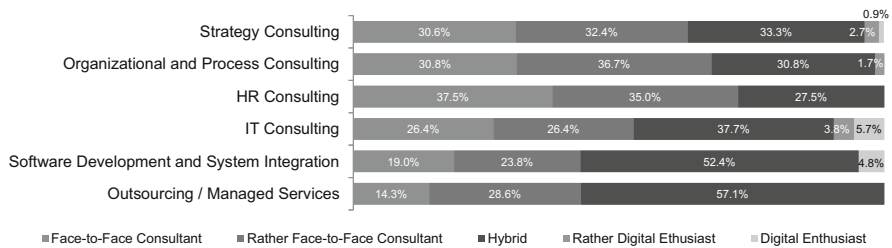


Fig. 6 Consultant personality type in the different consulting fields (n = 222)

consultancy, as well as to the age structure of the sample with a small proportion of younger consultants.

The virtualization of consulting services represents a transformation process in which in the simplest case individual consulting services and in the highest expansion stage the entire business model of business consulting is digitally transformed. Nissen and Seifert (2016) defined a corresponding maturity model of virtualization with four stages (Fig. 7). In the first study from end of 2015, the majority of the consulting providers surveyed were still at levels 1 and 2 of this maturity model (Fig. 8). In order to find out to what extent progress has been made in this area in the meantime, the maturity level was also surveyed in the current survey.

According to the current survey, 26.4% of respondents stated that the progress of virtualization in their company corresponds to level 1. 48.1% are most likely to identify with level 2 and 23.1% with level 3. 2.4% of respondents said they had reached the highest level 4 of maturity (Fig. 8). Compared to the market situation at

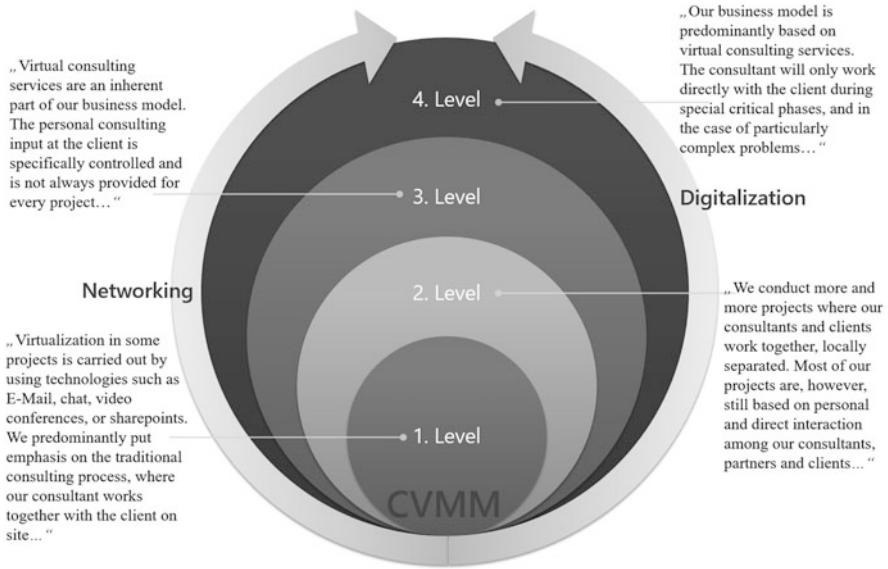


Fig. 7 Consulting virtualization maturity model (Nissen and Seifert 2016)

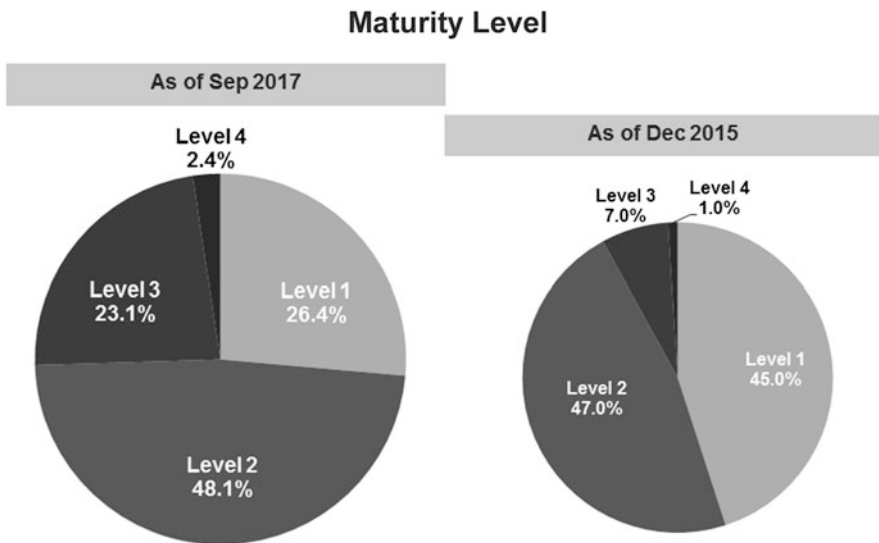


Fig. 8 Maturity levels of consultancies in Germany as of September 2017 (n = 212) and December 2015 (Nissen and Seifert 2016)

the end of 2015, the share of level 3 has thus risen significantly from 7.0% to 23.1%. At the same time, level 1 shows a decline of 18.6%. Level 2 remained largely unchanged. At level 4 there was more than a doubling, albeit at a low level.

