Consulting in the digital era? The role of tomorrow's management consultants

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The role of tomorrow's management consultants

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1. Introduction

The term "consultant" can indeed take on many different forms. At bedrock, it refers to a professional who provides expert advice within a specific, specialized area (Oxford Dictionaries, 2018; Tordoir, 1995). Consultants are commonly differentiated as being either "internal" or "external" consultants, depending on what function they serve or to whom they provide consulting advice. An internal consultant typically refers to someone operating within an organization. They may be consulted on their area of expertise by others within the same organization. An external consultant, on the other hand, typically refers to an externally employed expert who provides assistance or advice to an actor on a temporary basis, usually in exchange for a fee (Armbrüster, 2006; O'Mahoney and Markham, 2013).

While the two categories are similar inasmuch that they both adhere to issues concerning confidentiality, risk project, project termination, etc., there are several practical differences between them as well. For instance, internal consultants are usually contracted in a rather informal manner as opposed to external consultants, and tend to be considerably cheaper to contract. They also tend to have a better knowledge about the organization from the outset than an external consultant. However, their strong tie to the organization carries the innate risk of them becoming overly cautious and/or apprehensive in taking or suggesting an action that would risk upsetting someone with the ability of influencing the internal consultant's career in either direction. They may also lack certain skills in facilitating organizational change (Cummings and Worley, 2013; Burtonshaw-Gunn, 2010).

External consultants, on the other hand, are often able to select their clients according to their own criteria and/or profile. They are generally looked upon as being more prestigious, which in turn elevates the organizations expectations for them to achieve their goal. This, by extension, enables the consultants to probe difficult issues and assess the organization in a more objective manner, devoid of any personal attachments and without fear of reprisals from the manager (Cummings and Worley, 2013; Scott and Barnes, 2011).

Moreover, consulting firms range in size from sole proprietorships, consisting of a single consultant, and small businesses consisting of a small number of consultants, to mid- to large consulting firms. The latter of which may in some cases

be multinational corporations. This type of consultant generally engages with multiple and changing clients, which are typically companies, nonprofit organizations or governments.

While a plethora of specific types of consultants exists, this chapter will primarily focus on management consultants, as this is one of the most common, and among recently graduated university students, most popularly sought after types of consultancies (Wickham and Wilcock, 2016; White, 2011; Hope, 2016). One of the reasons for this is that management consulting is known to generate high streams of revenue, both for the individual consultant, as well as for the consultancy firm, with some recent university graduates receiving offers from top firms with a remuneration approaching or even exceeding USD90,000 in their first year (Nisen, 2013; Harvard Business School, 2018; Management Consulted, 2018).

Management consultants are typically external consultants who provide the client management with strategic and/or operational advice (data driven). The reason why companies hire management consultants is explained by Greiner and Metzger (1983, p. 7):

> Management consulting is an advisory service contracted for and provided to organizations by specially trained and qualified persons who assist, in an objective and independent manner, the client organization to identify management problems, analyze such problems, and help, when requested, in the implementation of solutions.

As the digital transformation continues to make its way through various businesses, the consultancy profession is no exception, as pointed out by Christensen, Wang and van Bever (2013). Digital transformation aims to increase efficiency, competitiveness and accessibility of consultants by transitioning much of their businesses to digital technology. However, there is currently a lack of research on how digital transformation affects the role of management consultancy in the future, as there is confusion as to how consultants should structure their digital business (Marriage, 2018). There is also a pressing issue in regards to whether or not the consultants as we know them today are likely to look the same tomorrow, given the technological advancements (Czerniawska, 1999).

Thus, the overarching research questions are:

RQ 1: *How may digitalization influence the consultant's role of tomorrow?*
RQ 2: *How may the profile of the typical consultant change in the future?*

As a theoretical/speculative study, this chapter seeks to draw upon some of the available literature and the authors' own best-practice experiences in exploring some of the most pressing issues of the digitalization of consulting of today, with an anticipation of how the role of consultants may come to develop in the near future (Kim, Sefcik and Bradway, 2017; Cooper and Endacott, 2007; Elliott and Timulak, 2005; Murphy and Dingwall, 1998).

2. The background of traditional consultancy

A recurring point throughout the years has been contention that consultants receive vast amounts of money for their services and that much of this money is spent on impractical data and poorly implemented recommendations (Turner, 1982). Thus, in order to reduce waste, there is a need for potential customers to better understand what consulting assignments can accomplish. Historically, the traditional role of a consultant has been "to advise and assist the client in carrying out the project definition and contracting process, as well as with the management and execution of design, plus administration, supervision and quality control of the . . . contracts" (Harrison and Lock, 2004, p. 85). Typically, the consultant carries out a lead role in a given project, but falls short of overall project management and/or integration inasmuch that they are generally not accountable for, or in charge of, all parts of the project (Harrison and Lock, 2004).

The years following World War II are often described as the "emergent period of management consulting" (Srinivasan, 2014, p. 259). During this period, consulting entrepreneurs would highlight the significant contrasts between the status quo and broad cultural logics and use insights from outside their professional field to suggest solutions to problems. Moreover, they would emphasize the larger societal benefits of the proposed solutions, establish the uniqueness of their profession by establishing social codes, and establish relationships with prominent actors outside their professional field in order to legitimate their problem-solving models (David, Sine and Haveman, 2013). This evolution would eventually lead to an industry consisting of various actors and firms that are conceptually similar, but yet markedly differently positioned (Srinivasan, 2014).

In later years, various corporations have begun making increased use of titles that include "consultant" (Srinivasan, 2014). These staff members are effectively "internal consultants" (as described earlier in this chapter). These consultants provide the company with specialized expertise, but as "internal" consultants they are an integral part of the organization. As such, they do not generally bring in the "outside" perspective that clients often seek (Srinivasan, 2014). Arguably, the external perspective has traditionally been of key importance as Fincham, Mohe, and Seidl (2013, p. 6) identify management consulting as including "any activity that has as its apparent justification the provision of some kind of support in identifying or dealing with management problems, provided by individuals, groups, or organizations that are external to the particular management domain and which are contracted by the management on a temporary basis". The added value that external consultants bring to their clients is that the consultants are able to provide them with unique expertise, innovation and/or swiftness not readily available to the client (Momani, 2013; Srinivasan, 2014). To this end, a vital component of management consulting has also been the ability of providing advisory services by specialists who can assist the client in an objective and independent fashion in identifying management problems, analyzing problems, proving suggested courses of actions and in some cases, even assist in the implementation of solutions (Greiner and Metzger, 1983).

In time, however, the value proposition of the consultancies have gradually shifted from providing specialists to solve clients' business problems to granting

clients the ability to tap into the consultancy's knowledge base, as many clients and consultancies have similar access to the resource pools for hiring new recruits, i.e., promising graduates from top business schools (Sarvary, 1999). This means that consulting firms in the past couple of decades have had to emphasize the power of its collective knowledge rather than the individual expertise among its staff (Srinivasan, 2014).

The term "consultant" has shifted meaning from solely pertaining to expert advice during a limited amount of time, to also including concepts such as staffing consultants, or contractors (Hyman, 2016; Berry and Oakley, 1994; Turner, 1982). Some companies have employed a strategy of hiring consultants rather than employing staff, as it enables them to quickly cut back on staffing costs whenever recession looms (Banks and Coutu, 2008; Baumann, 2009).

3. The four phases of consulting

Prior to implementing solutions, the solutions in question need to be devised and clearly articulated in the upcoming implementation plan. This is typically done along with the consultants during a phase called "solutions design" (or something to that effect) (Griffin, 2017). These are executed by either the management consultants or the organization itself.

In an oversimplified manner, consulting can be expressed as consisting of four different phases: (1) the pre-analysis phase, (2) the problem-identification phase, (3) the analysis phase and (4) the implementation phase (as depicted in Figure 15.1). These four phases each carry their own potential issues.

3.1. Pre-analysis phase

Initially, there is the pre-analysis phase that seeks to answer the "why" of what needs to be accomplished. In a strictly oversimplified and theoretical world, this phase can be omitted and a consultant would be able to dive right in to deal with the problem at hand. However, in practice this is rarely, if ever, possible, due to

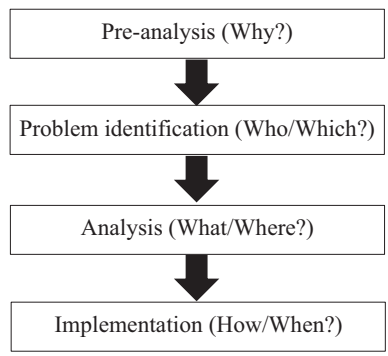

Figure 15.1 The four phases of consulting (authors' own depiction).

the fact that the management consultancy services are ever so often subject to various forms of organizational politics and demands from other hierarchical levels within the organization (Verlander, 2012; Hodges, 2017). Moreover, the local executive in charge of contracting the consultant ever so often lacks the insight in the actual (or perceived) problem at hand and often needs someone to guide them in taking the next steps (Cummings, 2010; Keuning, 2007; Cohen, 2016). This problem was highlighted in a 1989 landmark study, in which Yoshida (1989) coined the famed expression, "the Iceberg of Ignorance". This pertained to the realization that only 4% of an organization's frontline problems are known by top-management, 9% are known by middle-management, 74% by managers and 100% by employees.

