Progress in IS

Volker Nissen *Editor*

Digital Transformation of the Consulting Industry

Extending the Traditional Delivery Model

Springer

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I dedicate this book to my children with love.

Für Leon und Hanno.

Volker Nissen

Preface

When I was a small child, the watchmaking industry was reigned by watches from European or American companies. Then, around 1970, the first electronic quartz watches became available to a broad market. During the next 15 years, the watchmaking industry changed completely. Former leading companies were often marginalized or became extinct. The mass business shifted from traditional mechanical watches to electronic watches, where producers were often located in Asia. Moreover, the price level for an average wristwatch dropped dramatically. However, in the long run, also the attitude toward watches changed. The wristwatch has increasingly mutated from a simple chronometer into an actual piece of fashion. Moreover, smartwatches appeared and revolutionized what a watch can be. Thus, new markets opened up and producers experience new chances for profitable growth.

Consulting firms can learn a lot from these developments that changed the appearance of the watchmaking industry forever. Within the next years, the business and delivery models of consulting have to be redesigned and partly reinvented. Technology-based consulting solutions will gain ground. The importance of IT and associated qualifications rise, and the war-for-talents in consulting will get even tougher than today. Consulting services will be unbundled and become more modularized with considerable consequences for sales. Moreover, the pressure on prices for standard services also puts your margins at risk. Digitalization and decreasing customer loyalty intensify competition in consulting. Clients require solutions that integrate aspects of strategy-, process-, and IT-consulting with design challenges. Concurrently, new billing models need to be introduced.

However, you can turn threats into opportunities for new business. Prepare for the new and promote the change. New models, like crowdsourcing-supported or self-service consulting, new tools for data- and process mining, and the maturing of AI all offer possibilities to complement and optimize the existing service portfolios of consulting providers. Incumbents and technology-driven newcomers in the consulting market can work fruitfully together. Automated low-cost consulting solutions can open up whole new segments of clients that would otherwise never

approach a consulting firm. In this book, you will find inspiration and help to accomplish the digital transformation in business consulting.

A book like this is the result of hard work of different parties. I would like to thank all people who contributed to this book! This not only includes the various authors, but also my doctoral students, in particular Mr. Henry Seifert, and staff at my chair at the University of Technology Ilmenau, especially Mrs. Anne Füßl, as well as the editorial office at Springer, in particular Mr. Christian Rauscher as the executive editor. It was a pleasure to work with you all!—I would also like to express my gratitude to colleagues and seniors during my more than 12 inspiring years in the consulting business. Finally, I wish to thank my wife Iska for her support and understanding during the long formation phase of this book.

It would certainly make me happy if this volume provided not only some scientific contribution in the field of Consulting Research, but also concrete practical help to consulting companies in their own digital transformation initiatives. If you have comments on the book, or need further support and advice, please contact me at volker.nissen@tu-ilmenau.de.

Enjoy the book!

Ilmenau, Germany Volker Nissen
August 2017

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Editor and Authors

About the Editor

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Henry Seifert is a graduate engineer for media technology and since 2011 working as a management consultant. His main focus is on the automotive industry and artificial intelligence, analytics, process optimization and requirements management. He works in projects in the area of sales and after sales processes as well as professional learning. As doctoral candidate at the Group for Information Systems Engineering in Services at Technische Universität Ilmenau, he examines the digital transformation in the consulting industry. The goal of his dissertation is to demonstrate the opportunities and limitations of virtualization, as well as the design of artifacts that enable the realization of virtual consulting services.

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Digital Transformation of the Consulting Industry—Introduction and Overview

Volker Nissen

Abstract Even though the total turnover in the consulting industry is increasing year after year, the competitive playing field for consultancies is changing rapidly. This is due to recent developments in potentially disruptive technologies used by successful digital newcomers, but also substantial changes and evolving requirements on the client side. In the face of new challenges and changing framework conditions, consultants should continually assess their service portfolio and critically review the traditional personnel-intensive 'face-to-face' delivery model of consulting. Like many of their clients, consulting firms are facing a digital transformation process that will lead to partially or completely virtualized processes, adapted organization structures and digital business models. Virtualization promises innovative possibilities for optimized performance and service delivery, thereby strengthening the competitive position. A serious analysis with regard to the potentials of virtualization within the different phases of consulting projects, within the consulting organization and in cooperation with customers and partners is necessary. To this end, knowledge should be accumulated at an early stage and a comprehensive vision should be developed that combines traditional and digitalized consulting approaches in a value-adding way. This introductory article reviews and structures the recent technology and market developments, provides examples of virtual consulting services, and outlines how a digital transformation initiative in consulting can be set up.