Werth and Greff (2018) distinguish four digital consulting approaches: Under the ‘core only consulting’ approach, the information-based segments (often not in the central area of service) of consulting services are separated from the ‘physical’ segments that require personal interaction between consultant and client. This gives the supplier the opportunity to implement these parts efficiently and scalably with the help of information and communication technologies. Examples of this are communication via audio/video conferences, scheduling via Doodle or invoicing via web-based portals. The ‘platform consulting’ approach is characterized by the externalization of resources and the use of the potential of a sharing economy. This is achieved through the use of digital marketplaces to select suitable consultants (people-oriented mediation) or alternatively the mediation of consulting products (product-oriented mediation). One example is the placement of freelancers via digital marketplaces (e.g. Clarify.fm). The ‘self-service consulting’ approach provides digital consulting solutions, such as consulting apps or digital assessments for assessing the current situation and problem analysis for clients. These are used largely autonomously by customers. One example is BestPrax.de as online benchmarking for dental practices. The fourth consulting approach ‘algorithmic consulting’ automates individual consulting tasks, such as the analysis and processing of large amounts of data and structured presentation of the results in the form of ready-to-use presentation slides or process models. Data and process mining techniques are examples in this area (e.g. the solutions of Inspirient and Celonis).

The current empirical study shows that more than half of all respondents claim to already follow the core-only consulting approach (Fig. 9). This is comparatively easy to implement and automates support functions in the actual consulting

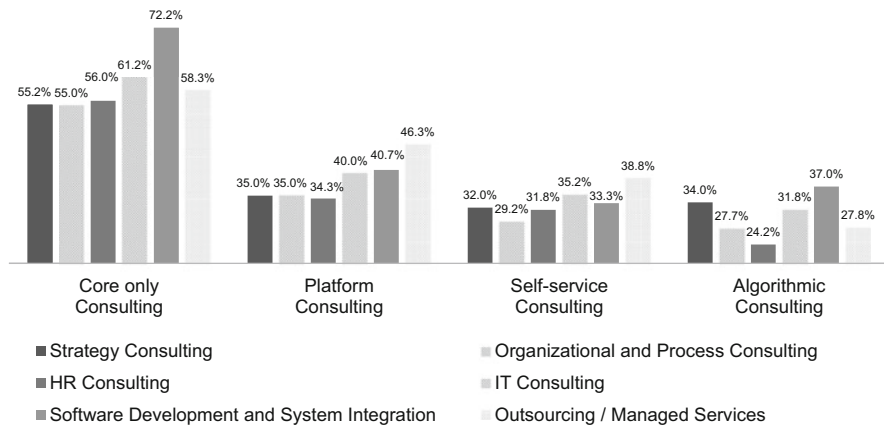


Fig. 9 Digital consulting approaches in the different consulting fields (n = 222)

environment. However, the approaches of platform consulting, consulting self-services and algorithmic consulting have so far been used less frequently in day-to-day consulting in Germany. This seems contradictory to the previously described progress of virtualization, where the majority of respondents already ranked in levels 2–3 of the maturity model. The results on the use of digital consulting approaches suggest a lower degree of virtualization in German consulting firms than previously stated. Overall, consultants from IT-related consulting fields use digital consulting approaches most frequently, which can be explained by the high affinity for technology already existing there.

The process of virtualizing consulting services requires the targeted use of digital consulting technologies. To this end, the study participants were asked why their consulting firms integrate such consulting technologies into their day-to-day consulting activities. Furthermore, it was necessary to find out which concrete consulting technologies are currently being used and how the survey participants would assess the client-side acceptance of the respective digital consulting technologies.

According to all those surveyed, the integration of digital consulting technologies into day-to-day consulting activities has a more positive impact on qualitative key figures such as company image or project success than on certain quantitative key figures (number of active consultants/project, number of orders acquired). The detailed results are shown in Fig. 10.

The majority of respondents use established distributed or cloud-based technologies, such as audio/video conferences, chats or document management systems with a low degree of virtualization. About half of the study participants also use

Why Digital Consulting Technologies?

The integration of consulting services ...