By and large, the issue of "the Iceberg of Ignorance" remains a problem to this day and age (Jankowski, 2017; Corey and Elliott, 2018; Ray, 2016; Albert, 2018). In practice, this means that the management consultant during the initial phase is often tasked with greeting staff across the hierarchy (i.e., not only executives), in order to acquire a level of empathy and gaining a better understanding of their situation, why it is important, and how to go about helping the organization achieve its aspirations (Gourguechon, 2017; Poulfelt and Paynee, 1994; Senge and Krahnke, 2014).

3.2. Problem-identification phase

The problem-identification phase that seeks to answer the "who" or "which" that lies at the root of the client's problems (Heiser and Farah, 2018; Benn, Jones and Rosenfield, 2008; Schmidt, 2017). This phase is a critical part in the management consultant's work as it seeks to establish the problem as identified not only by the client but also by the consultant. That is to say, the way problems are defined affects the ability to solve them (Kubr, 2002; Ashkenas, 2012; Conoley, Conoley and Gumm, 1992). For instance, a company might find itself struggling with declining revenues/profits, or with increasing costs. They might lose market shares but fail to understand why.

In order to be able to identify root causes and solve these problems, the consultants typically start by gathering quantitative and qualitative data, mainly from internal data sources but also external if needed (Newton, 2010; Andler, 2016). Examples of internal data can be financial data, company annual reports, interviews, surveys, etc. External data sources that may be used are e.g., competitor annual reports, interviews with external experts and customer surveys. The internal and external data is used to build a solid foundation in order to understand the industry context as well as the internal starting point from where to undertake the analysis.

Analyzing the collected data to understand root causes is instrumental to every project. Management consultants often operate from a hypothesis-driven structure when developing the right choice of methods and tools for their tasks (Liedtka, 2006; Rasiel, 1999; Garrette, Phelps and Sibony, 2018). This means that the management consultant will depart from their best, educated guess of an answer to a

given problem. It should be stressed that a hypothesis-driven deduction is not "a shot in the dark", based on conjecture or personal opinion, but rather on background information, preliminary data analyses and input from various experts in the field and actors in the organization (Hamann, 2012; Weiss, 2011). While there may not be too many concrete facts upon which to base the hypothesis during the early stages of the engagement, more facts emerge the further a consultant delves into the client's engagements, meaning that the hypothesis development is the result of a highly organic and evolving process. This approach allows the consultant to quickly gain a grasp of the organization and finding a hypothesis that can either be supported or rejected rather than having to start from a blank sheet.

Nevertheless, this phase places a lot of demands on the consultant as this is a phase in which several mistakes are prone to be made. According to Kubr (2002, p. 186), common issues during this phase include:

- Mistaking symptoms for problems
- Having preconceived notions about the causes of the problems
- Looking at problems only from one sole technical viewpoint
- Disregarding how the problem is perceived in other parts/sections of the organization
- Miscalculating the sense of urgency of the problem
- Incomplete/deficient problem diagnosis
- Failure to clearly articulate the focus purpose

It is thus the role of the management consultant to help the organization avoid these common pitfalls by bringing in an objective perspective. Organizations may face difficulty in trying to avoid these kinds of mistakes due to internal forces of power and politics (Mintzberg, 1983). Although the consultant may also face such difficulties, they are often in a better position to assume an objective/neutral standpoint (Greiner and Metzger, 1983).

3.3. Analysis phase

Following the problem-identification phase, is the analysis phase, which seeks to answer the question concerning "what" and possibly even "where" something needs to be addressed. The analysis phase may actually consist of several sub-stages, depending on the analysis and research methods carried out (Biggs, 2010). During this phase, the consultant(s) will carry out an in-depth diagnosis of the problem, while assessing the type change the organization will have to undergo in order to achieve the purposes of the assignment while also assessing the client's performance, resources, needs and aspirations (Harrison, 2005; Kubr, 2002). The consultant(s) will at this stage determine the client's attitude toward change and if the client is likely to carry out suggested changes without much ado or if they need further convincing before taking action (Kubr, 2002). During this phase the consultant(s) will be able to see some possible solution emerging from the data processed. Nevertheless, a lingering issue with this phase is that fact-finding often

receives the least amount of attention (Kubr, 2002). At the same time, decisions regarding what data to look for and what data to disregard predetermines the relevance and quality of the proposed solution(s).

Another problem is that by manipulating processes by, for instance, collecting data and talking to people, the consultant may effectively yield the potential to influence the client's firm, even if on a micro-political level (Armbrüster, 2006). This may lead to altered behaviors among the client's staff as a direct result of the consultant's presence, through what is known as the "Heisenberg effect" (Verlander, 2012). This carries certain similarities to the "Hawthorne effect" and refers to a phenomenon in which the presence of a consultant/researcher affects what is being researched (Simonton, 2010). However, the role of the consultant goes further than that, as a central part of succeeding with actionable analyses is getting the organization to internalize the results of the analysis. The consultant typically helps the organization through the problem formulation where they together contextualize and articulate the problems, thus opening up for the possibility of launching concrete initiatives to address the identified problems (Baer, Dirks and Nickerson, 2013).

3.4. Implementation phase

Finally, there is the implementation phase, which seeks to answer the question concerning "how" a proposed solution could be enacted and integrated into the firm's operations. This phase marks the culmination of the consultant and the client's collaboration. If no implementation occurs, the consultant's efforts are at best incomplete or at worst have failed (Kubr, 2002). It is important for consultants to also be part of the implementation phase if they wish to influence, monitor or oversee the changes being put into practice (Baaij, 2014; Kubr, 2002). It is, however, not the consultant's prerogative to opt whether or not they should take part in the implementation.

Oftentimes, the clients believe they have the necessary skills and capacity to run the implementation by themselves, even though they, more often than not, actually lack the necessary skills. Alternatively, they may lack the finances or the interest needed to fund the implementation phase. In other cases, it is a combination of both of these reasons. In these events, it is difficult, if not to say wrong, to blame consultants for unsuccessful implementations. Consultants whose sole focus lies on a specific area of expertise and who need not concern themselves with the regular business routines of their clients would indeed have more time at their disposal, meaning that they can implement solutions at a far more rapid pace. Moreover, they also possess the required skills and knowledge to carry out these implementations, often drawing upon insights gained from past projects. However, it is important to bear in mind that the effects of consultancy may sometimes materialize after some time has passed after the completion of the project. Likewise, it is not possible to measure the firm's performance had they not chosen to enlist a consultant or vice versa. Hence, it may in some cases be difficult to

estimate the causality between consultancy and firm performance (Baaij, 2014). However, as previously discussed, management consultants are often hired to aid top management in assessing a situation and suggesting possible routes forward, rather than actually implementing a solution. In such cases, the possibility of informed choice, rather than an implemented solution, is what the organization gains from hiring consultants.

4. The digitalization of consultancy services

Management consultants of today are devoting much of their time to conducting analysis, possibly in vain, since they do not always know the extent to which their work is actually going to be implemented, or even if it will ultimately remedy the problem at hand (Kubr, 2002; Srinivasan, 2014). A consequence of this is that consultants may find it tempting to opt for the "low-hanging fruits" in the interest of achieving quick results rather than spending time on more profound and complex problems (Chase and Kumar, 2010). Thus, a salient issue that has been subject to much debate is to what extent, if at all, consultants are solving the "right" problem (Spradlin, 2012). That is to say, clients will still continue to experience the need for consultancy services, but there is an increased need for the clients to reduce their risk while still ensuring that they receive sustainable solutions that address the core of their problems (Newton, 2010). What distinguishes the best management consulting firms is their ability to go beyond the quick and sometimes simple solutions to solve the complex problems and achieve real and sustainable change. By being able to do so, they create a reputation for themselves that leads to repeat business.