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1 Motivation and Background

1.1 All Is Well, Isn't It?

There can hardly be doubts that business consulting is flourishing, and has been so for quite a while. Figure 1 shows exemplary the rise in total turnover in the German consulting market between 2010 and 2016. And the positive development continues. For 2017, the Association of German Business Consultants (BDU e.V.) expects another increase of 8.3%, reaching a total German consulting market volume of an estimated €31.4 billion (BDU, personal communication). On an international level the turnover increased from $205 billion (including financial advisory) in 2011 to around $250 billion in 2016. Thus, the global consulting sector is one of the largest and most mature markets within the professional services industry, according to Consultancy.uk (2017).

The figures seem to suggest that all is well in the consulting sector and steady growth for most companies can be anticipated for the next years, too. However, continued success can make you lazy and inattentive for potentially disruptive competitors. Or, as Christensen et al. (2013) put it, "there may be nothing as vulnerable as entrenched success". Much of the growth we see in consulting today may be attributed to some form of co-management or 'body leasing', where clients essentially remove management layers and replace permanent staff by support services from consultancies (see also the contribution of Deelmann 2017 in this volume).

Two difficulties of modern strategic planning, already identified by Igor Ansoff in 1975, may contribute to the danger of misinterpreting the overall situation with regard to future developments. First, strategic information about impending threats and opportunities is often perceived too late to permit timely and effective response. Second, the corporate planning cycle is too long to react in time to fast-developing

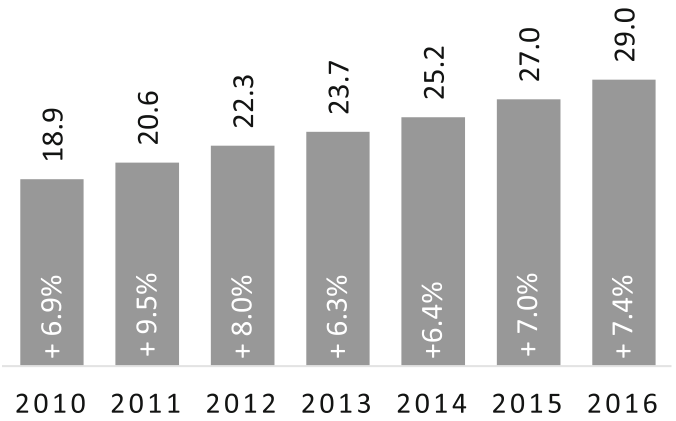

Fig. 1 Total turnover in the German consulting market 2010–2016 (BDU 2017)

events. Thus, Ansoff (1975) suggested that companies should look for 'weak signals' in strategic foresight as early indications of effective changes or trends in the company environment. Those companies may gain a competitive advantage that are able to recognize weak signals at an early stage, interpret them properly and act accordingly.

Some trends that may be interpreted as 'weak signals' in the context of a potential digital disruption of the consulting industry are:

- there is a 'digitalization of society', most people use digital ways of interaction,
- digital natives more and more get into decision maker positions,
- soaring online trade creates a well-established digital ecosystem,
- artificial intelligence has 'grown up' and become a key issue with growing relevance,
- the importance of data-based services is generally rising,
- complementary technical developments, such as data analytics/big data, mobile and cloud gain broad attention,
- ever shortening technology and product cycles render the follower strategy problematic,
- businesses engage in digital products and services that formerly were allocated solely to technology-focused companies,
- for standard consulting services the framing conditions have become increasingly competitive, the margin erodes, thus cost-effective measures are required,
- in fields closely related to business consulting, such as legal advice, wealth management, and auditing, technology-based approaches are gaining ground for some time.