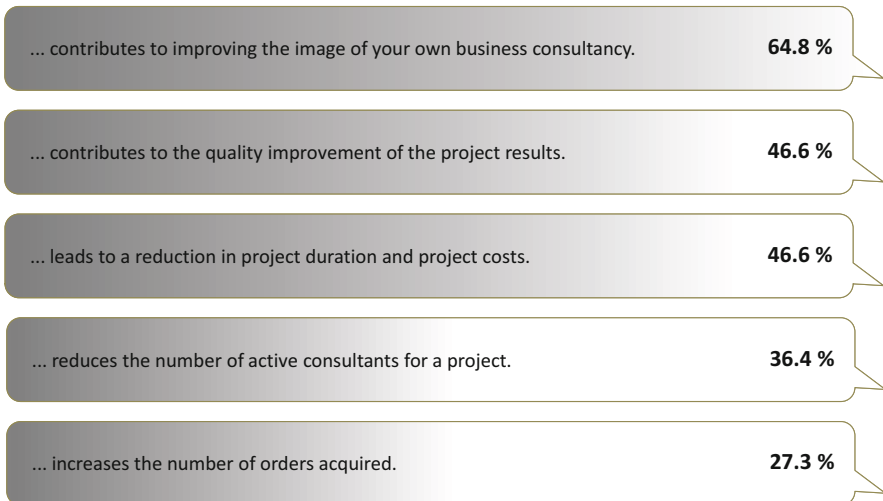


Fig. 10 Key figures on the effect of digital consulting technologies (n = 192)

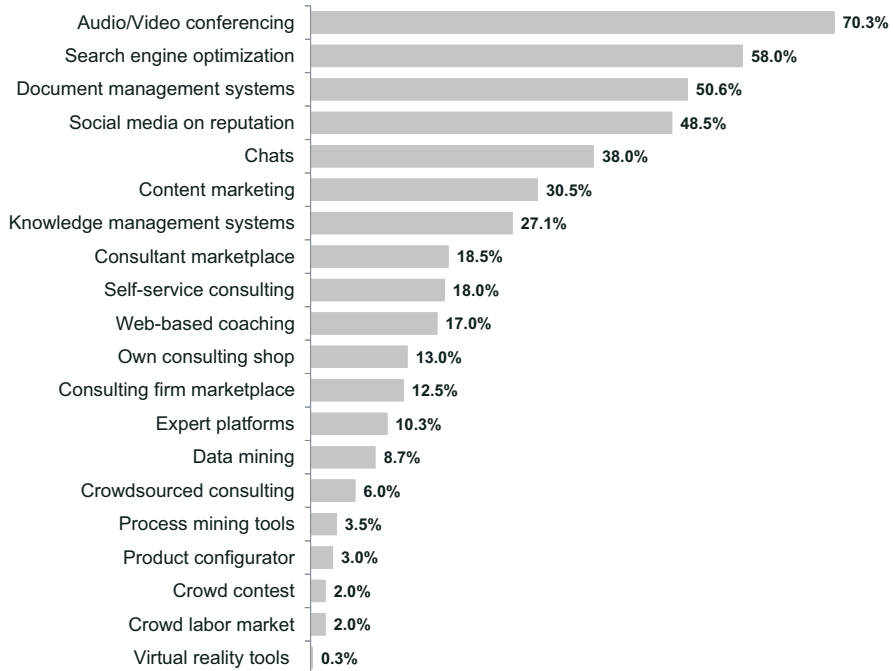


Fig. 11 Use of digital consulting technologies (n = 218)

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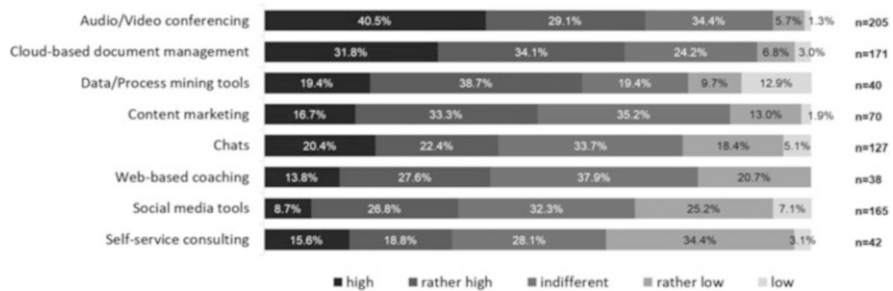


Fig. 12 How consultants assess client-acceptance of consulting technologies

search engine optimization and social media tools to increase their own reputation. Self-service consulting (18.0%), product configurators (3.0%) and expert platforms (10.3%) are currently used less in business consulting. The use of complex analytical tools (e.g. data mining and process mining applications) and crowdsourced consulting approaches with a high degree of virtualization is hardly common. The use of other consulting technologies is shown in Fig. 11.