With digitalization shaping the business environment, we see increasing data availability and ranges of analytics tools, leading to larger datasets to analyze and more data to navigate (Sivarajah et al., 2017; Newman, 2015). Digitalization and the digital transformation is changing the way companies do business and the problems they face, and thus also the consultant's role (Bieler, 2014). This chapter will take a closer look at what happens when the consultant is challenged to adapt to the changing market conditions to stay relevant to their clients.

The consultant's role is heavily influenced by data. Consultants tend to be data-driven in the sense that they often use different data sources in their work, using experience to bridge the gap between data sources (Curuksu, 2018). Clients hire consultants for expertise they cannot get in-house. Will digitalization make these skills available to everyone? If data access and analysis is facilitated by digitalization and made possible for everyone to learn and excel at, then what need is there for consultants at all? Several identified factors seem to decrease the need for external management consultants in the future, such as increasing data availability and increasing availability of analytics tools (Davenport, 2017). These factors, outlined next, might also change the way we look at a consultant project, leading to more modularization of the business.

4.1. Increasing data availability

Once it is simpler for organizations to gather data (internal as well as external data), they do not need to hire consultants to find data that was previously difficult to find. However, consultants will still have important functions to fill, even if gathering such data will be done to much less extent. To this end, datasets still need to be interpreted and consultants are able to infer personal experiences when making these interpretations. That is to say, consultants use business judgment and experience to bridge the gap in poor datasets. Examples of external data sources often used by consultants are industry reports, expert networks with industry experts and research and surveys done by large strategy houses. With increased access to these sources, now most of them are only a Google search or a phone call away, it is no longer necessary to bring in consultants to piece together information.

With higher quality of internal data and ways of gathering data getting better, the need for relying on external input and data sources will likely also decrease. This will decrease the need to rely on management consultants to present facts. However, management consultants also, to a large extent, provide tacit, experience-based knowledge. This allows for rapid diagnosis of situations based on heuristics, which is (barring other instructions) a set of default, go-to rules that have been developed over an extended period of time following a process of repeatedly having to address similar problems in other organizations (Newell, Shaw and Simon, 1959). As contended by Baer, Dirks and Nickerson (2013), problem formulation is a central and complex part of organizational development. For this reason, consultants who possess the ability to do this in a swift manner will likely continue to be in high demand, as opposed to the articulated knowledge of different management solutions, which will become widely accessible through networks of shared data.

4.2. Automation of organizational processes

Organizational processes are invariably complex systems, meaning that they consist of a network of several highly interactive and interrelated elements, with each of these performing its own function (Gino, 2002; Langlois, 2002). In regards to the aforementioned "four phases of consulting" (as mentioned in Section 3), digitalization impacts the first pre-analysis phase in that complex organizational processes will likely become more automatized in the future due to the advancements of various robots and AI-algorithms (Daugherty and Wilson, 2018; Davenport and Ronanki, 2018; Manyika and Sneader, 2018). Consequently, the traditional setup of most organizations of today may very well change in the near future as robots may come to take on increasingly more complicated challenges, requiring no human involvement.

The automation process that follows the digital transformation also entails that organizations are able to operate in a more agile manner, while reducing lead-times (since machines operate faster than humans). This means that it will become

more difficult, perhaps even futile, for the consultant to establish relationships with the staff with the intent of gaining insights into how the business operates. That is to say that the hypothesis-driven approach may yield less information if used in the same manner as it has been used hitherto. Moreover, digital systems and algorithms can amass vast quantities of data, meaning that the future consultants will be less likely to contribute "hard facts" that are not already known to the organization and its AI system. Hence, the consultant's "know-what" will become less important in the future, and rather the emphasis will come to rely on the consultant's "know-how", in terms of their ability of tethering out information from complex systems.

4.3. Increased availability of data-analytics tools

Increased data accuracy and higher quality of internal data, combined with an increasingly advanced analytics tool readily available to the public, makes it easier for companies to set up in-house analytics teams (Isson and Harriott, 2016; Bell and Zaric, 2013). This is already in progress with companies such as Walmart, IBM and FedEx, as they rely on analytics teams in order to gain a competitive advantage over their rivals (Bell, 2015; Mochari, 2015).

Reverting back to the four phases of consulting (found in Section 3), the second phase of "problem identification" becomes a salient issue at this stage. During this stage, the consultant devotes much time toward identifying the management problems, analyzing data to understand the root causes of these problems and attempting to devise solutions to these problems. We have seen from companies using in-house analytics teams that such arrangements are especially helpful during the third phase of a project, namely during the data analysis. It is possible that this third phase may in the future be transferred from external management consultants in favor of having it handled by the organization's in-house analytics teams.

4.4. Complex analytics tools

The access to advanced analytics tools will also increase the speed and quality of data analysis, as machines can detect patterns in big data better than humans and are not prone to the same risks of making subjective and arbitrary interpretations as humans. However, many, if not most, of these complex tools will require a sizable amount of training in order to become fully versed in them. This can in turn affect the consultant's work in different ways. One might be that consulting projects will become "modularized", where the client might request a team versed in using a certain tool or skill set. It can also lead to the internal analytics team becoming considerably streamlined, meaning that consultants will have very few sets of skills outside the designated analytics tool, which in turn may lead to a diminishing need for consultants.

While the aforementioned trends would seem to decrease the need for external management consultants in the future, there are also some other factors that work in the consultants' favor. Specifically, one such factor is the consultant's

prerogative to ask the right questions, as this is often contingent on the consultant's experience of the subject matter, as well as their decision-making abilities. Another factor working in the consultants' favor in the future is the project-based business model. These factors are discussed in greater detail next.

4.5. Asking the right questions

As previously discussed, the most important factor of a consulting project is the ability to define it accurately. Thus, it is crucial to understand the business objective to delimit the scope of what it is supposed to achieve (Hanna, 2016). Trying to find patterns in large datasets without knowing what to look for will undoubtedly lead to valuable time being wasted. As the need to have someone who knows how to ask the right questions is such an important factor, it is quite possible that there may even be an increase in the need of consultants in the future. Especially with the increased amounts of data, consultants will likely be needed to navigate the data to an even larger extent than today.

A research study conducted by the management consulting firm McKinsey and Company interviewed executives in data-driven businesses (Barton and Court, 2013; Díaz, Rowshankish and Saleh, 2018). The executives agreed that the business objective was crucial. While access to data and tools may increase the speed of the analysis and the possibility to analyze more things than in the past, it is still critical to understand the desired outcome and what problems there are to resolve. This is becoming even more important, since the quantity of data seemingly continues to grow in numbers. The external consultants have an additional advantage from conducting multiple projects within certain functional capabilities, leaving them with experience the client may lack. They also offer an outside in perspective, to look at the business from an external perspective which might be valuable. This is clearly explained by Curuksu (2018, p. 19):

> Predictive analytics may be used to identify risks and opportunities such as economic forecasts, cross-sell/up-sell targets and credit scoring. But the type of intuition that consultants develop to ask questions, pose hypotheses and drive executive decisions is still the realm of science fiction, not existing computer programs. Hence, the arrival of data scientists and big data analytics does not eliminate the need for traditional business professionals.

4.6. Big data does not mean accurate data

While data availability increases, it does not necessarily mean that the data accuracy is high (Delgado, 2015; Schuck, 2018). There are several studies showing the contrary, for example a study conducted by Deloitte (Lucker, Hogan and Trevor, 2017). The data might be from a limited sample, respondents might not answer accurately and so on. Making decisions based on inaccurate data may be even worse than making decisions based on experience combined with data. This will likely keep the demand for management consultants in the future at a stable level.

4.7. Updating extant business models

In adapting to the changes in the business environment following the digital transformation process, some consultancies have opted to capitalize on big data and advanced analytics by extending their service offerings to this category as well, providing niched and specialized services to customers needing assistance in these areas specifically. BCG Gamma and McKinsey Analytics are a couple of examples working in this direction (Curuksu, 2018; Duranton, 2019; McKinsey and Company, 2019). That is to say, rather than losing this market by leaving it up to the client's in-house analytics teams to handle, the consultancies have expanded their service offerings to better accommodate for this type of demand. Boston Consulting Group has adopted an approach where data scientists from BCG Gamma work together with the management consultants to solve the issues clients face (Duranton, 2019; AI Multiple, 2019).

Digital transformation has become a salient part of management consulting, as this transformation constitutes a major change required for their clients to survive in a digitalized world. Management consultants become key players in this regard, as the transition to a digital environment is more about management than it is about technology. Putting digital on the top management agenda, introducing agile working methods and enabling for experimentation are parts of becoming a digitally mature organization (Snow, Fjeldstad and Langer, 2017). To enable digital transformation, management consultants thus aid the organization in designing and adjusting routines in tandem with the introduction of new technologies, making it possible for the organization to use these new technologies to achieve a new, digitally-enabled, state of business. For this reason, management consultants play a pivotal role – while new technologies and analytics are a key component of becoming digitally mature, these tools are of no value unless combined with the relevant management principles. In this sense, digitalization, although often mistakenly regarded as an end state, is in essence an implementation of technological tools, which, combined with appropriate management practices, enable organizations to function in a digitalized world.