With the consulting market conditions changing, as described in more detail below, and technologies like machine learning and analytics advancing, it can be expected that much of future growth in consulting goes to those who successfully create technology-based business opportunities and delivery models that better meet client requirements at lower cost. A closer look at the current trends in consulting will help to assess the situation more completely.

1.2 Markets Are Changing—Current Trends in Consulting

1.2.1 Trends in Technologies

Some of the most important current megatrends that also have an effect on consulting providers refer to complementary technological developments. Technologies like mobile devices and virtual personal assistants (VPAs) add to the channels to reach customers, while also changing the habits how people want to consume services. Moreover, these technologies enable instant responses and access to vast amounts of information that could be used on the client as well as on

the consultant side. According to Gartner (2014), by 2018, more than 50% of users will go to a tablet or smartphone first for all online activities.

Cloud computing radically changes the cost structure of technology-intensive service offers, cutting down fix costs that so far may have provided a barrier to market entry for technology-based competitors. Moreover, large business software providers like SAP with S/4 Hana Cloud intensified their efforts to provide their customers with Software-as-a-Service offerings that are largely pre-configured in the sense of standardized processes (Denecken 2017; Schmitz and Bischoff 2017). For IT-oriented consultants this means that their classical implementation business in the context of large on premise installations of business software with intensive need for individual tailoring will go down. It is increasingly replaced by smaller projects, focusing on the best possible use of such software on the client side, and associated change management. This is confirmed by a recent report from Forrester Research (2016) who assert that cloud applications and packaged deployments will require significantly less technical expertise to deploy and maintain than previous generations of systems.

Big data and analytical applications, in particular when combined with artificial intelligence/machine learning, provide capabilities that raise consultants' productivity and quality of results. The potential is immense, as according to McKinsey Global Institute (2016) most companies are capturing only a fraction of the potential value from data and analytics. Next to analytical capabilities, the focus should be on the integration of massive amounts of data of various formats and from different sources to enable discovery, gain new insights, and support innovation. Consulting companies will become increasingly 'data-driven'. On the one hand, they can integrate data and analytical competencies more closely into their services, thus improving their added value for the clients. On the other hand, the business model of consulting providers can be significantly modified if data are used to digitalize the service provision and enable automated consulting approaches that clients use autonomously.

The latter concept is further supported by current developments in natural language processing and chatbots, which provide an automated conversation interface that can be used to replace human communication partners. Gartner (2017) considers chatbots and AI/machine learning as two of the top ten technologies to support digital business. A recent survey amongst 150 service providers (USU 2017) concludes that as people feel more and more comfortable with digital communication and self-service channels, chatbots will gain a substantial share in customer interaction, providing information on standard topics automatically. McKinsey Global Institute (2016) estimates that 45% of work activities (cross industries) could potentially be automated by current technologies, with machine learning as a major enabler. Breakthroughs in natural language processing could expand that impact even further.

While data is abundant, it is the ability to integrate, analyze and use it intelligently that will make the difference. Consulting companies should strive to harness these capabilities in order to differentiate themselves from competitors and create

value for their clients. For consulting HR departments this implies a strong demand to search for talented staff with the right qualification, intensifying the war for talents with entrepreneurial thinking, broad architectural skills, change management abilities, and deep knowledge in analytics, AI and other key technologies.

It is worth mentioning that big software companies make large investments in integrating analytical applications, machine learning, block chain, Internet-of-Things and related technologies, as exemplified by SAP Leonardo (SAP 2017) to provide their customers with what is marketed as a 'digital innovation system'. Again, this could in the long run, reduce the necessity for consulting support, as the business software increasingly provides "intelligent" functionality to support the client. On the other hand, challenging technological concepts inside products like SAP S/4 Hana Cloud and SAP Leonardo require a whole new and non-trivial set of technical skills from consultants. Moreover, Forrester (2016) ascertains that the work of many technology consultants by 2020 will have shifted from technical implementation toward areas of business model and customer experience design as well as highly specialized areas in analytics, security, mobility, and artificial intelligence.