The consultants consequently rate the client-side acceptance of well-established audio/video conference tools and cloud-based document management as high (Fig. 12). Content marketing, chats and web-based coaching are seen as medium

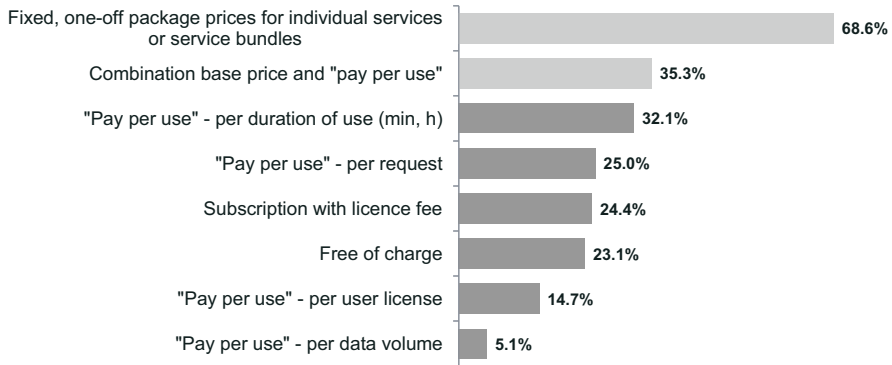


Fig. 13 Acceptance of new billing models for virtualized forms of consulting (n = 197)

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to rather highly accepted by clients. Surprisingly, the acceptance for data and process mining technologies is also rated relatively high, which, however, are still hardly used in practice today, as Fig. 11 shows. Thus, it can be assumed that such approaches will be increasingly introduced to the market in the near future.

Social media technologies and self-service consulting, on the other hand, are rated comparatively lower on the client side, which explains the relatively moderate implementation of client self-service approaches by consultants in particular. However, social media technologies are quite common in consulting practice for reputation enhancement (Fig. 11), while customer acceptance is not clearly seen positively (Fig. 12)—there is a certain contradiction here.

With the introduction of digital consulting technologies, there is also a need, especially with a high virtualization of the consulting approach, to apply other than conventional time billing models. One-off package prices have the highest overall acceptance of all consulting representatives surveyed. More than a third of the participants still accept the combination of a base price and a pay-per-use option. The pay-per-use models are valued higher per duration of use and per request than per user license and per data volume (Fig. 13).

2.3 Trends and Future Developments

Within the framework of trends and future developments in the context of the digital transformation of consulting, the topics of data security and privacy, necessary changes of consultant qualifications, the relevance of various forms of digital transformation and global market changes were the focus of the survey.

Aspects of data security and privacy when using digital consulting technologies are considered to be of above-average importance in all phases of a consulting project (Fig. 14). The respondents showed a clear approval of more than 68% across all project phases. In the project phases of problem analysis, as well as problem

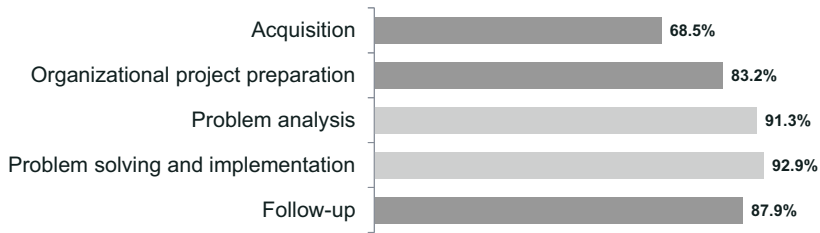


Fig. 14 Relevance of privacy and data security aspects (n = 191)

The combination of classic consulting services and the use of digital consulting technologies is...

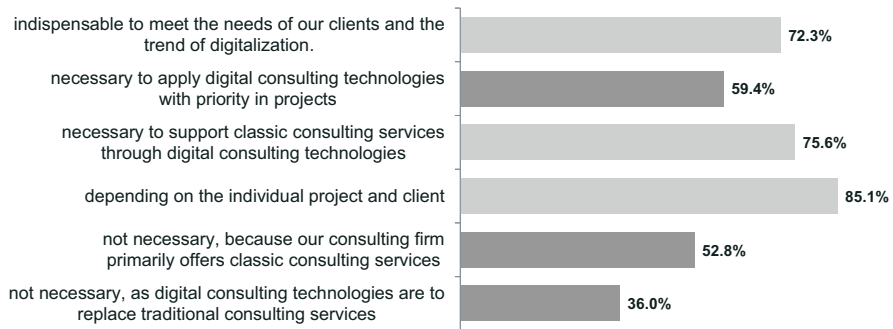


Fig. 15 What consultants think about combining classical with digital forms of consulting (n = 187)

solving and implementation, the relevance is particularly highly valued, as this is where the internal aspects of the client are most clearly in focus.

In order to determine the importance of digital consulting technologies compared to traditional face-to-face consulting in the German consulting market, study participants should evaluate selected statements according to their consent (Fig. 15). On average, the majority of respondents (approx. 85%) feel that the adjustment of the combination ‘classic—digital’ depends on the individual project and client. Digital consulting technologies should primarily support traditional consulting services (approx. 75% approval). Currently, more than half (approx. 53%) of all respondents still offer predominantly classic consulting services and see no need to integrate digital consulting technologies there. This group of sceptics is opposed by a second group of optimists. For example, 36% of those surveyed consider a combination of traditional and digital consulting services to be unnecessary because they are convinced that digital consulting technologies will completely replace traditional consulting services in the future. This view is particularly widespread in the fields of IT-related consulting, software development and system integration. In view of the still moderate use of advanced digital consulting technologies (e.g. data and process mining tools, see Fig. 11) and innovative consulting approaches (e.g. crowdbased