4.8. Combining management consultants with data scientists

As previously discussed, the advanced analytics tools will require an extensive amount of training from the consultants' part in order to gain proficiency in them (Consultancy.uk, 2018b). Additionally, these tools will require proficiency in statistics (Tong, Kumar and Huang, 2011). One possible way for management consultants to retain their strong market position would thus be to collaborate with data scientists, who possess knowledge of both statistics and the advanced analytics tools (Flinn, 2018; Granville, 2014). This way, the benefits of the management consultants, such as business intuition, decision-making abilities and the sense for detecting the right questions to ask, may be combined with the technical expertise of the data scientists. This, in turn, leads to strong analytical capabilities. By basing at least part of the analysis carried out by the management consultant on solid

data science would in all likelihood improve competitiveness as society moves further into the fourth industrial revolution (4IR).[1] The aforementioned project-based business models would likely facilitate a transition to teams consisting of both management consultants and data scientists. An example of this approach is the previously mentioned Gamma team at Boston Consulting Group.

4.9. The project-based business model and the project processes

Management consultants are often employed on a "need basis". While digitalization improves the convenience of having an on-going business support that provides the organization access to data so that they may make informed decisions based on the available data, there will always be fluctuations in an organization's workload and there will be times when the available staff will not have the ability or the resources to be able to solve the organization's challenges. For shorter and/or irregularly occurring projects with occasional spikes in workload, it will (even in the future) likely be easier to temporarily enlist the services of a trained task force than hiring new people with the right skills and talent.

In truth, we have already witnessed part of the digital transformation of the consultancy industry in the form of cloud-based *Kanban* boards,[2] provided by e.g., Trello, Waffle (GitHub), etc. (Błaś, 2016; Swartout, 2018). There are also more advanced cloud-based project-planning tools that view the whole process in a flow-like manner, where it is possible to zoom into the small parts of the project and add information and comments on the right granularity level. This enables real-time follow-up of the consultants' work, as they update the progress. Commenting the posts with thoughts and questions to be asked, may also facilitate the communication between the consultant and the client. There are possibilities to connect Kanban boards or project-planning tools to communication platforms such as Slack, so that the client is instantly notified when the consultant makes a comment. One may expect these features to develop even more so in the future in order to make the notification scheme even more seamless while upholding fast communication routines.

4.10. Opportunity for scalability, growth and flexibility

Of particular interest to the consulting industry is the strong potential of digitalized business models for scalability. Contrary to traditional consulting, where the number of projects and growth are limited by human resources, technology-based consulting allows scalability and growth without raising cost to a similar level (Werth, Zimmermann and Greff, 2016; Stampfl, Prügl and Osterloh, 2013). Earlier in this chapter we have identified and discussed a number of key areas and strategies that could enable technology-cognizant consultants to gain competitive advantages in the future digitalized economy. By facilitating certain processes to become more technology and customer based, consultants gain a possibility to focus on their primary decision-supporting competences, therefore consulting services can be provided in a more flexible, more individualized and more cost-efficient manner.

Deploying digital technologies will enable routine information-based tasks of consulting to become increasingly more automated and outsourceable, therefore boosting the effectiveness of physical resources, potentially reducing expenses and time invested by consultants in the services. Additionally, the non-routine essential value-generating and business-operating factors will be further enhanced. The digital transformation of consultancy also allows consultants to become more flexible both in terms of time and space, as they are no longer bound by the constraints of having to travel to the client at any one particular location (Nissen and Seifert, 2015). By integrating customers and potential third-party actors, whose help consultants may enlist for specific processes (e.g., statisticians, programmers, interface designers, etc.), into a digital interface, it is possible to facilitate a service process that is more efficient in acquiring and storing information, while providing more economical and individualized solutions. The changing roles and activities of the consultants as they evolve from traditional consulting to digital consulting, should in theory lead to increased scalability, higher growth and flexibility. Latecomers, who are too slow to recognize the potential and to embrace the power of digital technology in consulting, could soon find their services becoming obsolete or too cost-inefficient in order to provide meaningful services in the future world of consulting.

4.11. Further opportunities, risks and implications of digital consulting

The degree of success a consulting service can expect to reap through transforming conventional processes into digital ones is primarily dependent on the consultants' ability to cater for the changing needs of their customers in the technology-oriented market. While digital consulting carries many benefits over traditional consulting (such as greater flexibility, faster lead-times, more cost-efficiency and better catchment area), there is still a discernible resistance to the digital transformation of consulting among a great portion of clients as well as consultants. Indeed, digital consulting has made great headway, with many newer innovations such as web-based file-hosting systems (e.g., Dropbox) becoming more commonplace in everyday consulting use. However, due to a general lack of knowledge and trust in new technologies and their capabilities, many people tend to be skeptical and cautious of using them, at least initially.

The disparity between the standards and practices used in digital solutions as well as in consultancies themselves, is also the cause of significant barriers for widespread implementation of digital consulting. By establishing international and national standards for the services provided via digital consulting, it would be possible to make the future consulting practice more compatible with pre-existing consulting practices, meaning that already established conventions could unequivocally also be part of the new digital consulting practice. In 2017, the *ISO 20700:2017 Guidelines for Management Consultancy Services* were developed as a guideline for people or organizations for the effective management of management consulting services (ISO, 2017). By drawing upon research and experience

from a wide array of management consultancies around the world, the *ISO 20700:2017* seeks to increase transparency and effectiveness for clients as well as consultancies and aims to provide practical guidelines based on outcome while emphasizing the importance of understanding the clients' needs (Boler, 2017). To this end, a practical first step could be to update the *ISO 20700:2017* guidelines to establish a set of recognized standards that better reflect the aspects relating to digital consulting. In doing so, it would be possible to further strengthen and increase trust for and acceptance of these types of services.

To ensure maximum benefits at minimal loss for consulting providers, it is essential to clarify and to further discuss some novel opportunities and risks from perspective of both the consultant and the client. Over the past decade, the digitalization process has allowed for reduced direct face-to-face interaction in specific stages of the consulting project (in some cases the interaction may be exclusively digital on a remote basis). Using this virtual approach enables consultants to deliver customized solutions anytime and anywhere while optimizing the workload to gain a sustainable competitive advantage. Besides financial benefits and the improved flexibility of consulting services, such new type of interaction is advantageous for the client as the availability of consulting is not contingent on arranging physical meetings. Moreover, this digital type of interacting reduces much of the waiting times associated with arranging physical meetings, which in turn helps expedite the consulting project. That is not to say that the potential lack of physical meetings is without concern. It is known that face-to-face meetings help strengthen the bond of trust between the consultant and clients (Taylor, Daymond and Willard, 2018; Goman, 2016). While physical consulting meetings take a back-seat, the clients continue placing higher demands on the quality of their consultancy services (Bryder, Malmborg-Hager and Söderlind, 2016; Nissen, 2018). To that end, there is a risk that the reduced direct client-consultant interaction incurs added communication difficulties, a sense of deindividualization and weaker client-advisor relationship.

Another risk consultants must beware of is the fact that digitalization and automation of processes make consulting services increasingly prone to cyberattacks and fraud. Responsible dealing with data and adequate stability of the infrastructure are essential for successful digitalization of consulting services. Moreover, the protection of personal data as well as business data needs to be guaranteed (Schuster, 2005). When developing solutions utilizing digital technology, consultants need both to uphold the client's trust and to offer legally valid data security (Nissen and Seifert, 2015).

The lack of common practices, standards and regulatory framework in information security is an impediment to the implementation of digitalization in the consulting industry. Legal ambiguities are of particular concern, since consulting services are based on large amounts of complex data from various sources. For example, when a consultant working on the behalf of their client, extracts information about consumers from market data and then processes this information using an analytical application, an additional data-privacy approval may or may not be needed depending on the context and legal framework of the country of the

client being serviced. Thus, added consideration should be given to relevant security technologies and concepts so that the consultants are completely familiarized with all the intricacies of data security and privacy in an international setting.

All of the aforementioned factors may have damaging effects on the client-consultant trust, which is in and of itself an integral component of consulting (Glückler and Armbrüster, 2003). From a strategic point of view, it is important to establish a feeling of cohesion between the involved parties beyond the limitations of digitalization, consequently it is highly desirable for clients to feel secure about the privacy of their data and to have the continuous support and access to a consultant through personal contact if need-be.