Finally, digitalization and integration are megatrends in practically all industries. In the digital age, what can be digitalized, will be digitalized—if not by us, then by our competitors! Taken together with the ever shortening technology and product life cycles, this serves as a clue to understand that waiting what the others will do, i.e. adapting the classical follower strategy, will not work in most cases. From a management perspective, it is necessary to take risks, test alternative options of digitalization, drop the ones that do not seem to work within due time, and turn the other ones into economic success and competitive advantage. This must be supported by a more frequent (re-)assessment and potential change of resource allocation in budgeting processes.

It must be stressed that digitalization is not primarily about process optimization, but about new business models and innovations at the customer interface. Digital solutions should solve customer problems better than classical approaches. Different digitization approaches with differing focus are required in the various fields of action, such as marketing and distribution (focus: channels, customer journeys), products and services (focus: digital products and add-ons), ecosystems (focus: digital networks, collaboration), and processes (focus: automation).

Networking with other employees, partners and customers, but also interconnecting products is important. Platform thinking is required—IT-platforms grant access to market demand, communities and information exchange. The implicit trust problem that comes along with using such a solution must be solved, though. It basically reads: who is hosting the platform, gets the data, i.e. is in the strongest position among market players. Essentially platform economy may be characterized by a struggle between trust and convenience.

1.2.2 Developments on the Provider Side of the Market

The consulting and IT services industries meanwhile face a truly global competition while traditional boundaries between market segments are disappearing. As a result, vendors' offerings are converging and clients find it increasingly difficult to perceive differences between service providers in each segment (Parakala 2015). This reduces the pricing power of consulting firms as they become more exchangeable. Furthermore, concerning standard services ('commodity consulting'), the market is characterized by massive pressure on margins from freelancers and providers from low-wage countries (Nissen 2013). Aggressive competition in the area of commoditized services is seriously impacting the profitability of many consulting companies (Parakala 2015).

The situation is further aggravated by the clients growing tendency to unbundle consulting engagements and buy modular pieces from different providers, aiming for best-of-breed solutions in all aspects. Consequently, consulting providers should respond by applying flexible delivery models that are adaptable to clients' rapidly evolving needs. Facets of such flexibility include pricing, proving ROI, way of collaboration with clients, co-design and co-management, methodologies, standards and tools used, as well as delivery through onsite teams, competence centers, software tools and virtual workgroups. This is certainly a challenging requirement for many consulting companies, as was already pointed out in a Source Information Services Report in 2013 (p. 8): "Of all the characteristics of the successful consulting firm of the future, flexibility is arguably the most significant because it challenges the very foundations on which many firms are built".

A particular reaction to this best-of-breed attitude of clients is the business model of consulting providers like Eden McCallum (EMC). They analyze every project and compile a team of experienced freelance consultants to tackle it. For clients, that means tailored expertise at highly competitive rates, while consultants remain free from internal demands of traditional consulting companies and can opt to work on those projects they are really interested in, which puts this approach in the neighbourhood of professional employer organizations (Klaas et al. 2005). Companies like EMC can compete at lower rates than traditional consulting providers because they do not carry the fixed costs of unstaffed time, expensive buildings, recruiting, and training. While initially only serving small customers from its London base, EMC is meanwhile internationally established and supports leading companies (Christensen et al. 2013).

This setting also helps new competitors with innovative business models and technology-driven consulting concepts to enter the market, challenging incumbent firms in the long run (Christensen et al. 2013). Many of them do not aim to be providers of overarching 'one-stop-shopping' consulting services, but rather supply innovative solutions for a particular step in the consulting process, such as automated data analysis and interpretation (e.g. Narrative Science, Inspirient), process mining and modeling (e.g. Celonis), or creating innovative solutions with the help of an international community of experts (e.g. 10EQS, Wikistrat, Kaggle). The functional spectrum of services reaches from quickly connecting a client to an

expert to provide on demand business advice (e.g. Clarity) to processing an entire consulting project in a fully digital manner. Many of these new consulting providers rely on web-based IT-platforms as a medium of communication and data exchange.