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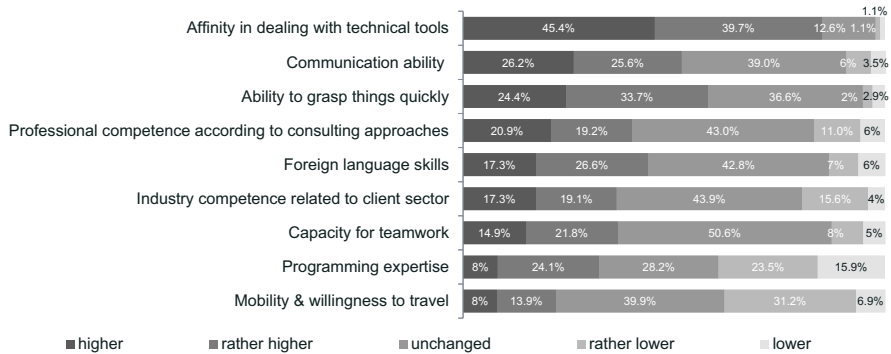


Fig. 16 How consultants expect necessary consulting qualifications to change (n = 183)

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consulting), this is a very optimistic assessment that would require a more massive use of technology in the future.

When asked to what extent the importance of typical consultant qualifications changes through the use of digital consulting technologies, affinity in the use of technical tools, communication skills and a quick grasp are considered to be more relevant (Fig. 16). On the other hand, programming skills, mobility and willingness to travel are considered less relevant. This shows that the virtualization of consulting should save travel activities. However, the focus is not on the software developer but on consultants who will need good and broad technology and tool knowledge in the future in order to be able to assess which measures of virtualization of consulting make sense and can be implemented under given project conditions. The ability to work in a team as well as professional and industry-specific consulting skills will remain important in the future.

The digital transformation of business models in the consulting market can be divided into different forms. Nissen (2018) differentiates five types of digital business model transformation for consulting firms (see Fig. 17). A distinction is made between evolutionary and disruptive transformation of business models through innovative technologies. The digital evolution describes a step-by-step transformation that affects individual components of a business model. Whereas digital disruption represents the complete replacement of a previous classical service in the consulting context by new digital approaches and technology innovations.

Overall, the respondents regard all forms of digital business model transformation as fundamentally relevant for the consulting business. According to this, a general rethinking of the consulting market is discernible. The potential of technology-based solutions is recognized and it is clear that one’s own business models should be critically reviewed. In direct comparison, however, the forms of digital evolution are considered more relevant than the forms of digital disruption (Fig. 18). This ultimately limits risks, but may also mean that opportunities are seized too late or missed.

There is still disagreement outside the consulting industry about the right approach to digital transformation. For example, Clauß (2016) recommends an

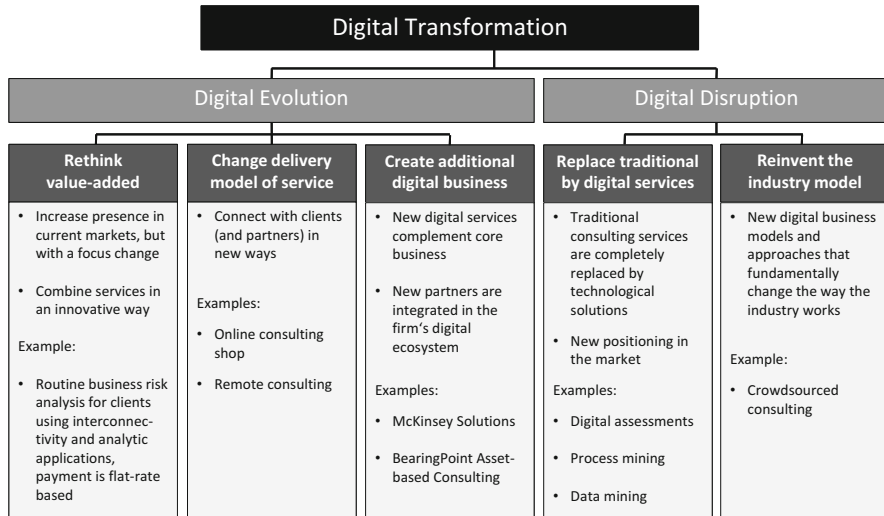


Fig. 17 Five types of digital business model transformation in consulting (Nissen 2018)

iterative process of change by ‘thinking big but starting small’, as business models are very complexly structured. On the other hand, Klimmer and Selonke (2016) report on the basis of their own empirical studies that many of their interview partners have decided to ‘turbo-entry’ into the topic. They have launched major projects that build as much as possible on the knowledge and ideas of the workforce.