Research studies have shown that rising degree of digitalization of consulting services lead to an observable shift in the clients' expectation and service quality criteria (Nissen, Seifert and Blumenstein, 2015). The personal client-consultant relationship decreases in significance from the client's perspective, whereas factors such as support availability, privacy and data security, reaction capability, efficiency, aesthetics and compensation rise in importance. Given the growing number of clients wishing to have a combination of digital-consulting services and conventional personal consulting, it is essential for consultants to continue to accommodate the client's wishes rather than coerce them into a style that panders to the consultant's convenience at the expense of the client's trust. To this end, it is vital that consultants ensure that they have a secure and stable digital platform and analytics infrastructure, so that the designed digital-consulting products serve to strengthen the trust and relationship with their clients. Nevertheless, a great part of the challenge for future consultants is to ensure that the quality and balance of traditional/digital services live up to the satisfaction of the ever-changing demands of their customers.

5. Conclusion

The premise of this chapter was to explore the future role of management consulting following digitalization and the digital transformation. The chapter set itself out to explore the following two research questions:

RQ 1: *How may digitalization influence the consultant's role of tomorrow?*
RQ 2: *How may the profile of the typical consultant change in the future?*

In doing this, this chapter drafted up a model outlining the four phases of consulting, consisting of the pre-analysis phase, problem identification phase, the analysis phase and the implementation phase (illustrated in Figure 15.1).

In response to RQ 1, this chapter concludes that data analytics tools will play a central role in the future. Above and beyond, it is primarily phase 3, i.e., the analysis phase, that will see the greatest benefits of digitalization. As such, the overall digitalization (and digital transformation) may decrease the perceived need for (external) management consultants in the future, as various forms of analytics tools, AIs, algorithms, scripts, etc. may become available on the market

that purports to enable for organizations to take ownership of their own optimization process.

There will undoubtedly surface companies whose business model seeks to capitalize on the advancements of digital tools in order to sell various iterations of customized package solutions to organizations in order for them to optimize their own business performances in the belief that they are saving on consultancy costs. Hence, companies may find it tempting to outsource this task to their in-house data scientists. This, in turn, may have disastrous effects as part of the consultant's role is to help the client contextualize/articulate the problem, something which the client's invariably lack the insight to do on their own accord. Management consultants also possess "tacit knowledge", which means that no matter how much data/information that is made readily available on the open market, the consultants have their own set of heuristics and knowledge of how to facilitate groups, handle organizational politics, stakeholders, etc. This also provides management consultants with the advantage of being able to swiftly assess any given situation based on their own experiences and know-how, while identifying solutions that will work well within a given particular context.

This is not to belittle the future role of data scientists by any means. On the contrary, data scientists possess valuable knowledge of statistics as well as proficiency in how to best use and interpret the advanced analytics tools. To this end, digitalization may actually serve to prompt a more integrated, multidisciplinary arrangement of management consultants and data scientists working in tandem to solve complex organizational problems.

To this end, while the fourth stage, the implementation phase, is where the whole endeavor comes to fruition, it is important to stress that implementation is not always everything. A suggestion brought forth by a consultant that is not implemented is not necessarily tantamount to failure. Sometimes the chief gain from consultancy can be that one becomes aware of one's situation and having all possible scenarios and outcomes presented to oneself and being given a sense of agency to choose one's own direction going forward.

In regards to RQ 2, the role of the typical consultant may change inasmuch that there is an added need for consultants to at least familiarize themselves with the workings of digital tools and what they can accomplish. There will also be a need for consultants to learn to work in closer collaboration with other professions, chiefly data scientists, which will place greater emphasis on the consultants' ability to be "team players". Traditionally, business students have constituted the natural selection of management consultants (Curran and Greenwald, 2006). However, with the digital age emerging, students of more data-oriented and/or technological disciplines can be expected to make a foray into management consulting (Kubr, 2002; Wright and Kipping, 2012). Thus, the importance of multidisciplinary approaches and the ability to communicate across educational backgrounds will become even more important in the digital age.

As digital technology becomes an integrated part of organizational processes, management consultants may, to a larger extent, aid organizations in working with data, rather than trying to reduce latency in manual processes. While management

consultants with long-standing practical experience will continue to be a sought-after commodity even in the future, old consultants will eventually retire and new consultants will need to earn practical experience on fresh merits. Thus, in the future, it is likely that management consulting will not only be about being able to know one's way around people, but also (if not more) about knowing one's way around "4IR" technology.

Management consultants will need to work with new technologies in a new digital and innovation-driven economy where clients will want to know how their enterprise can benefit from such digital advancements as blockchain, smart contracts[3] and algorithms (Corrales, Fenwick and Haapio, 2019). Specifically, management consultants will need to offer value that exceeds what digital technology will soon purport itself to do of its own accord (Kelley, 2016; Martin, 2009). Clients will therefore need to enlist consultants that are knowledgeable in these types of technologies in order to provide strategic advice and those consultants who are not competent enough in this area may risk losing their customers to another consultancy. Hence, being tech-savvy will in a way become quintessential in securing the customers' "brand loyalty" to the consulting firm (Corrales, Fenwick and Haapio, 2019). For this reason, fluency in digital will be a central part of core consulting skills, just as integrating systems will be a natural part of organization design and process development. However, this is not to say that the future consultants should forgo their ability to interact with humans and only be hired on the basis of possessing the necessary technological expertise (Erikson and Markuson, 2001). Rather, complexity will increase as today's distinction between human and technology processes will become less obvious, and interfaces between humans and technology will become more sophisticated and less rigid. This will require management consultants to be comfortable in interacting with both people and technology in fast-paced business processes and offer clients contextual insights and proficiency that a mere algorithm cannot. This is yet another argument favoring collaboration between management consultants and data scientists along with other professions of a heavier-set technical background.

With clients wanting advice on how to benefit from digital advancements, one could easily envision a process in which the management consultant is initially hired in order to evaluate the business needs and suggest various technical solutions, such as algorithms for e.g., predictive maintenance, or other types of predictive analysis. Following this example, the management consultant would then engage data scientists or algorithm developers/programmers in order to implement the suggested actions. Following a close working relationship between the management consultants and the technical experts, the clients would have favorable odds of being able to implement cutting-edge technology and reap its rewards, while the management consultants would deepen their knowledge and insight of the technical possibilities without losing sight of their tacit knowledge as previously discussed.

Consequently, rather than launching large-scale business transformation programs involving prolonged change-management efforts, consulting will become more agile as the result and output of change efforts may be instantaneous,

making experimentation and iterative problem-solving in short time frames into the standard practice of management consulting. Management consultant profiles may gravitate toward skills within iterative experimental methods in order to fit with the agility of the digital business.

Most essential value-generating and business-operating factors have the potential to be enhanced or automated using digital technologies. However, in order to gain a competitive advantage, these factors need to be constantly attuned to the changes in the wants and needs of the clients, as well as to the market and the technological development. Moreover the digitalization of the consulting industry offers a number of economic advantages. One example is the scalability of virtual (remote) consulting services. Another example is the cost-savings and time-efficiency brought on by automatization of analytics as well as the decreased traveling activities. This, in turn, could open up new market shares and for a new type of client that was previously unable to afford the costly services rendered via conventional face-to-face consulting. Nevertheless, future consultants should take caution of the limitations of digitalization and take as many precautionary measures as necessary in order to preempt and counteract the risks associated with over reliance on digital technologies.

Of course, consultants who are early adopters of digital technology will likely continue to have a head start over those consultants who do not, especially the early adopters who are able to add value through their own creative input. The latter category entails that they have the ability to put their own touch on things and are able to infer unpredictable, but accurate conclusions in a way that induces the same Eureka effect that a machine cannot (Hull, 2002). In this sense, (and tying into the previously answered RQ 1), human consultants will continue to be indispensable to the consultancy profession even in a future where AI has advanced beyond the Turing test[4] (Christian, 2011).

Admittedly, many management consultants of today would already define their work style as "agile" and it is true that the word "agile" has become something of a buzzword that has permeated the consultancy industry for many years to describe a sense of being fashionable and up-to-date with how to implement processes, projects and products (Rigby, Sutherland and Takeuchi, 2016; Fuchs and Golenhofen, 2019; Consultancy.uk, 2018a). However, agile methods will become even more accentuated in a digitalized age and will in many cases form a building block of the consultants' work. This will in turn affect the scope of projects (end-to-end), the consultants' skills and/or team setup, as well as the cost-revenue-structure of the project controlling (Krüger and Teuteberg, 2018).