As a result, a certain modularization can be witnessed on the supply side of the consulting market. This reduces the primacy of integrated solution shops, which are designed to execute all aspects of the client engagement within the same consulting company. This shift is frequently triggered when customers feel they are paying too much for features they do not value and they want greater speed, responsiveness, and control (Christensen et al. 2013).

A result of modularization in consulting is a shrinking volume of individual engagements, which leads to rising sales and marketing efforts. New sales concepts and distribution models for 'small consulting services' are to be developed, such as consulting web-shops, consulting product configurators, pay-per-use and subscription-based payment models. The classical pay-per-diem concept does not fit many of the new consulting concepts that are currently introduced by potentially disruptive market entrants.

A group of new competitors in the consulting market provides asset-based consulting solutions. Christensen et al. (2013) describe asset-based consulting as involving "the packaging of ideas, processes, frameworks, analytics, and other intellectual property for optimal delivery through software or other technology". One could also say that this consulting approach heavily relies on software solutions, tools, models, algorithms and data-based assets. Consequently, the amount of human intervention is generally less than what traditional consulting requires. As a result, these services can be multiplied and scale much better than traditional consulting. Asset-based consulting is generally provided at a lower price than traditional people-based consulting, because of a substantial increase in efficiency, speed and productivity. Basically, more projects can be successfully conducted with the same consulting workforce, eventually improving operating margins at consultancies. Forrester (2016) expects project size to shrink, because asset-based consulting, cloud applications, and agile methodologies are creating environments that can support smaller, more iterative projects. Simultaneously, project teams tend to be more cross-disciplinary with higher seniority and specialization due to the complex demands of transformational client projects.

Asset and platform-based consulting concepts render geographic borders and distances irrelevant, thus extending the reach of providers. Expert knowledge becomes instantly and globally available. Additionally, in particular asset-based consulting contributes to consistent and repeatable project output, potentially adding to consulting quality. For clients, the ROI of consulting engagements becomes easier to grasp when consulting relies primarily on tools and software, reducing the opacity that is often criticized with regard to consulting.

Forrester Research (2016) estimates that by 2020 asset-based consulting will have substantially changed revenue and delivery models of consulting. When such tools are embedded by clients, they provide ongoing engagement outside the traditional project-based consulting model. Moreover, intelligent tools can be used to

monitor business activities and processes at clients, communicating conspicuous features or operational problems to consultants and clients alike. Thus, new opportunities for consulting business might be automatically revealed through this monitoring. The Internet-of-Things will further add to such automated surveillance options.

Some established consulting firms, such as McKinsey, have early adopted the trend to asset-based consulting and added corresponding solutions (McKinsey Analytics) to complement their service portfolio. More recently, other major providers have followed this example, including Deloitte and BearingPoint. It is reported (Bakalova 2015) that asset-based consulting, as a strategic focus area, accounted for approximately 15% of BearingPoint's 2014 revenue, and will continue to expand its share to over 20% in 2020. Interestingly, also business software vendors such as Salesforce (having acquired the enterprise analytics provider BeyondCore in 2016) follow a similar path, adding new competition to traditional consulting companies.

Next to these technology-based approaches, other innovative concepts and methodologies have been introduced in consulting and IT services that aim for an improved coverage of changing client demands, more pragmatic solutions, and greater speed in delivery. These include Lean Start-up Approaches (Ries 2011), Design Thinking (Brown 2009), Innovation Labs & Think Tanks, and Professional Employer Organizations (Klaas et al. 2005), to name just a few.

As many incumbents lack the required technological and design capabilities to provide high-quality digital transformation consulting to their clients or use digital channels for active marketing in a masterly manner (not to mention digitalizing their own service portfolio), there has been intensive consolidation with M&A activity in the consulting sector over the last years (Parakala 2015). Examples how large firms in the consulting sector augmented their digital capabilities include the acquisition of BGT, a digital creative consultancy by PwC in 2013, while Accenture bought the design firm Fjord. In 2014, McKinsey acquired Agiliti, BCG picked up Strategic & Creative, and in 2016 IBM acquired exc.io (Desai 2016). Through this, large international consulting companies position themselves as 'one-stop-shopping providers', integrating competencies from strategy, operations, design and technology. This is an attempt to offer services in all areas required to solve their clients' challenges. However, a recent survey (Cardea 2016) revealed that more than two thirds of the clients currently perceive the multi-specialists to be lacking breadth and depth of specialized expertise. Consequently, these clients rather turn to specialist consultants when looking for certain expertise.