In addition, current trends in the consulting market were recorded by asking participants their opinions on the use of innovative consulting approaches such as open communities and crowdsourced consulting (Fig. 19). The results of the survey show that open communities and expert platforms contribute to an improved exchange of knowledge and experience between consultants (54% approval). However, crowd consulting and consulting marketplaces also lead to increased competition in the consulting market (54% approval). Less than half (40%) of those surveyed agree that evaluation opportunities in consulting marketplaces contribute to improving the image of their own business consultancy. Furthermore, only 32% are of the opinion that the disruptive new consulting approaches are increasingly triggering cooperations and company mergers between consulting firms.

Perhaps most surprisingly, only 30% of respondents believe that technology-based consulting providers are entering the market as new competitors. While many technology-driven newcomers currently consider established consulting firms as their focus customers and offer tools to automate subtasks in classical consulting processes, this should not distract from the fact that the same tools (the data analysis tool by Inspirient as an example) could very well also be used meaningfully by large consulting clients and thus lead to direct competition with established consulting providers.

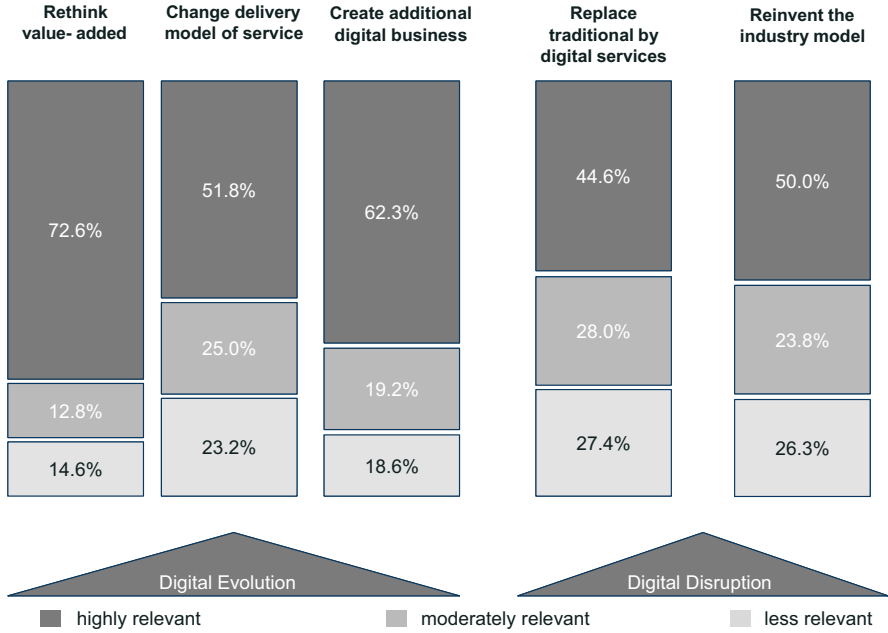


Fig. 18 Digital evolution of business model more relevant than digital disruption (n = 183)

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Market Changes and Trends

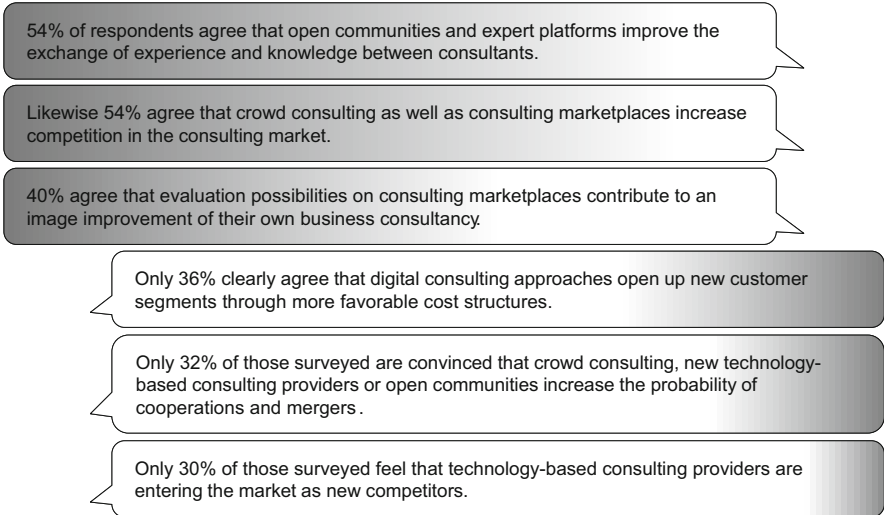


Fig. 19 Current trends in the consulting market (n = 175)

Only 36% of respondents clearly agree that digital consulting approaches open up new customer groups through more favorable cost structures. Here the potential could be misjudged, since the virtualization of consulting services often leads to a significant increase in the scalability of consulting and lowers costs. On the one hand, this allows margins to be regained, which is of particular interest for commodity consulting services. On the other hand, however, target groups that would not normally afford classical consulting also come to the fore. The digital assessment solution BestPrax.de may serve as an example here, with which dental practices can be benchmarked in the sense of strategy consulting, but at a small fraction of the costs of a personal strategy consultant.