Nevertheless, the digital age may prompt the consultancy organizations to take on a more agile profile. This is in particular regard to those organizations that deal with large-scale and far-reaching transformations that have hitherto not had the capacity to conduct their work in a faster manner.

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Notes

1 The fourth industrial revolution (4IR) denotes a fusion of technologies that blurs the lines between the physical, digital and biological spheres via technological breakthroughs in different fields, such as robotization, automatization, Internet of Things (IoT), artificial intelligence, 3D printing, etc.
2 *Kanban* (Japanese: 看板) is a lean method to manage and improve work across human systems. A *Kanban board* is an agile project-management tool designed to help visualize work, limit work-in-progress and/or maximize efficiency or flow.
3 A smart contract consists of a computer protocol that seeks to digitally facilitate, verify or enforce the negotiation or performance of a contract. These types of contracts allow credible transactions to take place without the need of involving third parties as these types of transactions are trackable and irreversible.
4 The Turing test (named after English mathematician Alan Turing [1912–1954]) denotes a situation in which an AI is able to communicate with a human being via a text-based interface in a way that is indiscernible from another human being.

References

AI Multiple, 2019. *Data Science Consulting & Consultants in 2019: In-depth Guide*. [online] Available at: <https://blog.aimultiple.com/data-science-consulting> [Accessed 24 Sep. 2019].

Albert, B., 2018. *Principled Profits: Outward Success is an Inside Job*. New York, NY: Morgan James Publishing.

Andler, N., 2016. *Tools for Project Management, Workshops and Consulting: A Must-Have Compendium of Essential Tools and Techniques*. 3rd ed. Erlangen, Germany: Publicis Publishing.

Armbrüster, T., 2006. *The Economics and Sociology of Management Consulting*. Cambridge, UK: Cambridge University Press.

Ashkenas, R., 2012. *From Problem Solver to President: What It Takes for a Consultant to Become a Leader*. [online] Forbes. Available at: <www.forbes.com/sites/ronashkenas/2012/09/19/from-problem-solver-to-president-what-it-takes-for-a-consultant-to-become-a-leader> [Accessed 24 Aug. 2019].

Baaij, M.G., 2014. *An Introduction to Management Consultancy*. London, UK: Sage Publications.

Baer, M., Dirks, K.T. and Nickerson, J.A., 2013. Microfoundations of strategic problem formulation. *Strategic Management Journal*, 34(2), pp. 197–214.

Banks, J. and Coutu, D., 2008. *How to Protect Your Job in a Recession*. [online] Harvard Business Review. Available at: <https://hbr.org/2008/09/how-to-protect-your-job-in-a-recession> [Accessed 24 Sep. 2019].

Barton, D. and Court, D., 2013. *Three Keys to Building a Data-driven Strategy*. [online] McKinsey & Company. Available at: <www.mckinsey.com/business-functions/digital-mckinsey/our-insights/three-keys-to-building-a-data-driven-strategy> [Accessed 24 Sep 2019].

Baumann, H.D., 2009. *Building Lean Companies: How to Keep Companies Profitable as They Grow*. Garden City, NY: Morgan James Publishing.

Bell, P.C., 2015. *Sustaining an Analytics Advantage*. [online] MIT Sloan Management Review. Available at: <https://sloanreview.mit.edu/article/sustaining-an-analytics-advantage> [Accessed 24 Sep. 2019].

Bell, P.C. and Zaric, G., 2013. *Analytics for Managers: With Excel*. London, UK: Routledge.

Benn, A.E., Jones, G.W. and Rosenfield, S., 2008. Analysis of instructional consultants' questions and alternatives to questions during the problem identification interview. *Journal of Educational and Psychological Consultation*, 18(1), pp. 54–80.

Berry, A. and Oakley, K., 1994. Consultancies: Agents of organizational development. Part II. *Leadership & Organization Development Journal*, 15(1), pp. 13–21.

Bieler, D., 2014. *Digital Transformation is Changing the Market For Consulting – Observations About Internal Cultural Transformation At PWC*. [online] Forrester. Available at: <https://go.forrester.com/blogs/14-08-15-digital_transformation_is_changing_the_market_for_consulting_observations_about_internal_cultural_trans> [Accessed 24 Sep. 2019].

Biggs, D., 2010. *Management Consulting: A Guide for Students*. Andover, UK: Cengage Learning.

Błaś, R., 2016. Building trust among the clients of cloud computing industry: Case study of Trello, Inc. *Journal of Positive Management*, 7(2), pp. 3–14.

Boler, J., 2017. *New Standard ISO 20700 to Optimize Management Consultancies*. [online] The Auditor. Available at: <www.theauditoronline.com/new-standard-iso-20700-to-optimize-management-consultancies> [Accessed 24 Sep. 2019].

Bryder, K., Malmborg-Hager, A. and Söderlind, E., 2016. *Virtual Business Models: Entrepreneurial Risks and Rewards*. Amsterdam, Netherlands: Woodhead Publishing.

Burtonshaw-Gunn, S.A., 2010. *Essential Tools for Management Consulting: Tools, Models and Approaches for Clients and Consultants*. Chichester, UK: John Wiley & Sons.

Chase, R. and Kumar, R., 2010. Operations management consulting. In: L.E. Greiner and F. Poulfelt, eds., *Management Consulting Today and Tomorrow: Perspectives and Advice from 27 Leading World Experts*. New York, NY: Routledge, pp. 151–172.

Christensen, C.M., Wang, D. and van Bever, D.C.M., 2013. Consulting on the cusp of disruption. *Harvard Business Review*, 91(10), pp. 106–114.

Christian, B., 2011. *The Most Human Human: What Artificial Intelligence Teaches Us About Being Alive*. London, UK: Penguin.

Cohen, W.A., 2016. *Peter Drucker on Consulting: How to Apply Drucker's Principles for Business Success*. New York, NY: LID Publishing Inc.

Conoley, C.W., Conoley, J.C. and Gumm, W.B., 1992. Effects of consultee problem presentation and consultant training on consultant problem definition. *Journal of Counseling & Development*, 71(1), pp. 60–62.

Consultancy.uk, 2018a. *Agile Working is Booming. Five Trends in Agile to Look Out For*. [online] Available at: <www.consultancy.uk/news/17043/agile-working-is-booming-five-trends-in-agile-to-look-out-for> [Accessed 24 Sep. 2019].

Consultancy.uk, 2018b. *How Data analytics are Changing the Consulting Industry*. [online] Consultancy.uk. Available at: <www.consultancy.uk/news/18522/how-data-analytics-are-changing-the-consulting-industry> [Accessed 24 Sep. 2019].

Cooper, S. and Endacott, R., 2007. Generic qualitative research: A design for qualitative research in emergency care? *Emergency Medicine Journal*, 24(12), pp. 816–819.

Corey, D. and Elliott, G., 2018. *Build It: The Rebel Playbook for World-Class Employee Engagement*. Chichester, UK: Wiley.

Corrales, M., Fenwick, M. and Haapio, H., 2019. Digital technologies, legal design and the future of the legal profession. In: M. Corrales, M. Fenwick and H. Haapio, eds., *Legal Tech, Smart Contracts and Blockchain*. Singapore, Singapore: Springer, pp. 1–15.

Cummings, T., 2010. Intervention strategies in management consulting. In: L.E. Greiner and F. Poulfelt, eds., *Management Consulting Today and Tomorrow: Perspectives and Advice from 27 Leading World Experts*. London, UK: Routledge, pp. 279–302.

Cummings, T.G. and Worley, C.G., 2013. *Organization Development and Change*. 10th ed. Stamford, CT: Cengage Learning.

Curran, S. and Greenwald, S., 2006. *Smart Moves for Liberal Arts Grads: Finding a Path to Your Perfect Career*. Berkeley, CA: Ten Speed Press.

Curuksu, J., 2018. *Data Driven: An Introduction to Management Consulting in the 21st Century*. Cham, Switzerland: Springer.

Czerniawska, F., 1999. *Management Consultancy in the 21st Century*. West Lafayette, IN: Purdue University Press.

Daugherty, P.R. and Wilson, H.J., 2018. *Human + Machine: Reimagining Work in the Age of AI*. Boston, MA: Harvard Business Review Press.

Davenport, T.H., 2017. *How Analytics Has Changed in the Last 10 Years (and How It's Stayed the Same)*. [online] Harvard Business Review. Available at: <https://hbr.org/2017/06/how-analytics-has-changed-in-the-last-10-years-and-how-its-stayed-the-same> [Accessed 24 Sep. 2019].