Small and medium-sized consulting companies face particular challenges in reacting to the current market trends. They have fewer resources, making it difficult to acquire digital capabilities, create asset-based consulting products, or buildup new competencies quickly. Thus, they are in danger of falling-back in terms of competition. In this situation, cooperation and focusing are two options smaller consulting companies should build upon. Cooperation with other consulting providers can extend the individual portfolio of competencies and services while focusing on specialized service offerings aims, as a complementary strategy,

at deploying the available resources in the best possible way. By thoughtfully digitalizing their specialized services, smaller consulting companies are able to compete in their particular niche on an international level. Specialists with deep technological knowledge, industry know how, and innovation capabilities are in strong demand by clients.

With the high complexity of client projects in transformation consulting, the focus in hiring consultants is more and more on a consultant's ability to develop innovative and viable solutions at a reasonable price-performance ratio in complex market conditions (Cardea 2016). While this should make recruiting and staffing of projects more difficult, a recent survey by Cardea & Newcoventure (2016) reveals that consulting companies do see the challenge here but do currently not view these issues as primary barriers to making business.

1.2.3 Developments on the Client Side of the Market

The buyer side of the consulting market has also changed. An increasing professionality and an enhanced price consciousness of the clients regarding consulting services can be observed (Mohe 2003). In the realm of consulting purchase there is a stronger centralization, formalization and standardization of the processes. The client organizations' increasing sophistication about consulting services is often attributed to the vast number of former consultants now working inside client organizations (see e.g. Christensen et al. 2013), and adding to the professionalism and methodological knowledge of consulting customers.

Individualization is also a strong trend among clients. According to Scheer (2017), there is an increasing desire for more choice between in-house effort and external procurement, fueling the demand for highly qualified freelancers.

The megatrend digitalization further changed the buying behavior of consulting customers significantly. Following a general trend in B2C trade, clients increasingly use digital channels to search information on eligible consulting providers for their projects. Here, digital marketplaces and online communities already exceed the importance of the known search engines and portals (e.g., LinkedIn, XING) according to a survey by Cardea & Newcoventure (2016). Consequently, there is a stronger need for active (digital) marketing in consulting to increase the marketplace visibility and improve brand recognition and reputation.

When assessing the demand for consulting services in more detail, it is helpful to apply a differentiation of client projects with respect to overall complexity. Here, Maister (2003) suggested the three categories outlined in Table 1.

Brain projects are characterized by a client problem at the forefront of professional or technical knowledge and extreme complexity. It requires a high professional craft of its staff, since creativity and innovation are essential, while few procedures in these projects are routinizable. This project type requires mainly senior consulting staff and, hence, allows for only a low leverage.

Grey hair projects require a lesser degree of innovation and creativity in the actual performance than *Brain* projects would. While the output must still be highly

Table 1 Categorization of client projects with respect to complexity (based on Maister 2003)

	Brain	Grey hair	Procedure
Client problem	New or rather unique, very complex	Not unfamiliar, similar to others	Familiar and frequently solved
Required consultant skills	Creativity, innovation, pioneering of new approaches, concepts and techniques	Usable prior knowledge, judgment and transfer capabilities	Procedural knowledge, efficiency, tools
Leverage (ratio junior to senior level)	Low	Middle	High
'Hire us because…'	We are smart!	We have been through this before!	We know how to do this efficiently!

customized in meeting the client's needs, the problem to be solved is not unfamiliar, and the activities to be performed may be similar to those of other projects, though some judgment and transfer capabilities are essential. Consequently, the fraction of junior consulting staff and, thus, the leverage in these projects can be higher than in *Brain* projects.

Procedure projects address client problems that are very familiar. While there is still a need to customize to some degree, the required steps to solve the problem are somewhat programmatic. Clients often have the ability to perform the work themselves, but turn to consultants, because internal resources are needed elsewhere, or consultants can provide more efficient solutions. The use of procedure models, templates and tools allows for a high fraction of junior staff, leading to a high leverage in this class of projects.