3 Summary of Results as Quick Facts

Quick Fact 1

The majority of respondents associate themselves with traditional face-to-face consulting, with the proportion of digital enthusiasts in software development as well as IT consulting being higher.

Customers are sometimes further ahead than their consultants in terms of technology affinity. The acceptance for digital consulting services often seems to be fundamentally given on the client side. Consulting firms should make use of this and be more open to digital change, also with regard to their own processes. The ultimate goal is to develop meaningful synergies between classic face-to-face consulting and digitization technologies. In order to further integrate digitization technologies into consultants' daily work, it would be helpful if customers could specifically address their demand for such a technology application.

Quick Fact 2

Compared to the BDU study at end of 2015, there has been significant progress in the degree of maturity in the virtualization of business consulting.

However, this optimistic picture is clouded if one takes a closer look at the actual use of consulting technologies (see Quick Fact 3). The good result of the consultants' self-assignment to one of the four levels of our maturity model must therefore be regarded as tending to be too optimistic.

Quick Fact 3

The actual use of digital consulting technologies and digital consulting approaches focuses primarily on established communication, documentation and groupware applications.

Highly virtualized complex solutions, such as data and process mining or consulting apps in a form of client self-service remain the exception, as do crowdsourced consulting approaches. There is still great potential for development in this area among consulting firms, especially as clients are certainly showing acceptance in many of these areas.

Quick Fact 4

The client-side acceptance of complex data and process mining technologies is rated surprisingly high among consultants, although they are hardly used in practice.

Business consultancies should gain targeted experience with technology-based consulting approaches, some of which can be attributed to artificial intelligence, and expand their specialist knowledge in these areas. Especially the use of analytical applications and cognitive systems in the consulting process promises massive competitive advantages in the future, as the quality of consulting can be increased, the cost situation improved and project times shortened.

Quick Fact 5

According to those surveyed, the integration of digital consulting technologies has a more positive influence on qualitative key figures (image, project success) than certain quantitative key figures (number of active consultants/project, number of orders acquired).

From an overall perspective, however, it is also important to keep an eye on positive changes in quantitative project-related key figures and to address these in a targeted manner in marketing in the long term. From the clients' point of view, for example, quantifiable advantages can be perceived and marketed in the form of more favorable price structures and project results that are available more quickly.

Quick Fact 6

One-off package prices and the combination of base price and variable cost rate (pay-per-use models) are preferred as new billing models for digital consulting technologies.

Due to the digital change of the consulting offer, consulting companies face the challenge of changing their previous billing models and adapting them to digital services. Currently, package prices and a combination of base price and variable cost rate make the most sense.

When using digital consulting services, clients of consulting projects are faced with new price calculations that are not based on previous consulting rates. Pay-per-use models are expected to provide use-oriented and thus more favorable price structures for individual digital consulting services.

Quick Fact 7

The consultants surveyed consider data security and privacy to be of above-average importance in all phases of a consulting project. In the project phases of problem analysis as well as problem solving and implementation, the relevance is rated most strongly on average with over 90%.

This topic offers business consultancies a still very high need for discussion and threatens to become a central obstacle to the development and distribution of digital consulting services. Suitable measures must be designed here to protect the client's internal affairs.

Quick Fact 8

For 85% of the respondents, a combination of classic and digital consulting services depends primarily on the project and the respective client. Digital consulting technologies should mostly support traditional consulting services (>75% of respondents). 36% of the consultants even expect the complete replacement of classic consulting services by digital technologies.

In the short term, the use of digital consulting technologies in combination with classic face-to-face consulting seems to become the standard, whereby the mix is made dependent on the respective project and client. In the long term, however, the share of digital technologies in consulting projects should increase and successively replace selected traditional consulting services. This can already be seen today, for example, in the use of powerful data and process mining tools.

(continued)

Clients who have understood the potential of technology-driven consulting approaches will demand an increased use of such technologies in future consulting projects, whereby recourse to personal consulting should be possible if necessary.

Quick Fact 9

A stronger affinity in dealing with technical tools as well as communication skills and a quick comprehension are considered to be more relevant consultant qualifications in the future. On the other hand, programming skills as well as mobility and willingness to travel are considered less relevant in the future by the consultants surveyed. Other qualifications remain largely as important as with traditional forms of consultancy.

Innovative digitization technologies require fewer programming skills on the part of consultants, but a stronger affinity to the technology, which requires a quick grasp and strong communication skills in order to offer and implement digital consultancy services in a meaningful and comprehensible way in the consulting project. At the same time, the willingness to travel is less demanded in comparison to classical consulting.

Quick Fact 10

The clear majority of those surveyed agrees with the relevance of digital business model transformations in business consulting. Forms of digital evolution are considered more relevant than forms of digital disruption.

Business models have to undergo a critical review and technological potentials for digital reorientation in the consulting market have to be recognized and used. Less radical approaches to changing or supplementing existing business models are associated with lower risks and are thus suitable for gaining initial experience with the digital transformation of one's own services and processes. However, the opportunities (with increased risks at the same time) in the area of digital disruption of business models are higher.