Davenport, T.H. and Ronanki, R., 2018. Artificial intelligence for the real world. *Harvard Business Review,* 96(1), pp. 108–116.

David, R.J., Sine, W.D. and Haveman, H.A., 2013. Seizing opportunity in emerging fields: How institutional entrepreneurs legitimated the professional form of management consulting. *Organization Science*, 24(2), pp. 356–377.

Delgado, R., 2015. *Improving the Accuracy of Big Data Analysis*. [online] Dataconomy. Available at: <https://dataconomy.com/2015/10/improving-the-accuracy-of-big-data-analysis-2> [Accessed 24 Sep. 2019].

Díaz, A., Rowshankish, K. and Saleh, T., 2018. *Why data culture matters*. [online] McKinsey Quarterly. Available at: <www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/why-data-culture-matters> [Accessed 24 Sep. 2019].

Duranton, S., 2019. *Growing Business Through Applied Data Science and Advanced Technology*. [online] BCG Gamma. Available at: <www.bcg.com/beyond-consulting/bcg-gamma/default.aspx> [Accessed 24 Sep. 2019].

Elliott, R. and Timulak, L., 2005. Descriptive and interpretive approaches to qualitative research. In: J. Miles and P. Gilbert, eds., *A Handbook of Research Methods in Clinical and Health Psychology*. Oxford, UK: Oxford University Press, pp. 147–160.

Erikson, R. and Markuson, C., 2001. *Designing a School Library Media Center for the Future*. 1st ed. Chicago, IL: American Library Association.

Fincham, R., Mohe, M. and Seidl, D., 2013. Guest editors' introduction. *International Studies of Management & Organization*, 43(3), pp. 3–10.

Flinn, S., 2018. *Optimizing Data-to-Learning-to-Action: The Modern Approach to Continuous Performance Improvement for Businesses*. New York, NY: Apress.

Fuchs, C. and Golenhofen, F., 2019. *Mastering Disruption and Innovation in Product Management: Connecting the Dots*. Cham, Switzerland: Springer.

Garrette, B., Phelps, C. and Sibony, O., 2018. *Cracked It!: How to Solve Big Problems and Sell Solutions Like Top Strategy Consultants*. Cham, Switzerland: Palgrave Macmillan.

Gino, F., 2002. Complexity measures in decomposable structures. In: *EURAM (European Academy of Management) Conference on "Innovative Research in Management", May 9–11*. Stockholm, Sweden.

Glückler, J. and Armbrüster, T., 2003. Bridging uncertainty in management consulting: The mechanisms of trust and networked reputation. *Organization Studies*, 24(2), pp. 269–297.

Goman, C.K., 2016. *The Immeasurable Importance of Face-To-Face Meetings*. [online] Forbes. Available at: <www.forbes.com/sites/carolkinseygoman/2016/03/11/the-immeasurable-importance-of-face-to-face-meetings> [Accessed 24 Sep. 2019].

Gourguechon, P., 2017. *Empathy Is an Essential Leadership Skill – And There's Nothing Soft About It*. [online] Forbes. Available at: <www.forbes.com/sites/prudygourgue

chon/2017/12/26/empathy-is-an-essential-leadership-skill-and-theres-nothing-soft-about-it> [Accessed 24 Sep. 2019].

Granville, V., 2014. *Developing Analytic Talent: Becoming a Data Scientist*. Indianapolis, IN: John Wiley & Sons.

Greiner, L.E. and Metzger, R.O., 1983. *Consulting to Management*. Englewood Cliffs, NJ: Prentice-Hall.

Griffin, R.W., 2017. *Management*. 12th ed. Boston, MA: Cengage Learning.

Hamann, T.K., 2012. Application of systems thinking in management consulting. In: S.N. Grösser and R. Zeier, eds., *Systemic Management for Intelligent Organizations: Concepts, Models-Based Approaches and Applications*. Heidelberg, Germany: Springer, pp. 195–208.

Hanna, N.K., 2016. Mastering digital transformation. In: E.G. Carayannis and N.K. Hanna, eds., *Mastering Digital Transformation (Innovation, Technology, and Education for Growth)*. Bingley, UK: Emerald Publishing, pp. i–xxvi.

Harrison, F. and Lock, D., 2004. *Advanced Project Management: A Structured Approach*. 4th ed. Aldershot, UK: Gower.

Harrison, M.I., 2005. *Diagnosing Organizations: Methods, Models, and Processes*. 3rd ed. Thousand Oaks, CA: Sage Publications.

Harvard Business School, 2018. *Detailed Charts*. [online] Recruiting. Available at: <www.hbs.edu/recruiting/data/Pages/detailed-charts.aspx> [Accessed 24 Sep. 2019].

Heiser, D.R. and Farah, B.N., 2018. *Problem Solving*. [online] Reference for Business. Available at: <www.referenceforbusiness.com/management/Or-Pr/Problem-Solving.html> [Accessed 24 Sep. 2019].

Hodges, J., 2017. *Consultancy, Organizational Development and Change: A Practical Guide to Delivering Value*. London, UK: Kogan Page.

Hope, K., 2016. *What Does a Management Consultant Do Anyway?* [online] BBC News. Available at: <www.bbc.com/news/business-35220061> [Accessed 24 Sep. 2019].

Hull, J., 2002. *Are Humans Obsolete?: How To Deal With What May Come*. Scotts Valley, CA: CreateSpace.

Hyman, L., 2016. Temps, consultants, and the rise of the precarious economy. *The Hedgehog Review*, 18(1), pp. 18–32.

ISO, 2017. *ISO 20700:2017 Guidelines For Management Consultancy Services*. [online] Available at: <www.iso.org/standard/63501.html> [Accessed 24 Sep. 2019].

Isson, J.P. and Harriott, J., 2016. *People Analytics in the Era of Big Data: Changing the Way You Attract, Acquire, Develop, and Retain Talent*. Hoboken, NJ: Wiley.

Jankowski, A., 2017. *Interactive Granular Computations in Networks and Systems Engineering: A Practical Perspective*. Cham, Switzerland: Springer.

Kelley, B., 2016. *Artificial Intelligence and the Consulting Industry – Innovation Excellence*. [online] Innovation Excellence. Available at: <www.innovationexcellence.com/blog/2016/08/31/artificial-intelligence-and-the-consulting-industry> [Accessed 24 Sep. 2019].

Keuning, D., 2007. *Management: A European Perspective*. 2nd ed. London, UK: Routledge.

Kim, H., Sefcik, J.S. and Bradway, C., 2017. Characteristics of qualitative descriptive studies: A systematic review. *Research in Nursing & Health*, 40(1), pp. 23–42.

Krüger, N. and Teuteberg, F., 2018. Consulting business models in the digital era. In: P. Drews, B. Funk, P. Niemeyer and L. Xie, eds., *Data driven X – Turning Data into Value, Band III, Multikonferenz Wirtschaftsinformatik (MKWI), Leuphana Universität, 6–8 March*. Lüneburg, Germany: Leuphana Universität, pp. 1273–1284.

Kubr, M., 2002. *Management Consulting: A Guide to the Profession*. 4th ed. Geneva, Switzerland: International Labour Office.

Langlois, R.N., 2002. Modularity in technology and organization. *Journal of Economic Behavior & Organization*, 49(1), pp. 19–37.

Liedtka, J., 2006. *Using Hypothesis-Driven Thinking in Strategy Consulting*. Charlottesville, VA: Darden School of Business, University of Virginia.

Lucker, J., Hogan, S.K. and Trevor, B., 2017. Predictably inaccurate: The prevalence and perils of bad big data. *Deloitte Review*, 21, pp. 8–25.

Management Consulted, 2018. *2018 Management Consulting Salaries for Undergraduates, MBAs/PhDs, & Interns*. [online] Available at: <https://managementconsulted.com/consulting-salaries/2018-management-consulting-salaries-for-undergraduates-mbas phds-interns> [Accessed 24 Sep. 2019].

Manyika, J. and Sneader, K., 2018. *AI, Automation, and the Future of Work: Ten Things to Solve for*. [online] McKinsey & Company. Available at: <www.mckinsey.com/featured-insights/future-of-work/ai-automation-and-the-future-of-work-ten-things-to-solve-for> [Accessed 24 Sep. 2019].

Marriage, M., 2018. *Management Consultants Split on How to Make Digital Add Up*. [online] Financial Times. Available at: <www.ft.com/content/6dd91d80-caf8-11e7-8536-d321d0d897a3> [Accessed 24 Sep. 2019].

Martin, R.L., 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Boston, MA: Harvard Business Press.