Interestingly, the indication of leverage in the project class *Brain* could change in complex digital transformation projects of clients. While senior staff is certainly necessary to structure and steer such projects, the up-to-date technological knowledge of young professionals (digital natives) might be more useful and required in consulting today than ever before.

According to a recent industry survey (Parakala 2015), clients are becoming much more selective and modular about what they are buying, often seeking services in smaller well-defined scopes of work. Where large service providers are unable to meet expectations, clients are willing to explore partnerships with smaller, more agile and innovative consulting companies. Clients demand leveraging digital technologies to streamline operational processes and bring about fundamental changes in the business model. This requires consulting and IT service providers to increasingly co-create solutions in close cooperation with clients that face a globalized and volatile business environment.

In this situation, the clients have become more demanding and professional, and they are more closely examining whether they really need consulting services and which consulting company they want to use (Cardea 2016). Moreover, new and

potentially disruptive consulting delivery models become more acceptable with clients, when they better account for their needs and provide a clearer ROI.

It can be observed, that for commodity consulting (*procedure projects*) business consulting has been changing towards a buyers' market. Here the price, speed, and value for money are foremost, as competition amongst providers is intense and clients hire consultants mainly because they are more efficient or helpful in pushing decisions. Moreover, self-service solutions will be offered and consumed more extensively, according to Forrester (2016), where clients need an ongoing capability, and the consulting activities can be automated. According to Deelmann (2009) as well as Brynjolfsson and McAfee (2016) tasks with a routine character are at the most risk of being replaced by digitalized solutions.

On the other hand, as complex and uncertain market conditions present new challenges, consulting customers face difficult problems that call for complex analyses, and innovative solutions (*brain projects*). The versatile business context demands fast and complex transformations of clients' business models, value chains and product offerings (Cardea 2016). Digital transformation projects require globally consistent systems, organizational structures and processes, which increases the scope, risk, and impact of such projects. Clients also expect that consultants understand the clients' customers. Consultants thus need more detailed knowledge and supporting data on how customers research, buy, and use their clients' products and services (Forrester 2016), adding further complexity to consulting. Here the challenge will be to stay ahead of the clients in order to be able to add actual value.

A closer look at the future consulting market was taken in the recent study by Cardea & Newcoventure (2016) and Cardea (2017). Consulting providers as well as clients predict an increasing segmentation of the consulting market in three major segments:

- high-value strategy consulting (covered by international top consultancies),
- large-scale 'low-cost' consulting projects solving well recognized problems,
- spot-consulting/high-value specialist consulting.

While procedure and brain projects clearly persist, it appears that there might be some form of 'erosion of the middle' (*grey hair projects*) in terms of project complexity.

A recent study conducted by Cardea (2016) revealed that almost two third of the surveyed clients stated that it is difficult or very difficult for them to find the right consultants for their businesses. At the same time, the majority of clients in this study said that digital media and channels are gaining importance for seeking the right consulting service providers. As a consequence, a further increase in market share for digital matching platforms (such as consultingsearcher, Comatch, and Klaiton) can be expected that aim to provide transparency over the consulting market and intermediate between companies searching for consultants, and consultants (including independent freelancers) seeking project engagements. This in turn has substantial influence on the required marketing and sales activities of consulting providers.

In the third market segment, high-value specialist consulting, new entrants with radically different consulting approaches, such as crowd labor markets (e.g. OnFrontiers), crowd contests (e.g. kaggle) or technology-driven functional tools enter the market. The newcomers in this segment build on the clients' trend to unbundle consulting engagements, and buy consulting from different providers in a modular way to achieve best-of-breed solutions. With their innovative consulting approaches, they use delivery models that provide high-quality results for specific aspects in the consulting process at greater speed and lower costs compared to established firms, making it very attractive for clients to choose them.

1.3 Lessons from Related Branches of Industry

Today digital attackers can be found in most industries, but particularly in services. How fast and fundamentally knowledge-intensive professional services can be digitally transformed can be seen by a quick look at investment counseling, legal advice, and auditing.