Quick Fact 11 (Summary of Further Assessments)

Open communities and expert platforms contribute to an improved exchange of knowledge and experience in consulting. At the same time, crowd consulting and consulting marketplaces increase competition in the consulting market. Only 30% of those surveyed believe that technology-based consulting providers are entering the market as new competitors. Likewise, only a third suspect more favorable cost structures through digital consulting approaches.

Consulting firms should not lose sight of digital newcomers as direct competitors in the consulting market, as they can build up an interesting offer for clients through automated approaches and intelligent technologies. Digital consulting approaches, especially in connection with cloud technologies, scale better than traditional, personnel-intensive consulting, which leads to better cost structures and thus also enables lower prices. Even though technology-based newcomers in consulting often focus on established consulting firms as clients for their tools and services, this will not prevent them from approaching consulting clients directly in the medium term.

For clients, new consulting services and providers are entering the market, opening up new approaches for consulting. As a result, customer groups that have so far refrained from consulting services for cost reasons could also benefit from digital consulting services.

References

- Bagozzi RP (1996) Principles of marketing research. Reprint. Blackwell Business, Cambridge
- BDU (2017) Facts and Figures zum Beratermarkt 2016/2017. BDU e.V., Bonn
- Christensen CM, Wang D, van Bever D (2013) Consulting on the cusp of disruption. *Harv Bus Rev* 91(10):106–114
- Clauß T (2016) Digitale Geschäftsmodelle gestalten. *Wirtschaft Nordhessen* 3:16–17
- Cole T (2017) Digitale Transformation. Warum die deutsche Wirtschaft gerade die digitale Zukunft verschläft und was jetzt getan werden muss! 2nd edn. Verlag Franz Vahlen, München
- Deelmann T (2009) Internetberatung-Einige Überlegungen zu Möglichkeiten einer sinnhaften Vollautomation von Beratungsleistungen. In: Fischer S (ed) *Informatik 2009. Im Focus das Leben – Beiträge der 39. Jahrestagung der Gesellschaft für Informatik e.V. (GI)*, Bonn, pp 3745–3759
- Downes L, Nunes PF (2013) Big bang disruption. *Harv Bus Rev* 91(3):44–56
- Greff T, Werth D (2015) Auf dem Weg zur digitalen Unternehmensberatung. *IM+ io – Das Magazin für Innovation Organisation und Management* (1):30–34
- Klimmer M, Selonke J (2016) *Digital leadership*. Springer, Berlin
- Matt C, Hess T, Benlian A (2015) Digital transformation strategies. *BISE* 57(5):339–343
- Mertens P, Bodendorf F, König W, Schumann M, Hess T, Buxmann P (2017) *Grundzüge der Wirtschaftsinformatik*, 12th edn. Springer Gabler, Berlin
- Nissen V (2018) Digital transformation of the consulting industry – introduction and overview. In: Nissen V (ed) *Digital transformation of the consulting industry – extending the traditional delivery model*. Progress in IS. Springer, Cham, pp 1–58
- Nissen V, Seifert H (2016) *Virtualisierung in der Unternehmensberatung. Eine Studie im deutschen Beratungsmarkt*. BDU e.V., Bonn

- Nissen V, Seifert H, Blumenstein M (2015) Virtualisierung von Beratungsleistungen: Qualitätsanforderungen, Chancen und Risiken der digitalen Transformation in der Unternehmensberatung aus der Klientenperspektive. In: Deelmann T, Ockel DM (eds) *Handbuch der Unternehmensberatung*, Kz. 7311. Erich Schmidt Verlag, Berlin
- Nissen V, Füßl A, Werth D, Gugler K, Neu C (2018a) Zum aktuellen Stand der digitalen Transformation im deutschen Markt für Unternehmensberatung. BDU e.V., Bonn
- Nissen V, Seifert H, Blumenstein M (2018b) Chances, risks and quality criteria of virtual consulting. In: Nissen V (ed) *Digital transformation of the consulting industry – extending the traditional delivery model*. Progress in IS. Springer, Cham, pp 137–151
- Nowak S (2015) Karibik ohne Strand und Sonne – Wie digitale Beratung Projekte in außergewöhnlichen Regionen ermöglicht. *IM+io* 2:74–79
- Overby E (2008) Process virtualization theory and the impact of information technology. *Organ Sci* 19(2):277–291
- Parakala K (2015) Global consulting and IT service providers trends, an industry perspective. Technova
- Peitz M, Waldfoegel J (2012) *The Oxford handbook of the digital economy*. Oxford University Press, Oxford
- Werth D, Greff T (2018) Scalability in consulting: insights into the scaling capabilities of business models by digital technologies in consulting industry. In: Nissen V (ed) *Digital transformation of the consulting industry – extending the traditional delivery model*. Progress in IS. Springer, Cham, pp 117–135

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