McKinsey & Company, 2019. *About This Practice*. [online] McKinsey Analytics. Available at: <www.mckinsey.com/business-functions/mckinsey-analytics/how-we-help-clients/about-this-practice> [Accessed 24 Sep. 2019].

Mintzberg, H., 1983. *Power in and Around Organizations*. Englewood Cliffs, NJ: Prentice Hall.

Mochari, I., 2015. *5 Ways to Sustain Your Analytics Advantage*. [online] Inc. Available at: <www.inc.com/ilan-mochari/5-ways-to-sustain-your-analytics-advantage.html> [Accessed 24 Sep. 2019].

Momani, B., 2013. Management consultants and the United States' public sector. *Business and Politics*, 15(3), pp. 381–399.

Murphy, E. and Dingwall, R., 1998. Qualitative methods in health services research. In: N. Black, B. Reeves, J. Brazier and R. Fitzpatrick, eds., *Health Services Research Methods: A Guide to Best Practice*. London, UK: BMJ Books, pp. 129–140.

Newell, A., Shaw, J.C. and Simon, H.A., 1959. The Processes of Creative Thinking. In: *Symposium on Creative Thinking, University of Colorado, Boulder, Colorado, May 16*. Santa Monica, CA: RAND Corporation, p. 1320, pp. 1–82.

Newman, D., 2015. *The Role Big Data Plays In Digital Transformation*. [online] Forbes. Available at: <www.forbes.com/sites/danielnewman/2015/12/22/the-role-big-data-plays-in-digital-transformation> [Accessed 24 Sep. 2019].

Newton, R., 2010. *The Management Consultant: Mastering the Art of Consultancy*. London, UK: Financial Times/Prentice Hall.

Nisen, M., 2013. *Why Management Consultants Make So Much*. [online] Business Insider. Available at: <www.businessinsider.com/why-management-consultants-make-so-much-2013-11> [Accessed 24 Sep. 2019].

Nissen, V., 2018. Digital transformation of the consulting industry – Introduction and overview. In: V. Nissen, ed., *Digital Transformation of the Consulting Industry: Extending the Traditional Delivery Model*. Cham, Switzerland: Springer, pp. 1–60.

Nissen, V. and Seifert, H., 2015. Virtualization of Consulting – Benefits, Risks and a Suggested Decision Process. In: P. Pavlou and C. Saunders, eds., *21st Americas Conference on Information Systems (AMCIS 2015), August 13–15, Puerto Rico*. Atlanta, GA: Association for Information Systems, pp. 1380–1391.

Nissen, V., Seifert, H. and Blumenstein, M., 2015. Virtualisierung von Beratungsleistungen: Qualitätsanforderungen, Chancen und Risiken der digitalen Transformation in der Unternehmensberatung aus der Klientenperspektive [Virtualization of consulting services: Quality requirements, opportunities and risks]. In: T. Deelmann and D.M. Ockel, eds., *Handbuch der Unternehmensberatung [Handbok för Management Consulting]*, 25th ed. Berlin, Germany: Erich Schmidt Verlag, pp. 7311–7312.

O'Mahoney, J. and Markham, C., 2013. *Management Consultancy*. 2nd ed. Oxford, UK: Oxford University Press.

Oxford Dictionaries, 2018. *Consultant*. [online] Definition of 'Consultant' in English by Oxford Dictionaries. Available at: <https://en.oxforddictionaries.com/definition/consultant> [Accessed 24 Sep. 2019].

Poulfelt, F. and Paynee, A., 1994. Management consultants: Client and consultant perspectives. *Scandinavian Journal of Management*, 10(4), pp. 421–436.

Rasiel, E.M., 1999. *The McKinsey Way*. New York, NY: McGraw Hill.

Ray, G.D., 2016. Navigating the human landscape in cross-border mergers and acquisitions. *Strategic Direction*, 32(9), pp. 11–14.

Rigby, D.K., Sutherland, J. and Takeuchi, H., 2016. Embracing agile. *Harvard Business Review,* 94(5), pp. 40–50.

Sarvary, M., 1999. Knowledge management and competition in the consulting industry. *California Management Review*, 41(2), pp. 95–107.

Schmidt, A., 2017. *The Phases of Consulting*. [online] Bizfluent. Available at: <https://bizfluent.com/info-8636969-phases-consulting.html> [Accessed 24 Sep. 2019].

Schuck, H., 2018. *Why Data Accuracy Is Critical to the Evolution of Artificial Intelligence In B2B Sales*. [online] Forbes. Available at: <www.forbes.com/sites/forbestechcouncil/2018/05/02/why-data-accuracy-is-critical-to-the-evolution-of-artificial-intelligence-in-b2b-sales> [Accessed 24 Sep. 2019].

Schuster, K., 2005. *E-Consulting: Chancen und Risiken [E-Consulting: Chances and Risks]*. Munich, Germany: Oldenbourg Wissenschaftsverlag.

Scott, B. and Barnes, B.K., 2011. *Consulting on the Inside: An Internal Consultant's Guide to Living and Working Inside Organizations*. Alexandria, VA: ASTD Press.

Senge, P. and Krahnke, K., 2014. Transcendent empathy: The ability to see the larger system. In: K. Pavlovich and K. Krahnke, eds., *Organizing through Empathy*. New York, NY: Routledge, pp. 185–202.

Simonton, D.K., 2010. Heisenberg effect. In: N.J. Salkind, ed., *Encyclopedia of Research Design*. Thousand Oaks, CA: Sage Publications, pp. 563–567.

Sivarajah, U., Kamal, M.M., Irani, Z. and Weerakkody, V., 2017. Critical analysis of Big Data challenges and analytical methods. *Journal of Business Research*, 70, pp. 263–286.

Snow, C.C., Fjeldstad, Ø.D. and Langer, A.M., 2017. Designing the digital organization. *Journal of Organization Design*, 6(1), p. 7, pp. 1–13.

Spradlin, D., 2012. *Are You Solving the Right Problem?* [online] Harvard Business Review. Available at: <https://hbr.org/2012/09/are-you-solving-the-right-problem> [Accessed 24 Sep. 2019].

Srinivasan, R., 2014. The management consulting industry: Growth of consulting services in India: Panel discussion. *IIMB Management Review*, 26(4), pp. 257–270.

Stampfl, G., Prügl, R. and Osterloh, V., 2013. An explorative model of business model scalability. *International Journal of Product Development*, 18(3–4), pp. 226–248.

Swartout, P., 2018. *Continuous Delivery and DevOps – A Quickstart Guide: Start Your Journey to Successful Adoption of CD and DevOps*. 3rd ed. Birmingham, UK: Packt Publishing.

Taylor, M., Daymond, J. and Willard, J., 2018. Building trust across international boundaries: The founder's role in consulting firm's early development. In: M. Zhang, ed., *Trust Building and Boundary Spanning in Cross-Border Management*. New York, NY: Routledge, pp. 86–106.

Tong, H., Kumar, T.K. and Huang, Y., 2011. *Developing Econometrics*. Chichester, UK: John Wiley & Sons.

Tordoir, P.P., 1995. *The Professional Knowledge Economy: The Management and Integration of Professional Services in Business Organizations*. Dordrecht. Netherlands: Springer.

Turner, A.N., 1982. Consulting is more than giving advice. *Harvard Business Review*, 60(5), pp. 120–129.

Verlander, E.G., 2012. *The Practice of Professional Consulting*. San Francisco, CA: Pfeiffer.

Weiss, A.E., 2011. *Key Business Solutions: Essential Problem-solving Tools and Techniques That Every Manager Needs to Know*. Harlow, UK: FT Press.

Werth, D., Zimmermann, P. and Greff, T., 2016. Self-service consulting: Conceiving customer-operated digital IT consulting services. In: *End-user Information Systems, Innovation, and Organizational Change (SIGOSRA), Proceedings of the 22nd Americas Conference on Information Systems (AMCIS 2016), San Diego*, *CA*. Atlanta, GA: Association for Information Systems, pp. 1–10.

White, A., 2011. *Management Consultancy Careers: What the Experts Said*. [online] The Guardian. Available at: <www.theguardian.com/careers/management-consultancy-advice> [Accessed 24 Sep. 2019].

Wickham, L. and Wilcock, J., 2016. *Management Consulting: Delivering an Effective Project*. 5th ed. Harlow, UK: Pearson.

Wright, C. and Kipping, M., 2012. The engineering origins of the consulting industry and its long shadow. In: M. Kipping and T. Clark, eds., *The Oxford Handbook of Management Consulting*. Oxford, UK, pp. 29–50.

Yoshida, S., 1989. The Iceberg of ignorance. In: *International Quality Symposium*. Mexico City, Mexico.