Regarding money investments, a turn of the era is in progress—in future assets will be largely managed by means of sophisticated software (Weimer 2016; Anonymous 2016a). This is demonstrated by companies like Easyfolio, which offer automated fund management to their investors. The investment tool, also called Robo-Advisor, automatically invests the client's money in different funds depending on the customers' willingness to take risks.

Similar developments can be observed in legal advice. Companies with web-based offers like LegalZoom, Otris, Agreement24 and RocketLawyer directly invade the business branch of lawyers and solicitors. As an example, Swedish online provider Agreement24 provides software for the automatic design of legal documents, such as contracts and testimonials, for private and business customers. Moreover, the companies' webpage attracts users with detailed information on different legal areas. The juristic start-up Legalist aims to identify promising lawsuits by means of historical trial data. Intelligent algorithms are supposed to determine the chances of success and the estimated duration of a lawsuit (Anonymous 2016b).

Meanwhile analysis tools are also available for auditing, so that relevant business processes, in the course of the annual audit, can be automatically reconstructed and audited for financial reporting (Werner 2012). Companies like Zapliance build on the digitization of business processes and internal control systems that opens up new opportunities for audit automation and audit digitization. Similar procedures apply to internal audits in a company (Jans et al. 2011). Companies like PwC expect an almost complete change in the professional job profile of public accountants since auditing will be (almost) fully automated in the future. As a result, PwC intensified its cooperation with Google and moves in the direction of a more technology-oriented company that strives for digital business models and offers digital products to complement its service portfolio (PwC 2017).

1.4 There Is a Need for Action in the Consulting Industry

"Businesses intensively need to deal with questions of how their core business will run in the future. It is therefore necessary to develop an efficient digital strategy. Classical approaches no longer apply here. Industries need to redefine themselves to prevail against innovative competitors and challenges." This statement given by Marcel Nickels, chairman of the executive board of BearingPoint GmbH, Germany, in an interview for the Lünendonk—Handbook Consulting 2016, also applicably describes the situation of consulting service providers today.

As was outlined above, the consulting sector is constantly confronted by new challenges and changing market conditions. Consulting providers should therefore repeatedly review their service portfolio in a critical way. Even though they strengthen the competitiveness of their clients by innovative solutions and substantially take part in the development of new concepts for digitalization, consulting services are often only done by the traditional face-to-face approach.

According to Parakala (2015) the same disruptive forces that have changed the way many industries operate have now started to seriously impact the consulting and IT services sector. This is also clearly expressed in the following statement of Hans-Werner Wurzel and Kai Haake, respectively the president and manager of the Association of German Business Consultants (BDU e.V.): "When it comes to the mega trend digitalization, consultants should not only find answers to clients' questions. They should become master minds on their own account, because digital transformation will also turn the classical business models of the 'People Business' consulting upside down" (Wurzel and Haake 2016, translated).

A recent study amongst the members of the BDU reveals that 84% expect the consulting portfolio, business models and processes of consulting companies to change significantly in the course of the coming years. 79% can also imagine that new solutions are being developed in close cooperation with established software vendors in the fields of data analysis, business intelligence and cloud. And 75% (large providers 92%) see the fight for digital talents in full swing (BDU 2016).

Consulting meta-researcher Fiona Czerniawska (2017) estimates that 72% of the consulting market could be taken over by "a new breed of intelligent machines". Expressed differently, almost three quarters of the traditional consulting industry could disappear over the next ten years, particularly in the area of commodity consulting. According to her, 98% of senior US clients think that digital technology will change the way consulting is done. Data gathering and work done by junior consultants will fall victim to automation first.

The demographic change and the intensifying War-for-Talents provide further arguments to look at options of digitalization. Today's younger employee generation (often referred to as the 'Generation Y') are accustomed to digital media and tools from early childhood on ('digital natives'), so they have no fear or skepticism towards using innovative technologies (Dahlmanns 2013). They are further characterized by strong individualism (Parment 2013). These young people are aware of the shortage of qualified applicants on the consulting job market, while loyalty to